Research is at the heart of any major university. It stimulates curiosity, captivates intellectual talents, expands human knowledge, and paves the way for better teaching and learning. The Hong Kong University of Science and Technology is fortunate to have attracted high caliber researchers by providing an excellent environment in which they can conduct quality research and teaching.

The quality of research and the productivity of researchers at a university can be assessed by examining the input, resources and facilities, and output. These are, of course, interrelated because much of the funding awarded to faculty comes from competitive, internationally peer-reviewed sources. Success is dependent on the credibility of proposals, the research infrastructure of the university, and the effectiveness with which previous funding has been utilized, i.e., the output and track record of the investigators.

This volume highlights the research activities of HKUST during the year 1997-98. It also provides a summary of the research in progress. We hope that it will serve to promote interactions among researchers at this and other universities and between the University and society at large.

Professor Otto C.C. Lin

Vice-President for Research and Development
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Professor Otto C.C. Lin

Vice-President for Research and Development
The Year in Review

The Hong Kong University of Science and Technology (HKUST) has matured as a research university. It has remained true to its objectives of becoming and being recognized as a leading research institution in the Asia Pacific region. We seek more than research excellence, however. Through research, we seek to serve and to benefit the society that has invested in the development of this university by:

(i) training the human resources that industry, business and government need for Hong Kong and the region to be competitive and prosperous into the 21st century;

(ii) engaging in collaborative research with industry;

(iii) stimulating the diffusion, transfer and beneficial application of knowledge and technology;

(iv) assisting the establishment and growth of technology start-up companies to create wealth and employment in Hong Kong.

While the University has reached its target undergraduate population, with 5,594 students as of 30 June 1998, the strength of our postgraduate program continues to grow. In the November 1997 Congregation, 40 and 333 students received PhD and Masters degrees, respectively. Full and part-time postgraduate student numbers at the end of the year reached 1,434, up 7 percent over the previous year.

In June 1998, HKUST received $79.9 million for 143 new projects in RGC's competitive earmarked research grants program. Our overall project success rate, at 61 percent, attests to the quality of research being undertaken at HKUST. The growth in CERG funding and new projects is illustrated in Figure 1.
CERG funding was but one component of the $224.7 million of new external research funding that was secured by researchers during the year, from the various peer-reviewed programs of RGC and UGC, from HK government agencies such as the Industrial and Services Support Funds of the Industry Department, from non-profit organizations such as the Croucher and Chiang Ching-kuo Foundations, and from business and industry. Sources of research funding, by category, are shown in Figure 2.

This funding resulted from sustained research excellence across all 19 academic departments; a few representative examples of research achievements during the year are:

- the discovery of novel forms of cell cycle inhibitors in neoplastic cells
● the development of sensitive bioassays for screening the pharmacological and toxicological properties of traditional Chinese medicines

● identification of a new class of growth regulator affecting plant growth and development

● the introduction of a new, unified coordinate system for computational fluid dynamics which, for 2-D flow, has proved superior to both Eulerian and Lagrangian coordinates

● the fabrication of self-assembled ZnSe quantum dots from which photoluminescent light emission is twenty times stronger than that from bulk material

● influential journal articles on cost-volume-profit relations under conditions of uncertainty, auditors' litigation, responsibilities of company directors, and financial disclosures for Hong Kong companies

● in-depth analyses of Chinese accounting reforms and standards, recent changes in China's banking and monetary system, competition and privatization in China's rural industry, and the impact of economic growth and reform on labor migration and social mobility in China

● co-sponsorship by the South China Research Center of an international conference on comparative philosophy dealing with the question of "Transcendence and Immanence."

● In accordance with its mandate, the University continues to contribute to the economic and social development of Hong Kong. Representative examples of applied research, partnerships, and collaborations with business and industry include:

● the filing of a patent for a novel neurotrophin which has an ability to support the survival and neurite outgrowth of embryonic dorsal root ganglion neurons

● transfer of technology for economically viable production of recombinant Epidermal Growth Factor (an agent used for treating skin trauma and promoting skin growth) to a local biotechnology company

● the development of high performance cement-based composites and products for building and infrastructure construction

● the prototype demonstration of a full-colour microdisplay consisting of liquid crystal on silicon which is capable of extremely high resolution [1024 x 768 (XGA)] and full integration with all driver/controller circuits on the same silicon chip

● development of a 3D garment design software, allowing parametric interactive design modification, and a substantial shortening of cycle time from design, pre-production, to fitted garment product

● design and implementation of a Wind Warning System for MTRC's new
Airport Express train to ensure safe operation during adverse wind conditions

- establishment of the Hang Lung Center for Organizational Research to promote, develop and disseminate the knowledge on China-related management and organizational practises.

Researchers continue to have an impact, not just locally but globally, and their work and achievements are receiving recognition from their peers and professional organisations. A few examples include:

- a Civil Engineering faculty member (Dr. C. M. Chan) was the co-recipient of the state-of-the-art award from the American Society of Civil Engineers for his contribution in the publication "Guide to Structural Optimization" which is expected to have significant impact on the design of tall buildings

- Prof. Lung Fei Lee was ranked as the world's third most productive researcher in the field of econometrics

- a study entitled "Alternative approaches to the employee-organisation relationship: Does investment in employees pay off?" by Prof. Anne Tsui and co-authors won the 1998 Academic Achievement Award from the Human Resource Management Division of the Academy of Management.

During the year, the structure and functional responsibilities of units within the Research & Development Branch were reviewed. It was considered that the Research Center had served its purpose by establishing a culture of multidisciplinary research and by gaining credibility for the University in applied research activities relevant to Hong Kong and the region. A more integrated, seamless model of organisational responsibility was developed to serve the full spectrum of activity from the most basic research to business development. The R & D Branch, in close collaboration with the Academic Affairs Branch, now comprises:

**Office of Contract and Grant Administration (OCGA)** identifies and promotes sources of research funding; assists faculty to prepare proposals; administers research funding; maintains research information databases; reports on research activities; assists faculty to prepare project reports and publications

**Engineering Industrial Consortium (EIC)** helps to establish industrial contacts and cooperation; organises professional development and training programs; builds collaborative research activities, promotes technology diffusion

**Technology Transfer Center (TTC)** provides industrial liaison, assists faculty in developing proposals requiring industrial collaboration; assists technology development activities; facilitates technology transfer

**Applied Technology Center (ATC)** bridges the gap between applied research in academic labs and technology implementation by industry by establishing technology development projects, demonstration programs, pilot plant operations, and pre-commercialization activities
**RandD Corporation** assesses, protects, markets and commercializes intellectual property as the separate business arm of the University; manages a venture capital fund; assists the establishment and growth of technology start-up companies; manages the Technology Center, an incubation facility established in partnership with Hong Kong Industrial Technology Centre Corporation (HKITCC).

With these restructured functional responsibilities, the University now has the resources to make a more substantial contribution to economic development by growing and applying the excellent intellectual and physical resources of the University and working with technology industries to expand this sector of the economy for the long-term benefit of Hong Kong. HKUST is thus ready and able to serve its community.

**1. Institutional Policy on Research**

HKUST admitted its first students in 1991. 1997-98 was thus its seventh year of operation. While the foundation research policies have served the University well, we continue to review and fine-tune our operational practices to ensure that resources are used effectively towards achieving our mandate to serve social, economic and technological development in Hong Kong and the region.

Research is integral to the overall mission of the University. HKUST's research policies are designed to achieve both world-class excellence and techno-economic benefits to Hong Kong through quality, focus and synergy.

Quality is achieved through human and physical resources. HKUST has attracted, and continues to attract, senior faculty of great distinction and established reputation, junior faculty of proven research capability, and postgraduate students with great promise. The University has created an environment that is both supportive and demanding. Our strong record of publication, success in winning competitive grants and growing international reputation attest to the quality of research being conducted at HKUST.

Focus is achieved as a result of the identification of strategic areas of research and the recruitment of faculty to build strengths in these areas. Wireless communications, protein engineering, neuro-biology, microelectronics, photonics, nano-science and display technology are but a few such areas in which substantial strength has been achieved. In 1996-97, the University identified and provided developmental resources for a number of "Emerging High Impact Areas" and "Targets of Opportunity", including structural and construction engineering, electronic packaging and assembly, transportation systems, speech recognition and machine translation, Chinese herbal medicine, nanostructures science and technology, and China business and management. These and some other areas were further strengthened by an injection of resources from the allocation of "Areas of Excellence" funding from UGC in 1997-98.

Consequently, HKUST submitted 21 two-page Letters-of-Intent for UGC's Areas of Excellence (AoE) program in July 1998; all 21 are areas that we believed to be strong, credible and competitive in an internationally peer-reviewed AoE program.
Synergy is fostered by establishing research units that provide both support and coordination. Entities such as the Hongkong Telecom Institute of Information Technology, Sino Software Research Institute, Biotechnology Research Institute, Institute for the Environment and Sustainable Development, Centre for Display Research, Transportation Institute, and the Hong Kong Traditional Chinese Medicine Research Centre are showing that collaboration can be effective to stimulate research excellence and to build strengths in areas that are important both for Hong Kong and the world.

2. Relationship between Research Policy and Other Institutional Policies

It is difficult to segregate research and other policies as research is woven into the fabric of the University. Research plays a major role in personnel policies and represents a principal criterion in the appointment, advancement and retention of faculty. It is an integral component of educational programs, not just for Ph.D. and M.Phil students, but also at the undergraduate level. Faculty at the leading edge of their disciplines enrich undergraduate programs, and participation in research by undergraduates is encouraged and opportunities to do so are provided throughout the year.

The timely application of the fruits of research to serve societal needs and to create economic development opportunities is central to the mission of the University. In this regard, HKUST encourages and assists researchers to recognize the value of intellectual property, and the University has a well-established Technology Transfer Centre (TTC) and RandD Corporation to assess, protect, market and commercialize intellectual property with developmental potential. During the year, 21 invention disclosures were received from HKUST faculty, and 14 of these are currently in the process of being filed with the US Patent Office.

3. Organization of Research Funding

Each academic unit has an individual peer review process to assist in the development of research proposals. Draft applications are reviewed by Schools for intellectual merit and by the Office of Contract and Grant Administration (OCGA) for compliance and presentation. Research proposals are finally approved for submission to the appropriate agency and signed by senior administrative officers of the University.

The University also has internal competitions for project funding from the block grant, direct allocation and private gifts. Proposals for such funding are reviewed and adjudicated by the Senate Research Committee for institution-wide funds, or by the Research Committees of the Schools or research units for funds earmarked for such units.

OCGA provides extensive administrative and support services for faculty, both in preparing proposals and in managing the awards and reporting processes.

4. Usage of Direct Allocation Grant

In 1997-98, HKUST received a Direct Allocation Grant from RGC of $8.8
million. In addition, we included the remaining allocation and closed-out project balance from the 1995-98 triennium of $1.4

million. The total funding of $10.2 million was allocated to Schools on a formula basis for allocation by the research committees of these Schools.

In total, the four Schools and other qualifying units at HKUST allocated funding to 177 projects from the Direct Allocation Grant, as follows:

School of Science 28 ($2.1 million)
School of Engineering 39 ($2.5 million)
School of Business & Management 86 ($3.8 million)
School of Humanities & Social Science 21 ($1.6 million)
Others 3 ($0.2 million)

Consistent with the guidelines established by RGC and HKUST's Senate Research Committee, the above resources were committed to assist newly-appointed staff and junior faculty in developing their initial research activities and to support new and on-going research programs for which funding requirements are below the threshold amounts of RGC grants.

In addition, UGC funding in the amount of $1 million was used for Research Travel Grants. This funding was adjudicated on a competitive basis to assist senior postgraduate students and junior faculty to present the results of their research at international conferences.

5. Criteria for Determining Priorities

All academic Departments and Schools and organised research units have well-established processes for determining priorities. Each School has an external advisory board that provides counsel on academic programs and research priorities. Within this framework, each department has a dynamic planning process, which includes strategic recruitment to achieve its largely research-based objectives. Each organised research unit also has its own Advisory Committee or Board with external representation to assist in identifying needs, opportunities and developmental directions.

Internal research funding tends to be used to help junior faculty to achieve their potential, to meet the modest research program needs of some faculty, and to provide seed funding for strategic new initiatives. Excellence or potential for excellence is the dominant criterion in internal funding decisions.

6. Efforts Made to Attract Private Funds

Many of the organised research units at HKUST were established through major gifts made in the early days of the University. Efforts to obtain major gifts for research continue, but recent efforts have been extended to establishing collaborative activities and contract research with the private sector, as well as the involvement in civil and commercial projects. While most of the research funding
at HKUST still comes from RGC/UGC programs, an increasingly significant component is contributed by the private sector in Hong Kong. Industrial funding has risen steadily from $7.6 million in 1993-94 to $23.1 million in 1997-98. This large increase demonstrates both the commitment of HKUST to foster techno-economic development in Hong Kong and the recognition by industry of the value of developing partnerships with researchers at HKUST.

Commercial activities are in their early stages, but in time they can be expected to provide a significant source of funds for research at HKUST. Our Applied Technology Centre (ATC) has been established to play a major role in such work.

7. Opportunities and Difficulties in Inter-Institutional Collaboration

Academics can and do collaborate well, and applications to programs such as the UK/Hong Kong, Germany/Hong Kong and France/Hong Kong joint research schemes show that the availability of resources can stimulate such collaboration.

Collaboration exists at the inter-institutional level and between research groups and individual researchers. We have established partnerships with a number of leading research universities in mainland China and Europe.

Collaboration with our sister institutions in Hong Kong is growing. Under the right circumstances, such collaboration can reduce duplication, foster synergy among institutions and create an atmosphere of mutual help that is highly beneficial to both research and education and that can yield better value to the community from the investment of public resources. When sharing of resources or joint work is mandated or highly encouraged by funding agencies, collaboration can be fruitful, but it also requires careful management to ensure that such linkages are mutually beneficial, productive and sustainable, rather than just opportunistic.

8. Critical Analysis of Research Activities

HKUST is a research university that seeks to undertake research of the highest quality and impact from an international perspective, but in the context of an equally strong commitment to education and application. While these are compatible and synergistic goals, in practice they impose a high work load on faculty and an optimal balance is difficult to achieve. This is especially true in a young institution in which policy formulation, facilities development, and academic management also draw on the time and energies of the predominantly junior faculty.

A major inhibiting factor in building research excellence remains the modest number of Ph.D. students per faculty member. For a science and technology university, this is related to the perceived lack of need and career opportunities in Hong Kong for persons with postgraduate degrees. While any major improvement in this situation would need a significant policy change, for example admitting more students from the Chinese mainland, there are near-term measures that are being taken. These include greater collaboration among faculty
members and a greater reliance on postdoctoral researchers and professional staff.

The excellence and productivity of research at HKUST and the effectiveness with which resources have been utilized should be evident from this annual report.

**Research Units at HKUST**

To support and supplement research based in the academic departments, the University has established a number of research institutes and centres to identify and provide focus for research at HKUST. All operate across traditional disciplinary boundaries and provide a full range of research and specialised research services.

**Research Institutes**

Advanced Manufacturing Institute
Advanced Materials Research Institute
Biotechnology Research Institute
Hainan Institute
Hongkong Telecom Institute of Information Technology
Institute for Environment and Sustainable Development
Institute for Infrastructure Development
Institute for MicroSystems
Institute for Scientific Computation
Sino Software Research Institute
Transportation Institute

**Research Centres**

Advanced Electronic Packaging and Assembly Cooperative Research Centre
Analog Integrated Circuits Past Prototyping Centre
Centre for Asian Financial Markets
Centre for Display Research
Centre for Economic Development
Centre for Energy and Thermal Systems
Centre for Medical Diagnostic Technology
Centre for Wireless Information Technology (CenWIT)
Construction Research Centre
Cyberspace Centre for Software Industry
Central Research Facilities
Advanced Engineering Materials Facility
Animal Care Facility
China Light & Power Wind/Wave Tunnel Facility
Computer Aided Design and Manufacturing Facility
Electrical and Mechanical Services Facility
Geotechnical Centrifuge Facility
Glassblowing Facility
Liquid Helium Facility
Materials Characterisation and Preparation Facility
Microelectronics Fabrication Facility
Plant Growth Facility

Special Achievements at HKUST

Patents Granted

Cai, L. and Zhang, J. "Laser Interferometer System for Straightness Measurements" (Mechanical Engineering)

Hui, D.C.W. "Fluidized-bed Reactor and a Temperature-controlling Method for the Fluidized-bed Reactor" (Chemical Engineering)

Hui, D.C.W. "Method for Controlling Reaction Temperature" (Chemical Engineering)

Hui, D.C.W. "Production Method of 1-Hexene" (Chemical Engineering)

Patent Applications

Cai, L. and Zhou, W. "Positioning Apparatus for Hard Disk Servowriter" (Mechanical Engineering)

Carlier, P. R. and Lo, C.K. "3-Hydroxy-Propanamine Derived Neuronal Reuptake Inhibitors" (Chemistry)
Chan, C.M., Wang, Z. and Shen, J. "Stable Polymer Blends from a Two-Step Crosslinking Science & Technology Process" (Chemical Engineering)

Cue, N. and Lee, C.K. "Free-forming One-way Network" (Physics)

Gao, F. and Zhao, C. "Method and Apparatus for the Control of Injection Molding" (Chemical Engineering)

Goonetilleke, R.S. "Inspection Apparatus and Method" (Industrial Engineering and Engineering Management)

Haynes, R.K. and Lam, W.L. "C-11 Aza-Derivatives of Artemisinin for Treatment of Malaria, Coccidiosis, and Neosporosis" (Chemistry)

Haynes, R.K. and Lam, W.L. "C-10 Ester Derivatives of Artemisinin for Treatment of Malaria, Coccidiosis, and Neosporosis" (Chemistry)


Haynes, R.K. and Lam, W.L. "C-10 Ester Derivatives of Artemisinin for Treatment of Malaria, Coccidiosis, and Neosporosis" (Chemistry)

Haynes, R.K. and Lam, W.L. "C-10 Halogen, Amino and Carbon Substituted Derivatives of Artemisinin for Treatment of Malaria, Coccidiosis, and Neosporosis" (Chemistry)

Haynes, R.K. and Lam, W.L. "Artemisinin Derivatives of Bearing DNA Intercalating and Binding Groups Displaying Anticancer Activity" (Chemistry)

Ko, T.M., Liou, M., Cheung, K.F., Hu, B. and Qu, D. "A Preemphasis Filter System for In-Building Video Distribution Using Category 5 Twisted Pair" (Electrical and Electronic Engineering)

Kwok, H.S. and Tang, S.T. "Method and Apparatus for Measuring Liquid Cell Properties" (Electrical and Electronic Engineering)

Kwok, H.S., Yu, F., Li, Q. and Yip, W.C. "A New Multiplexing Scheme for Bistable Cholesteric Displays" (Electrical and Electronic Engineering)

Lee, R.S.W. and Li, H.L. "A Rotary Motor Driven by Piezoelectric Composite Laminate" (Mechanical Engineering)

Sheng, P., Xiao, R., Wen, W. and Liu, Z. "Composite Materials with Negative Elastic Constants" (Physics)

Sin, J.K.O. and Kumar, A.K.P. "Novel Polysilicon Devices and a Method for Fabrication Therefor" (Electrical and Electronic Engineering)

Tam, W.Y., Wen, W. and Sheng, P. "Electrorheological Fluids and Particles Therefor" (Physics)

Tsang, D.H.K., Bensaou, B. and Chan, K.T. "Packet Scheduling System"
Awards and Prizes


Briley, D. (1997) Wei Lun Fellow, *Hong Kong University of Science and Technology*, Hong Kong University of Science and Technology, August.


Chan, M.H., Lam, Y.T. and Duffy, V.G. (1997) Most Innovative Project Award, *HKIE (Hong Kong Institute of Engineers)*, Hong Kong, January.


Yang, D., Ng, F.-F., Qu, J., Li, B., Wu, Y.-D. and Wang, D.-P. (1997) Best Poster Award, Symposium on Frontiers of Chemistry, Hong Kong, December.

Glossary of Abbreviations

ACCT Accounting Department
ATC Applied Technology Centre
BICH Biochemistry Department
BIOL Biology Department
BRI Biotechnology Research Institute
CCST Centre of Computing Services & Telecommunications
CENG Chemical Engineering Department
CHEM Chemistry Department
CITYU City University of Hong Kong
CIVL Civil & Structural Engineering Department
COMP Computer Science Department
CRC Co-operative Research Centre
CUHK Chinese University of Hong Kong
DAG Direct Allocation Grant
DBM Office of the Dean of Business and Management
DENG Office of the Dean of Engineering
DHSS Office of the Dean of Humanities & Social Science
DSCI Office of the Dean of Science
ECON Economics Department
ELEC Electrical & Electronic Engineering Department
ETC Educational Technology Centre
FINA Finance Department
HKBU Hong Kong Baptist University
HKT IIT Hongkong Telecom Institute of Information Technology
HKU Hong Kong University
HKUST Hong Kong University of Science and Technology
HNI Hainan Institute, HKUST
HUMA Humanities Division
IEEM Industrial Engineering and Engineering Management Department
ISMT Information and Systems Management Department
ITDC Industry and Technology Development Council
JRS UK/HK Joint Research Scheme
LANG Language Centre
MARK Marketing Department
MATH Mathematics Department
MCPF Materials Characterisation & Preparation Facility
MECH Mechanical Engineering Department
MFG Matching Funds Grant
MGTO Management of Organizations Department
MPI Managing Principal Investigator
NSERC Natural Sciences and Engineering Research Council
OCGA Office of Contract & Grant Administration
OP Office of the President
PG Postgraduate student
PHYS Physics Department
PI Principal Investigator
PM Project Manager
POLYU Hong Kong Polytechnic University
RGC Research Grants Council
RI Research Infrastructure Grant
SEPO Safety and Environment Protection Office
SOSC Social Science Division
SSRC Sino Software Research Centre
UCAR University Corporation for Atmospheric Research
UDO University Development Office
UGC University Grants Committee
VPAAO Office of the Vice-President for Academic Affairs
VPRDO Office of the Vice-President for Research and Development
Department of Biochemistry

The Department of Biochemistry conducts a comprehensive research program in both basic and applied aspects of biochemistry. Departmental staff with different specialties and expertise have been and will be recruited to perform research and development in the following areas:

Cellular Biochemistry

Biotechnology and Medicinal Biochemistry

Macromolecular Structure and Protein Design

Faculty working in these areas form a co-ordinated research team. Such co-ordination takes full advantage of the faculty's expertise in generating innovative development and productive research.

Facilities

Both teaching and research laboratories in the Department of Biochemistry are equipped with advanced instruments. The equipment, serving both biochemical and biotechnological studies, includes a protein sequencer, oligonucleotide synthesizer, centrifugal partition chromatograph, plant growth, animal care, and cell culture facilities. There are also microcalorimeters, circular dichroism spectropolarimeter, stopped-flow kinetic apparatus, etc. for biophysical studies of protein folding. The recently installed modern 750 MHz NMR spectrometer marks another great effort of the Department to achieve first class research in structural and functional studies of biomolecules, and protein engineering

Research Profile

JERRY H. WANG
Professor and Department Head

JEFFREY TZE-FEI WONG
Professor

JAMES HACKETT
Associate Professor

ROBERT K. M. KO
Associate Professor

RAYMOND S. C. WONG
Associate Professor

WAN-KEUNG R. WONG
Associate Professor
HUEIH MIN CHEN
Assistant Professor

KING-CHUEN CHOW
Assistant Professor

YI-FAN HAN
Assistant Professor

RANDY YAT CHOI POON
Assistant Professor

FWU-SHAN SHEU
Assistant Professor

HONG XUE
Assistant Professor

MINGJIE ZHANG
Assistant Professor

GUANG ZHU
Assistant Professor
JERRY H. WANG
Professor and Department Head
(2358-7289; jerwang@ust.hk)

PhD, Iowa State University (1965)
Postdoctoral Fellow, National Research Council of Canada (1965-66)
Professor of Biochemistry (1982-94) and Director, MRC Signal Transduction Group (1990-94), University of Calgary

Current Research Activities:
Cellular signal transduction mechanisms; cell proliferation and cancer; cell calcium and second messengers; protein phosphorylations and cellular regulation.

Active Projects as Principal Investigator:
High level production of biologically active recombinant proteins in bacteria (with ZHANG, Mingjie)
ITDC AF/139/96 HK$2,329,000 Jun 1996 - Jun 1999
Neuro-protein: A focus area of biomedical research (with IP, Nancy Y.; TSONG, Tian Yow)
UGC RI94/95.SC04 HK$4,000,000 Sep 1995 - Aug 1999
Structure and function of brain-specific cyclin-dependent protein kinase 5 activator (with LAM, Hing Yat Peter) RGC HKUST561/95M HK$820,000 Dec 1995 - Nov 1998
Regulation of neuronal cdc2-like kinase
CERG HKUST6198/97M HK$1,158,760 Oct 1997 - Sep 2000
A novel protein kinase - T14 kinase
CERG HKUST631/96M HK$952,000 Oct 1996 - Sep 1999
Development and validation of structural models for protein complexes (with ZHOU, Huanxiang and ZHANG, Mingjie)
RIG RI95/96.SC06 HK$1,009,300 Jan 1997 - Dec 1999
Neuro-proteins -- A focused area of biomedical research (with IP, Nancy Y.)
BRI BRI96-I-1 HK$1,700,000 Jan 1996-Dec 1999

Representative Recent Publications:


**JEFFREY TZE-FEI WONG**

*Professor*

(2358-7288; bcjtw@ust.hk)

*PhD, University of Toronto (1963)*

*Research Associate, University of Oregon (1963-65)*

*Professor of Biochemistry, University of Toronto (1976-90)*

**Current Research Activities:**

Coevolution of the genetic code and pathways of amino acid biosynthesis; substrate recognition by aminoacyl-tRNA synthetases; drug delivery technologies.

**Active Projects as Principal Investigator:**

Development of drug delivery systems

ITDC AF/197/97 HK$3,085,000 Sep 1997 - Aug 2000

Structure of tryptophanyl-tRNA synthetase-tRNA(Trp)-indolmycin complexes as basis for antibiotic design (with CARTER, W Charles)

CERG HKUST6191/97M HK$1,109,660 Sep 1997 - Aug 2000

Tissue-specific gene delivery to liver cells

CERG HKUST628/96M HK$952,000 Aug 1996 - Jul 1998

**Representative Recent Publications:**


JAMES HACKETT

*Associate Professor*

(2358-7292; bcjames@ust.hk)

*PhD, University College Dublin (1978)*

*PhD, Australian National University (1979)*

*Research Fellow, University of Adelaide (1980-84)*

*Senior Lecturer, University of Adelaide (1992)*

**Current Research Activities:**

Microbial pathogenesis; vaccine development; plasmid stability mechanisms; fermentation.

**Active Projects as Principal Investigator:**

Controls on the expression and function of the *rfc* gene, which encodes the polymerase assembling the O-antigen coat of *Salmonella* bacteria (with MORRIS, Christina J.)

RGC HKUST556/95M HK$604,000 Sep 1995 - Aug 1998

Characterization of the genes of "pathogenicity islands" in the genome of the typhoid bacillus (with MORRIS, Christina J.)

DAG DAG96/97.SC01 HK$120,000 Sep 1996 - Mar 1999
The characterization of a new pilus-encoding operon from Salmonella typhi


Representative Recent Publications:


ROBERT K. M. KO
Associate Professor
(2358-7298; bcrko@ust.hk)

PhD, University of British Columbia (1990)
Research Associate, Chinese University of Hong Kong (1990-91)

Current Research Activities:
Free radical-related mechanisms in tissue injuries; protection against such injuries by antioxidants; antioxidant properties of traditional Chinese medicinals in relation to their anti-aging activities.

Representative Recent Publications:


**RAYMOND S. C. WONG**

Associate Professor

(2358-7271; bcrayw@ust.hk)

PhD, South Dakota State University (1975)

Postdoctoral Fellow, University of Toronto (1975-77)

Research Associate, University of Toronto (1978-82)

Chief Biochemist, Allelix Crop Technologies (1988-90)

**Current Research Activities:**

Plant biotechnology; oilseed Brassica and vegetable Brassica; oilseed storage lipid biosynthesis; food biochemistry and related research.

**Active Projects as Principal Investigator:**

Bioinsecticide: Transformation of brassica vegetables with a recombinant construct comprising the Bacillus Thuringiensis (B.t.) toxin gene (with WONG, Wan Keung)

BRI 96-III-4 HK$382,000 Sep 1996 - Aug 1997

Random amplified polymorphic DNA analysis of Brassica parachinensis and B. alboglabra (with CARLSON, J.E.) RGC HKUST559/95M HK$310,000 Nov 1995 - Oct 1998

**Representative Recent Publications:**


WAN-KEUNG R. WONG

Associate Professor

(2358-7299; bcwkrw@ust.hk)

*PhD, University of British Columbia (1986)*

*Postdoctoral Fellow, Allelix Biochemicals Inc. (1986-87)*

*Project Leader, Allelix Biopharmaceuticals Inc. (1988-90)*

**Current Research Activities:**

Bacterial genetics; cloning and expression of genes in *E. coli, Bacillus subtilis* and *Saccharomyces cerevisiae*; excretion of proteins from *E. coli*; development of *E. coli* systems for extracellular production of valuable proteins; production and reconstitution of recombinant cellulases for use in energy production and cellulosic waste management.

**Active Projects as Principal Investigator:**

Development of an effective process for large-scale production of recombinant human epidermal growth factor (with HACKETT, James A.; WONG, Raymond S. C.)

ITDC AF/135/96 HK$2,034,700 May 1996 - Nov 1998

Study of the lethal effect of extracellular production of a *Cellulomonas fimi* exoglucanase on *Escherichia coli* (with MA, Co Michael)

CERG HKUST639/96M HK$692,000 Oct 1996 - Sep 1999

**Representative Recent Publications:**

epidermal growth factor (hEGF) by an efficient recombinant Escherichia coli system",

*Process Biochem.*


**HUEIH MIN CHEN**

*Assistant Professor*

(2358-7294; bchmc@ust.hk)

**DSc, University of Texas, Arlington (1988)**

**Postdoctoral Associate, University of Minnesota (1989-92)**

**Research Fellow II, Beckman Research Institute of the City of Hope (1993)**

**Current Research Activities:**

Construction of anti-bacterial/anti-cancer peptides; mode of actions of the peptides on lipid bilayers; protein folding; protein chemistry.

**Active Projects as Principal Investigator:**

Conversion of trichosanthin, an anti-viral and abortifacient, to human acceptable protein (with CHEN, Zhang Liang) CPDG CPDG94/95.SC21 HK$11,000 Sep 1995 - Aug 1996

Designs for high potency anti-cancer/anti-bacteria peptides (with ZHU, Guang)

UGC DAG96/97.SC02 HK$80,000 Nov 1996 - Mar 1998

Searching local stable segments of a protein to build its three dimensional frame

DAG DAG97/98.SC01 HK$62,430 Apr 1998 - Mar 1999

**Representative Recent Publications:**


KING-CHUEN CHOW

Assistant Professor

(2358-7273; bckchow@ust.hk)

PhD, University of Toronto (1989)

Postdoctoral Fellow, Carnegie Institution of Washington (1988-92)

Current Research Activities:

Stress response of organisms; improvement of stress tolerance of plant strains by genetic engineering; molecular biology and biochemistry of seed germination; mechanism of seed priming; development of gene overexpression systems for plants.

Active Projects as Principal Investigator:

Construction of a plant gene overexpression system

RGC DAG95/96.SC01 HK$80,000 Nov 1995 - Oct 1996

Isolation and characterization of the cDNAs that encode antifreeze proteins of winter rye

DAG DAG97/98.SC02 HK$73,780 Feb 1998 - Jan 1999

Representative Recent Publications:

253:502-505.


**Chow, K.C. and Tung, W.L.** (in press) "Electrotransformation of *Chlorella vulgaris*, *Plant Cell Reports*.


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**YI-FAN HAN**

Assistant Professor

(2358-7293; bcyfhan@ust.hk)

*PhD, Medical College of Ohio (1991)*

*Research Fellow, National Institutes of Health (1991-94)*

*Visiting Scientist, Hoechst AG (1985-86)*

**Current Research Activities:**

Biochemical and pharmacologic research and development of memory enhancers and analgesics, including those from Chinese medicinal herbs; protein phosphorylation and dephosphorylation in neuronal functions.

**Active Projects as Principal Investigator:**

Characterization of memory-enhancing effects and molecular mechanisms of bis-tacrine, a novel and highly potent inhibitor of acetylcholinesterase

DAG DAG96/97.SC25 HK$68,100 Jan 1997 - Jun 1999

**Representative Recent Publications:**


**RANDY YAT CHOI POON**

Assistant Professor

(2358-8703; bcrandy@ust.hk)

*PhD, Cambridge University (1994)*

*Postdoctoral Fellow, The Salk Institute (1994-96)*

**Current Research Activities:**

Molecular basis of cell cycle control in normal and cancer cells.

**Active Projects as Principal Investigator:**

- Cell cycle control in normal and cancer cells
  - RGC DAG96/97.SC26 HK$100,000 Jan 1997 - Jun 1998
  - Regulation of cyclin-dependent kinases after DNA damage
  - Dan Charitable Trust Fund £D450,000 Apr 1997 - Apr 1999

- Cell cycle control in normal and cancer cells
  - DAG DAG96/97.SC26 HK$100,000 Jan 1997 - Dec 1998
  - Penetration of mammalian cell membranes with peptides
  - DAG DAG97/98.SC03 HK$68,106 Jan 1998 - Jan 1999

- The molecular biology of cell cycle control in normal and cancer cells
  - CERG HKUST6188/97M HK$686,880 Aug 1997 - Jul 1999

- Identification and cloning of novel cyclin A-interacting proteins (with HUNT, Tim)
Representative Recent Publications:


**FWU-SHAN SHEU**

*Assistant Professor*

(2358-7295; bcsheu@ust.hk)

*PhD, Northwestern University (1991)*

*Fogarty Visiting Fellow, National Institute of Child Health and Human Development (1991-94)*

**Current Research Activities:**

Biochemistry, molecular biology and electrophysiology of neural plasticity, signal transduction and information storage.

**Active Projects as Principal Investigator:**

Biochemical and biophysical characterization of a neuron specific protein kinase C substrate, neurogranin, upon oxidation by novel messenger molecule nitric oxide (with CHEN, Hueih)

RGC DAG96/97.SC03 HK$120,000 Sep 1996 - Sep 1997

Structure study of neuron specific protein kinase C substrate, neurogranin, by multidimensional nuclear magnetic resonance (with ZHU, Guang)

RGC DAG95/96.SC02 HK$80,000 Oct 1995 - Oct 1996

A pilot study of neural targets for nitric oxide: Neurogranin and soluble guanylate cyclase
Detection of nitric oxide modification of recombinant neurogranin by redox sensitive microelectrode

DAG DAG97/98.SC04 HK$62,430 Feb 1998 - Jan 1999

Representative Recent Publications:


HONG XUE
Assistant Professor
(2358-8707; hxue@ust.hk)

PhD, University of Toronto (1993)
Postdoctoral Fellow, University of Glasgow (1993-95)

Current Research Activities:

Structure and function of neuroreceptors; identity elements of transfer RNA.

Active Projects as Principal Investigator:

Receptor-based technologies for drug discovery & design (with WONG, Jeffrey T. F.; ZHU, Guang; TSIM, Karl W. K.)

ITDC AF/140/96 HK$4,645,000 Jun 1996 - May 1999
Expression of the extracellular domain of GABAα receptor for structural study

RGC DAG95/96.SC03 HK$80,000 Nov 1995 - May 1997

Molecular basis for therapeutic modulation of learning and memory & The Molecular Neuroscience Center (MNC) (with WANG, Jerry H C)

AOE AOE97/98.SC06 HK$390,520 Apr 1998 - Apr 1999

Analysis of bacillus subtilis tryptophanyl tRNA synthetase interactions with the transfer RNA for tryptophan by NMR (with ZHU, Guang)

CERG HKUST6192/97M HK$1,478,040 Jan 1998 - Dec 2000

Dismantling Alzheimer's tangles through nck5a gene targeting in mice (with WANG, Jerry H C; HAN, Yifan)

CERG HKUST630/96M HK$692,000 Jan 1997 - Dec 1999

GABA_A receptor assembly: An electron microscopical analysis (with HOLZENBURG, Kurt and Hans Andreas)

JRS JRS96/32 HK$76,866 Jan 1997 - Dec 1998

Representative Recent Publications:


MINGJIE ZHANG

Assistant Professor

(2358-8709; mzhang@ust.hk)

PhD, University of Calgary (1993)

Postdoctoral Fellow, University of Calgary (1993-94)
Postdoctoral Fellow, Ontario Cancer Institute, University of Toronto (1994-95)

Current Research Activities:
Multidimensional nuclear magnetic resonance; protein structure and function; signal transduction.

Active Projects as Principal Investigator:
Multidimensional NMR studies of neuronal cdc2-like protein kinase
RGC HKUST558/95M HK$531,000 Jan 1996 - Dec 1998
Molecular bases of CDK inhibition by p15 and p16: A multidimensional nuclear magnetic resonance study
RGC DAG96/97.SC04 HK$120,000 Oct 1996 - Mar 1998
Structural determination and functional characterization of ALG-2: a novel calcium-binding protein directly involved in apoptosis
CERG HKUST6189/97M HK$1,454,940 Sep 1997 - Aug 2000

Representative Recent Publications:


HUAN-XIANG ZHOU
Assistant Professor

PhD, Drexel University (1988)
Visiting Fellow, Laboratory of Chemical Physics, National Institutes of Health (1988-90)

Visiting Associate, Laboratory of Chemical Physics, National Institutes of Health (1990-95)

Current Research Activities:

Computer modeling of the structure and function of proteins; theory and simulation of electrostatic and diffusional effects in protein-ligand binding; hydrodynamic properties of macromolecules.

Active Projects as Principal Investigator:

Hydrodynamics of globular proteins
RGC HKUST638/96M HK$1,076,000 Sep 1996 - Aug 1999

Development and validation of structural models for protein complexes (with WANG, Jerry H. C.; ZHANG, Mingjie)
UGC RI95/96.SC06 HK$600,000 Jan 1997 - Dec 1997

Role of electrostatic interactions in the structure and function of proteins
RGC HKUST560/95M HK$635,000 Nov 1995 - Oct 1998

Representative Recent Publications:


GUANG ZHU
Assistant Professor
(2358-8705; gzhu@ust.hk)

PhD, University of Maryland, College Park (1992)
Postdoctoral Fellow, Laboratory of Chemical Physics, National Institutes of Health
(1992-93)

Research Associate, Dept of Electrical Engineering, University of Maryland, College Park
(1993-94)

Current Research Activities:
Application and development of multidimensional nuclear magnetic resonance techniques for structure and function study of biomacromolecules.

Active Projects as Principal Investigator:
Development and application of multidimensional NMR signal processing procedures and experimental methods for structure determination of macrobiomolecules RGC HKUST563/95M HK$538,000 Aug 1995 - Nov 1998
Structure and function analysis of the CO2 activated 1-aminocyclopropane-1-carboxylate oxidase (with LI, Ning)
UGC RI95/96.SC08 HK$550,000 Nov 1996 - Nov 1997
Multidimensional NMR analysis of transfer RNA for tryptophan (with HUANG, Tai Huang; WONG, Jeffrey T F)
CERG HKUST6197/97M HK$1,131,130 Oct 1997 - Sep 2000

Representative Recent Publications:


Department of Biology

The faculty in the Department of Biology are committed to creative scholarly research. The major foci of departmental research interests are:

**Molecular Biology**: gene regulation; molecular biology of plant organelles; tumor virology; molecular basis of carcinogenesis; gene therapy; phytohormone biosynthesis and action; plant senescence; molecular biology of stress response in algae.

**Cell and Developmental Biology**: cell signaling; receptors and signal transduction; cell division, differentiation, transformation, and death; membrane biophysics; molecular neurobiology; growth factors; neural regeneration; neurotransmitter receptors.

**Marine/Environmental Biology**: harmful algal blooms; larval ecology; marine fouling and antifouling; marine and estuarine pollution; marine population dynamics; environmental decontamination.

**Biotechnology**: gene transfer; immuno-diagnostics; cancer drug development; bioproduction of natural products.

The first two areas encompass molecular genetics, developmental biology, microbiology, molecular pharmacology and immunology, and genetic engineering in plants and animals. The Department focuses on a few key areas and emphasizes co-operative efforts with other research groups. One of the focus areas is the delineation of the signaling mechanisms of cell fate regulation at subcellular and molecular levels. In addition, molecular approaches are emphasized to study many important aspects of neurobiology, including neuronal differentiation, neural regeneration and structure of neurotransmitter receptors. The plant physiology and molecular biology areas focus on research with great potential for technological applications in the coming decades. The fundamental molecular, cellular and genetic basis of tumor development and the applied aspects of identification of tumor markers and cancer therapy are areas of focus in cancer research.

The marine biology and environmental biology cover molecular and organismic studies of toxic red tide algae and bacteria and other marine organisms. Modern techniques in environmental and biological monitoring, ecotoxicology, remote sensing (satellite), biotechnology and mathematical modeling are used in these studies. Special attention is directed towards improving the quality of coastal and marine environments of Hong Kong and the utilization of natural resources in these environments. The Department is in collaboration with the University's Institute of Environmental and Sustainable Development and Center for Coastal and Atmospheric Research in this area of development. The Department is also administering a well-received MSc Program in Environmental Science.

Research in biotechnology is an integral part of the activity of the University's Biotechnology Research Institute.

**FACILITIES**

The Department of Biology is equipped with modern research facilities for most areas of biological studies. Besides the central facilities for Animal Care and Plant Growth (greenhouse), the following facilities are available in the Department:
Cell Culture: For the cultivation, maintenance, characterization and cold storage of animal and plant cells as well as for production of monoclonal antibodies.

Molecular and Cellular Biology: Major equipment includes fluorescence-activated cell sorter, amino acid analyzer, automatic DNA sequencer, oligonucleotide synthesizer, PCR machines, ultracentrifuges, spectrophotometers and spectrofluorimeters, atomic absorption, mass spectrometer, HPLC and FPLC, gamma and liquid scintillation counters.

Modern Microscopy: The Department is equipped with state-of-art optical microscopy systems including fluorescence microscope, confocal laser microscope, computer-enhanced video microscope, intensified CCD detector with image processor, ratio-imaging microscope. The Department also has a transmission electron microscope, and two scanning electron microscopes are already available in the University. The Department is trying to develop the most advanced microscopy facilities for biological research in this part of Asia.

Marine/Environmental Biology: The University is bordered by an extensive shoreline of various habitats (rocky, sandy, cobbled, and a well-functioning pier), providing a favourable condition for developing a strong marine and coastal science program. Facilities available include a 17-feet outboard motor boat for near-shore operations, a wet laboratory of circulating sea water, and various environmental chambers and reactors for bioproduction studies. These facilities are due to expand in anticipation of the completion of a new, enlarged marine research laboratory at the waterfront in the near future.

Research Profile

DENNIS P. H. HSIEH
Professor and Department Head

DONALD C. CHANG
Professor

SHAIN-DOW KUNG
Professor and Advisor to the President

NANCY YUK-YU IP
Professor, Associate Dean of Science, and Director of Biotechnology Research Institute

MARIA LI LUNG
Professor

MADELINE C. S. WU
Professor

I-HSUN NI
Senior Lecturer
ALBERT C. H. YU

Assistant Professor
DENNIS P. H. HSIEH

Professor and Department Head
(2358-7302; dphsieh@ust.hk)

ScD, Massachusetts Institute of Technology (1969)

Professor of Environmental Toxicology (1980-94) and Dept Chairman (1983-88), University of California, Davis.

Current Research Activities:

Thrombopoietin and its receptor: molecular cloning, purification, and characterization; comparative and interactive toxicology of Chinese medicinal herbs.

Active Projects as Principal Investigator:

Comparative and interactive toxicity of the herb mahuang (Ephedra Sinica)

Development of novel non-toxic antifoulants and Human interactions with the coastal environment: Improving basic knowledge and strategies for utilizing the marine resources of Hong Kong and the region (with CHEN, Jay Chung)

AOE AOE97/98.SC02 HK$390,520 Apr 1998 - Jun 1999

Comparative toxicology of ephedrine alkaloids in Chinese medicinal herbs

DAG DAG97/98.SC06 HK$79,456 Jan 1998 - Dec 1998

Representative Recent Publications:


DONALD C. CHANG

Professor
(2358-7326; bochang@ust.hk)

PhD, Rice University (1970)

Welch Fellow, Baylor College of Medicine (1970-73)

Assoc Professor, Baylor College of Medicine (1985-91)

Summer Investigator, Marine Biological Laboratory at Woods Hole (1976-91)

Current Research Activities:
Molecular biophysics; calcium signaling; in vivo signal transduction; mechanisms of cell division; gene transfer and cell fusion using an electric field.

Active Projects as Principal Investigator:
Calcium signaling in cell cycle regulation
RGC HKUST572/95M HK$824,000 Jan 1996 - Dec 1999
The roles of calcium signal in regulating nuclear envelope assembly and disassembly (with ZHAI, Zhonghe)
CPDG CPDG94/95.SC23 HK$12,000 Aug 1995 - Jul 1997
Molecular signaling in cell fate determination (with LUNG, Maria LI)
Study of in vivo signal transduction: Pathways linking Ca(2+) signal with cell division
CERG HKUST6199/97M HK$1,399,480 Oct 1997 - Sep 2000

Representative Recent Publications:


NANCY YUK-YU IP

Professor, Associate Dean of Science, and Director of Biotechnology Research Institute

(2358-7304; boip@ust.hk)

PhD, Harvard Medical School (1983)

Postdoctoral Fellow, Harvard Medical School (1983-84)

Postdoctoral Fellow, Sloan Kettering Institute (1984-85)

Laboratory Head, Medical Genetics, Lifecodes Corporation (1987-89)

Senior Staff Scientist, Regeneron Pharmaceuticals (1989-93)

Current Research Activities:

Developmental and molecular neurobiology; neurotrophic factors and their receptors; neuronal differentiation; synapse formation and neural regeneration.

Active Projects as Principal Investigator:

Probing the functional roles of the neurotrophic factors in the formation of "innervation zone" in developing and regenerating neuromuscular junction (with TSIM, Karl W. K.)

RGC HKUST568/95M HK$985,000 Aug 1995 - Aug 1998

Identification of novel factors and receptors for the family of ciliary neurotrophic factor

BRI 96-I-4 HK$555,500 Sep 1996 - Aug 1997

Innovative technology to develop human cell lines for biomedical applications and biopharmaceutical production (with LEUNG, Mun Fai)

ITDC AF/142/96 HK$1,788,000 Jul 1996 - Jun 1999

The establishment of a BRI traditional Chinese medicine centre: Drug development, safety, standardization and reformulation (with WONG, Jeffrey T F, WONG, Yung Hou, CHE, Chun Tao, WANG, Jerry H C)
ITDC AF/178/97 HK$13,570,000 Aug 1997 - Jul 2000

Biotechnology Research Institute - Traditional Chinese Medicine Center (with KUNG, Shain-Dow)

AOE AOE97/98.SC03 HK$125,000 Apr 1998 - Jun 2001

**Representative Recent Publications:**


**SHAIN-DOW KUNG**

*Professor and Advisor to the President*

*PhD, University of Toronto (1968)*

*Research Fellow, Hospital for Sick Children, Toronto (1968-70)*

*Research Cell Biologist/Biochemist, University of California, Los Angeles (1971-74)*

*Assoc Dean, University of Maryland Baltimore County (1984-86)*

*Acting Provost (1989-91) and Director, Center for Agricultural Biotechnology (1986-93), Maryland Biotechnology Institute, University of Maryland*

*Dean of Science (1991-92) and Vice Present for Academic Affairs (1992-98)*

**Current Research Activities:**

Molecular evolution of chloroplast genomes; structure and function of Rubisco; molecular mechanism of genetic tumors; analysis of regulatory sequences of UV-B radiation inducible genes.
Active Projects as Principal Investigator:

The establishment of a BRI Traditional Chinese Medicine Center (with IP, Nancy Y.)
BRI 97-I-1 HK$622,659 Jan 1998 - Dec 1998
6th Pacific Rim Biotechnology Conference and Bioexpo’98 - Biotechnology and Quality of Life (with IP, Nancy Y Y and WONG, Wan Keung)
ITDC AF/201/97 HK$779,500 Apr 1997 - Oct 1998

Representative Recent Publications:


MARIA LI LUNG

Professor
(2358-7307; bomaria@ust.hk)

PhD, Stanford University (1978)
NIH Postdoctoral Fellow, Massachusetts Institute of Technology (1978-80)
Lecturer, University of Hong Kong (1980-91)

Current Research Activities:
Molecular oncology; molecular virology; epidemiology of cancer; environmental microbiology.

Active Projects as Principal Investigator:
A molecular and clinical investigation of colorectal carcinomas in Hong Kong patients (with WONG, Chow Ming; TANG, Man Ching Cecilia; CHEUNG, Ho Yin Michael; LAU, Kwok Wai)
Total viable counts and Legionella testing at MTR cooling towers

Functional studies of p53, a critical gene for cancer development and a frequent target of mutations in Hong Kong carcinomas

Functional analysis of the role of tumor suppressor genes in nasopharyngeal carcinomas (with STANBRIDGE, Eric)

Representative Recent Publications:


**MADELINE C. S. WU**

*Professor*

(2358-7301; bomwu@ust.hk)

*PhD, University of Texas, Austin (1966)*

*Research Fellow, California Institute of Technology (1969-72)*

*Professor of Biology, University of Maryland (1981-92)*

**Current Research Activities:**

*in situ* hybridization; DNA replication; algal biotechnology; production of secondary
metalolites in plant tissue culture; stress responses.

Active Projects as Principal Investigator:

Expression of heterologous genes in the marine macroalga, *gracilaria tenuistipitata*
BRI 96-III-1 HK$260,000 Aug 1996 - Aug 1997

Study on genome heterogeneity among Chinese ethnic populations (with KUNG, Shain-Dow)
CHGS LANL96/97.SC01 HK$889,310 Jul 1996 - Sep 1997

Development of an expression-secretion system for the antibacterial peptide, cecropin A, in *Chlamydomonas reinhardtii* (with SHEN, Da Leng)
CERG HKUST654/96M HK$692,000 Jan 1997 - Dec 1999

 Representative Recent Publications:


I-HSUN NI

_Senior Lecturer_

(2358-7305; bonith@ust.hk)

PhD, University of British Columbia (1978)

_Research Scientist (1978-90) and Section Head (1985-90), Northwest Atlantic Fisheries Centre, Canadian Department of Fisheries and Oceans_

Current Research Activities:

Fisheries biology and management; aquaculture; marine environmental impact assessment by satellite remote sensing; comparative population dynamics of marine animals.
Active Projects as Principal Investigator:

Remote sensing of ocean color and ground truth screening of phytoplanktons and nutrients for the assessment of the marine environment in Hong Kong (with CHAN, D. K. O.)

RGC HKUST573/95M HK$310,000 Sep 1995 - Feb 1998

Study on the suitability of shelter island area to be established as Marine Park or Marine Reserve (with QIAN, P.Y.)

AFD AFD97/98.SC01 HK$230,000 Dec 1997 - Jan 1999

Representative Recent Publications:


**PEI-YUAN QIAN**

Associate Professor

(2358-7331; boqianpy@ust.hk)

PhD, *University of Alberta* (1991)

*Killam Postdoctoral Fellow, University of British Columbia* (1992)

Current Research Activities:

Larval ecology; anti-fouling; ecotoxicology; marine aquaculture; benthic ecology; marine natural products.

Active Projects as Principal Investigator:
Ocean science
UGC TOO96/97.SC01 HK$200,000 Jan 1997 - Jun 1997
Seabed benthic ecology studies
ERM ERM95/96.SC01 HK$1,399,300 May 1996 - Jul 1998
Non-polluting antifouling test programme
MFG MFG95/96.SC01 HK$193,500 Jan 1996 - Jan 1999
Marine biofouling community and its control in a continuous flow seawater pipe system
(with VRIJMOED KWAN; LEE, Ping Lilian; GHIDAOUI, Mohamed S. B. H.)
UGC RI95/96.SC02 HK$700,000 Apr 1996 - Apr 1998
The impact of reproductive effort and early post-settlement mortality on population
dynamics of three marine biofouling species
RGC HKUST574/95M HK$531,000 Oct 1995 - Mar 1998
Comparative Biological Effects-based Testing of Hong Kong Sediment
CED CED97/98.SC01 HK$300,000 Sep 1997 - Dec 1999
A pioneering study of integrated mariculture in Hong Kong: Simultaneous cultivation of
commercial species of seaweed, shellfish & fish to improve seawater quality & maximize the
yield of fish farms (with WU, Madeline C S)
ECWW ECWW95/96.SC02 HK$1,092,800 Jan 1997 - Dec 1998
Environmental monitoring and audit for contaminated mud at east of Sha Chau
ERM ERM97/98.SC01 HK$1,296,000 Jan 1998 - Jun 2000
Marine biofouling community and its control in a continuous flow seawater pipe system
HKECL HKECL96/97.SC01 HK$100,000 Jul 1997 - Jul 1999
Isolation and identification of natural antifouling compounds from marine bacteria,
seaweeds, and invertebrates from Hong Kong waters (with RITTSCHOF, Daniel)
CERG HKUST651/96M HK$692,000 Dec 1996 - Nov 1999

Representative Recent Publications:

Gosselin, L.A. and Qian, P.Y. (1997) "Can bacterivory alone sustain larval development in


Lau, K.K. and Qian, P.Y. (1997) "Phlorotannins and their analogs as larval settlement


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**KARL W. K. TSIM**

*Associate Professor*

(2358-7332; botsim@ust.hk)

*PhD, University of Cambridge (1987)*

*Research Fellow, Stanford University (1988-92)*

**Current Research Activities:**

Molecular neurobiology of synaptogenesis.

**Active Projects as Principal Investigator:**

Molecular mechanisms that underlie the formation of synapse in the central nervous system (with KROGER, Stephan)

G-HK G-HK96/97.SC05 HK$20,000 Mar 1997 - Feb 1998

A novel screening method for agonist/antagonist of opioid receptor-like 1(ORL-1) receptor: A specific type of orphan receptor (with WONG, Y.H.)

BRI 96-I-3 HK$235,000 Sep 1996 - Aug 1997

Anti-sense approach to probe the novel functions of agrin during synaptogenesis (with SMITH, A. Martin)

CERG HKUST6185/97M HK$978,000 Sep 1997 - Aug 2000

**Representative Recent Publications:**


YUNG HOY WONG

Associate Professor

(2358-7328; boyung@ust.hk)

PhD, University of Cambridge (1988)

Postdoctoral Fellow, University of California, San Francisco (1989-92)

Current Research Activities:

Receptor pharmacology; signal transduction; drug screening; neuropeptides; tumor biology.

Active Projects as Principal Investigator:

Molecular basis of opiate addiction: desensitization of opioid receptor subtypes

A novel screening method for agonist/antagonist of opioid receptor-like 1 (ORL-1) receptor: A specific type of orphan receptor (with Tsim, K.W.K.)
BRI BRI-96-I-3 HK$235,000 Aug 1996 _ July 1997

Signal transduction mechanisms of the ORL1 receptor, a novel G protein-coupled receptor involved in pain perception
CERG HKUST6176/97M HK$718,680 Oct 1997 - Sep 1999

Oncogenic mechanisms of G protein-coupled receptors: Integration with the MAP kinase pathway through P13K and receptor tyrosine kinase. (with Bourne, Henry R)
CERG HKUST653/96M HK$952,000 Dec 1996 - Aug 1999

Representative Recent Publications:


DAVID BANFIELD

Assistant Professor

(2358-8633; bodkb@ust.hk)

PhD, University of British Columbia (1991)
Postdoctoral Fellow, MRC Laboratory of Molecular Biology, Cambridge (1992-95)

Current Research Activities:
Intracellular protein trafficking and secretory organelle maintenance.

Active Projects as Principal Investigator:
Genetic analysis of homotypic fusion in the budding yeast saccharomyces cerevisiae
The characterization of Sft1p and Sft2p, two Golgi localized integral membrane proteins that show genetic interactions with Sed5p, the t-SNARE for ER-Golgi traffic.
CERG HKUST646/96M HK$1,060,000 Oct 1996 - Sep 1999

Representative Recent Publications:


KING-LAU CHOW
Assistant Professor
(2358-7342; bokchow@ust.hk)

PhD, Baylor College of Medicine (1990)
Research Associate, Albert Einstein College of Medicine (1990-94)

Current Research Activities:
Pattern formation of animal development; sensory organ differentiation; tissue remodeling in development.

Active Projects as Principal Investigator:
Molecular characterization of mab-21, a Hom-C gene modifier essential for neural patterning along the anteroposterior axis in a free-living nematode, Caenorhabditis elegans
RGC HKUST570/95M HK$697,000 Sep 1995 - Aug 1998
Characterization of genes associated with genetic diseases
AD AD96/97.SC01 HK$50,000 Jul 1996 - Jan 1997
Characterization of the expression of mab-21 gene homologs in vertebrate development
CERG HKUST6180/97M HK$686,880 Dec 1997 - Dec 1999
Characterization of the neural cell adhesion molecule (N-CAM) gene and its role in C. elegans development
CERG HKUST647/96M HK$692,000 Dec 1996 - Dec 1999

Representative Recent Publications:

East Coast Caenorhabditis elegans meeting, Boston University, Boston, Massachusetts, USA, Jun 5 - 7.


WEN-LUAN WENDY HSIAO

Assistant Professor
(2358-7341; bowhsiao@ust.hk)

PhD, Columbia University (1985)
Postdoctoral Research Fellow, Columbia University (1985-88)
Research Biochemist, University of California, Irvine (1988-93)

Current Research Activities:
Molecular tumor biology; oncogenes and tumor suppressor genes; gene regulation and signal transduction.

Active Projects as Principal Investigator:
Identification of cellular trans-acting factor(s) related to the early onset carcinogenesis
RIG DAG96/97.SC09 HK$120,000 Dec 1996 - Nov 1999

Studying apoptosis, cell cycle progression and cell transformation in Rat 6 fibroblasts over-expressing myc gene
DAG DAG97/98.SC05 HK$73,780 Mar 1998 - Feb 1999

Assessment and study of the anti-cancer effect of mushroom extract in an Epstein Barr Virus (EBV) positive lymphoma model (with HAMMERSCHMIDT, Wolfgang and UEFFING, Marius)
G-HK G-HK97/98.SC01 HK$25,000 Apr 1998 - Mar 1999

Representative Recent Publications:


KEVIN LEE
Assistant Professor
(2358-8636; bokaw@ust.hk)

PhD, McGill University (1985)
Jane Coffin Childs Postdoctoral Fellow, Harvard University (1985-88)
Research Scientist, Imperial Cancer Research Fund, UK (1988-95)

Current Research Activities:
Mammalian transcription factors; DNA-binding proteins; nucleic acid-protein interactions; Ewings sarcoma oncogene.

Active Projects as Principal Investigator:
Detection of novel proteins that interact with the cellular transcription factor ATF1
RGC DAG95/96.SC04 HK$80,000 Jan 1996 - Sep 1996
Transcriptional regulation and transformation by the cellular oncogene EWS/ATFI
CERG HKUST645/96M HK$952,000 Sep 1996 - Dec 1998

Representative Recent Publications:


NING LI

Assistant Professor

(2358-7335; boningli@ust.hk)

PhD, University of Washington (1989)

Postdoctoral Fellow, University of Washington (1989)

Research Associate, USDA/ARS/PSI Plant Molecular Biology Laboratory (1989-93)

Current Research Activities:

Ethylene signal transduction; genetic engineering of fruit, flowers and seaweed; natural products.

Active Projects as Principal Investigator:

Repression of the basal level ethylene production and overexpression of cytokinin in the leaves of brassica vegetables via genetic engineering (with KUNG, Shain-Dow; YANG, Shang-fa)

BRI 96-III-3 HK$315,000 Sep 1996 - Aug 1997

Structure and function analysis of the CO2 activated 1-aminocyclopropane-1-carboxylic oxidase (with Zhu, Guang)

RIG RI95-96.SC08 HK$550,000 Sep 1996 _ Sep 1997

Structure and function relationship of ACC synthase (with YANG, Shang-fa; KUNG, Shain-Dow)

CERG HKUST649/96M HK$531,000 Sep 1996 - Feb 1999

Representative Recent Publications:


ANDREW L. MILLER

Assistant Professor

(2358-8631; almiller@ust.hk)

PhD, University of Dundee (1986)

Postdoctoral Fellow, University of Aberdeen (1985-88)

Research Associate, Marine Biological Laboratory, Woods Hole (1988-91)

Principal Investigator, Marine Biological Laboratory, Woods Hole (1992-95)

Current Research Activities:

Investigating calcium signaling during early development using calcium-sensitive bioluminescent proteins and zebrafish as a biological model; design and development of luminescent-based calcium imaging techniques; the generation of transgenic model systems for visualising calcium ions during normal development and function.

Active Projects as Principal Investigator:

Development of zebrafish expressing the jellyfish apoaequorin gene (with BAKER, Robert; HANLON, Roger; DRIEVER, Wolfgang)

RGC DAG95/96.SC05 HK$60,000 Jan 1996 - Oct 1996

A study of the role of slow waves in pattern formation and cytokinesis (with HO, E Sarah)

DAG DAG97/98.SC09 HK$64,700 Jan 1998 - Jan 1999
A study of the role of slow waves in pattern formation and cytokinesis (with GALIONE, Antony)

CERG HKUST650/96M HK$1,149,000 Sep 1996 - Aug 1999

Representative Recent Publications:


CHRISTOPHER ROCK
Assistant Professor
(2358-8634; borock@ust.hk)

PhD, Michigan State University (1991)
Visiting Research Associate, MSU-DOE Plant Research Laboratory (1991)
NIH Postdoctoral Fellow, Dept of Biology, University of North Carolina (1992-95)

Visiting Faculty Instructor, Dept of Biology, University of North Carolina (1993)

Current Research Activities:

Molecular genetics of plant growth and development; plant hormone signal transduction; role of abscisic acid in plant stress adaptation.

Active Projects as Principal Investigator:

Genetic analysis of abscisic acid and water stress responses in Arabidopsis thaliana
RGC DAG95/96.SC06 HK$80,000 Nov 1995 - Dec 1997
Genetic analysis of abscisic acid and water stress responses in Arabidopsis thaliana
RIG DAG96/97.SC06 HK$120,000 Jun 1997 - Dec 1998
Cellular mechanisms of abscisic acid signal transduction
CERG HKUST6173/97M HK$500,000 Jul 1997 - Jul 1999
Characterization and functional analysis of rice antigens involved in abscisic acid (ABA) signal transduction. (with NEILL, Steven John)
JRS JRS96/33 HK$75,040 Jan 1997 - Dec 1998

Representative Recent Publications:


Hagenbeek, D., Sheen, J., Quatranro, R.S. and Rock, C.D. (1997) "Funtional interaction of VP1, abi1, and abscisic acid in transiently transformed rice protoplasts", 5th International Society of Plant Molecular Biologist's Congress, International Society of Plant Molecular
NIKOLAUS J. SUCHER
Assistant Professor
(2358-7306; sucher@ust.hk)

Dr. med., Free University of Berlin (1988)
Assistant in Psychiatry, Klinikum Rudolf Virchow, Free University of Berlin (1987-88)
Research Fellow in Neurology, Children's Hospital, Boston (1988-91)
Asst Professor of Neurology, Harvard Medical School (1994-96)
Research Associate in Neurology, Children's Hospital, Boston (1991-96).

Current Research Activities:
Structure, function and regulation of expression of neurotransmitter receptors.

Active Projects as Principal Investigator:
Post-Transcriptional control of N-Methyl-D-Aspartate Receptor (NMDAR) expression
DAG DAG97/98.SC10 HK$99,910 Feb 1998 - Jan 1999
Glutamate receptors in the retina: Their functional significance for the establishment of
retinal circuity (with GUENTHER, Elke)
G-HK G-HK97/98.SC05 HK$25,000 Apr 1998 - Mar 1999

Representative Recent Publications:
Sucher, N.J., Awobuluyi, M., Choi, Y.B. and Lipton, S.A. (1996) "NMDA receptor: From
genes to channels", TiPS, 17:348-355.
Translocation, regulation, and a consensus motif", Neuron, 18:691-696.
Sucher, N.J., Lipton, S.A. and Dreyer, E.B. (1997) "Molecular basis of glutamate toxicity in
Stamler Js, Toone, Ej, Lipton Sa, Sucher Nj, J.S., Toone, E.J., Lipton, S.A. and Sucher, N.J.
(1997) "(S)NO Signals: Translocation, Regulation, and a Consensus Motif", Neuron,
18:691-696.
Prospects for Drug Discovery and Development", working paper.
WEN-XIONG WANG
Assistant Professor
(2358-7346; wwang@ust.hk)

Current Research Activities:
Metal bioavailability to aquatic organisms; impacts of harmful algal bloom on marine bivalves.

Active Projects as Principal Investigator:
The physiology of trace metal uptake in marine invertebrates: pathway and regulation
DAG DAG97/98.SC11 HK$98,000 May 1998 - Apr 1999

Representative Recent Publications:


JOSEPH T. Y. WONG
Lecturer
(2358-7343; botin@ust.hk)

PhD, University of Stirling (1988)
Croucher Foundation Research Fellow, NERC Institute of Virology, Oxford (1988-89)
Wellcome Trust Research Fellow, Oxford University (1989-92)

Research Fellow and Senior Scientific Officer, Marine Biological Association of the United Kingdom (1990-94)

Current Research Activities:

Molecular mechanisms of cell cycle control in dinoflagellates; general molecular biology of dinoflagellate; molecular neurobiology of the sea anemone; receptor biology in marine organisms.

Active Projects as Principal Investigator:

Cyclin-dependent kinases in dinoflagellates
RGC HKUST566/95M HK$531,000 Aug 1995 - Jun 1998

Regulation of S-phase in dinoflagellates: The role of PCNA (with NURSE, Maxime Paul)
CERG HKUST6175/97M HK$686,880 Sep 1997 - Aug 1999

Cloning of a dinoflagellate cyclin (with NURSE, Maxime Paul)
JRS JRS96/35 HK$77,690 Jan 1997 - Feb 1999

Bioassays for Kwei Ling Ko WONG, Yung Hou
KWT KWT97/98.SC01 HK$240,000 Feb 1998 - Jan 2000

Representative Recent Publications:


YONG XIE
Assistant Professor
(2358-7340; boyxie@ust.hk)

PhD, Cornell University (1988)
Postdoctoral Fellow, Cornell University (1989)
Postdoctoral Fellow, Rockefeller University (1990-93)

Current Research Activities:
Tumor immunology; protein engineering; apoptosis study.

Active Projects as Principal Investigator:
Genetically engineered novel anti-cancer compound for human liver cancer
ITDC AF/73/95 HK$2,250,000 Jun 1995 - May 1998
Application of human liver cancer-associated antigen (HLCA) in targeted immunotherapy, diagnostic imaging and vaccine design
RGC DAG96/97.SC07 HK$80,000 Oct 1996 - Feb 1998
Vaccine biotechnology: Genetically engineered chimeric protein vaccine against foot-and-mouth disease (with ZHENG, Zhaoxin; CHAN, D K O )
ITDC AF/138/96 HK$3,517,000 Sep 1996 - Aug 1999
Protein engineered enzymes for efficient manufacturing of beta-lactam antibiotics (with WU, Madeline C S)
ITDC AF/195/97 HK$3,100,000 Sep 1997 - Oct 2000

Representative Recent Publications:
ALBERT C. H. YU

Assistant Professor
(2358-7303; boachy@ust.hk)

PhD, University of Saskatchewan (1984)
Postdoctoral Fellow and Neurochemist, University of California, San Francisco (1984-89)
Senior Research Associate (1991-94) and Research Associate (1989-91), Stanford University School of Medicine

Current Research Activities:

Neural cell injury and regeneration; stroke and energy metabolism; Parkinson's disease; neural transplantation; free radicals and scavengers.

Active Projects as Principal Investigator:

Modulation of scar formation in the central nervous system after surgery by antisense gene therapy
RGC DAG95/96.SC07 HK$80,000 Nov 1995 - Oct 1996

Study of mechanisms of ischemic injury in cultured nerve cells (with BAETHMANN, Alexander)

A study on the expression of death-related genes and novel genes in astrocytes under ischemia
CERG HKUST6177/97M HK$686,880 Aug 1997 - May 2000

Cell death mechanisms in cultured brain cells under stroke treatment (with TOLKOFSKY, Aviva Miriam)
JRS JRS96/34 HK$77,520 Jan 1997 - Sep 1998

Representative Recent Publications:


Yu, A.C.H. and Xie, YONG (1998) "Functional genomics in Hong Kong", Biotechnology in Hong Kong, United States-China Intellectual Property Institute, USA.


Department of Chemistry

While chemistry is traditionally divided into four mainstream areas (i.e., analytical, inorganic, organic and physical chemistry), such a division is largely pedagogical in nature, and does not reflect the highly dynamic, multidisciplinary nature of chemistry. Chemistry is truly 'the central science' and its activities, whilst consisting of a purely chemical core containing fundamental science which is studied in its own right, also intimately involve areas such as molecular biology, molecular physics, materials science, molecular engineering as directed towards the development of nanotechnological devices, biotechnology, environmental science, drug design and development, nuclear medicine and others. We thus have developed teaching and research programs in the Department to reflect these modern viewpoints, and there is a strong interdisciplinary flavor in both programs.

From a research viewpoint, it is convenient to classify the different activities into three main groups. Thus, all those research staff whose projects involve synthetic organic and inorganic chemistry are integrated into the Molecular Design and Synthesis group. Analytical and some experimental physical chemists form the Molecular Characterization and Instrumentation group. The third group is named Molecular Dynamics and Structure of Complex Systems; this includes spectroscopists, physical, theoretical and computational chemists.

Facilities

The Department's research laboratories are located at the top level of the academic complex, overlooking Port Shelter.

Modern laser/spectrometers are housed in Chemistry's VFF (Vibration-Free-Floor) area. The equipment includes excimer laser, nanosecond Nd:YAG laser, mode-locked Nd:YLF laser, argon-ion laser, krypton-ion laser, pico-second/femto-second mode-locked Ti:Sapphire lasers, Spex macro/micro spectrometers, Bruker FT-IR/FT-Raman system, GC/MS, HPLC, GPC, capillary electrophoresis, atomic absorption spectrometer, a high resolution hybrid mass spectrometer (Kratos MS80RFAQ), a triple quadrupole mass spectrometer (Finnigan TSQ7000), a Bruker ARX 300 NMR spectrometer and a Jeol JES-TE 200 ESR spectrometer.

The centralized facilities of the Material Characterization and Preparation Facility contain state-of-the-art instrumentation such as high resolution NMR (400 MHz), single-crystal X-ray diffractometer, SEM, scanning tunneling/atomic force microscope, secondary ion mass spectrometer, surface and micro analytical system (AES/XPS/UPS), and other surface/film characterization instruments. The Microelectronic Fabrication Center provides state-of-the-art facilities for collaborative research and technology transfer related to chemical micro-lithography and development of biomedical instrumentation.

Supporting facilities include machine, electronic and glass-blowing shops and a central stockroom for chemicals, including biochemical and organic solvents.

Research Profile

HIROYUKI HIRAOKA
Professor and Acting Department Head
RICHARD HAYNES

Professor
REINHARD RENNEBERG

Reader in Chemistry and in Chemical Engineering
NAI-TENG YU

Professor
CHUN-TAO CHE

Associate Professor and Director of TCM Safety Information Center
WEI-MIN DAI

Associate Professor
GUOCHENG JIA

Associate Professor
WA-HUNG LEUNG

Associate Professor
XIAO-YUAN LI

Associate Professor
YUN DONG WU

Associate Professor
YIJING YAN

Associate Professor
PAUL R. CARLIER

Assistant Professor
ZHENYANG LIN

Assistant Professor
BEN Z. TANG

Assistant Professor
IAN D. WILLIAMS
Assistant Professor

SHIHE YANG

Assistant Professor
HIROYUKI HIRAOKA

Professor and Acting Department Head
(2358-7355; chhiraok@ust.hk)

PhD, Kyoto University (1959)
Junior Research Chemist, University of California, Los Angeles (1960-62)
Research Chemist, University of California, Berkeley (1962-63)
Research Staff, IBM Research Division (1966-90)
Visiting Professor, University of Bordeaux (1990)

Current Research Activities:
Photochemistry of simple molecules and polymeric materials; surface chemistry; polymers and advanced materials.

Active Projects as Principal Investigator:
Sub-100 mm size domain chemistry for molecular assembly
RGC HKUST587/95P HK$421,000 Jul 1995 - Apr 1998
Training of Miwon staff and development of I-line photoresist technology
MCC MCC95/96.SC01 HK$100,000 Jun 1996 - Dec 1997
Control of molecular and crystalline orientation by polarized photon beams
RIG DAG96/97.SC10 HK$80,000 Nov 1996 - Jun 1998

Representative Recent Publications:


RICHARD HAYNES
Professor
(2358-7364; haynes@ust.hk)

PhD, University of Western Australia (1970)
Gillette International Fellow, University of Karlsruhe (1970-72)
Visiting Lecturer, Imperial College of Science & Technology (1972-74)
Reader in Organic Chemistry, University of Sydney (1989-92)
Visiting Professor, Organic Chemistry Laboratory, Eidgenossische Technische Hochschule, Zurich (1985)

Current Research Activities:
Total synthesis of clinical and pharmaceutical agents; naturally occurring drugs from Chinese plants; asymmetric catalysis; organophosphorus chemistry; drug design and mechanism.

Active Projects as Principal Investigator:
Novel oxygen transfer reactions - generalized preparation and chemistry of 1,2,4-trioxanes with reference to the Chinese peroxidic antimalarial Qinghaosu
RGC HKUST591/95P HK$630,000 Sep 1995 - Aug 1998
Generalized approaches to enantiomerically-Pure P-chiral phosphine oxides and phosphines for asymmetric catalysis (with YEUNG, Lam Lung)
RGC HKUST706/96P HK$508,000 Sep 1996 - Aug 1998
Rational evolution of trioxane antimalarial agents as generalized chemotherapeutic agents: Investigation of basic chemistry of 1,2,4-trioxane and related systems, method of preparation and chemical basis for therapeutic mode of action
RDC-BAYER RDC96/97.SC01 HK$2,004,869 Sep 1996 - Sep 2000

Representative Recent Publications:


-Bis-tert-Butyl-phenylphosphine Oxides, and (R_p) and


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REINHARD RENNEBERG

Reader in Chemistry and in Chemical Engineering

(2358-7387; chrenneb@ust.hk)

PhD, Institute of Molecular Biology, Berlin (1979)
Postdoctoral Fellow, University of Texas, Dallas (1979)
Postdoctoral Fellow, Kyoto University (1983, 1986)
Reader in Biosensorics and Biochemistry and Head, Department of Immunosensors, Institute of Chemical and Biosensors, Munster, Germany (1991-95)

Current Research Activities:

Biosensors and bioelectronics; bioanalytical chemistry; environmental chemistry; medical diagnostics; protein engineering.

Active Projects as Principal Investigator:

Non-invasive biosensors for fitness check (with HALL, Elizabeth A. H.)
JRS JRS96/27 HK$75,988 Jan 1997 - Dec 1997

Fast detection of biodegradable substances in sea water of subtropical and tropical regions with a novel microbial sensor based on the yeast Arxula adeninivorans LS3 (with KUNZE,
Non-invasive biosensors for fitness check

Application of a continuous and portable biosensor for lactate and glucose measurement on HK athletes

Checking Hong Kong's water quality with novel biosensors

Development of a portable microbial sensor for fast detection of biodegradable substances in water

Representative Recent Publications:


Professor of Chemistry and Biochemistry, Georgia Institute of Technology (1980-90)
Adjunct Research Professor, Emory University Medical School (1984- )

Current Research Activities:
Ligand binding to metalloporphyrins and hemoproteins; organometallic chemical bonding; laser-based spectroscopy and applications; cataract/vision research; biomedical instrumentation.

Active Projects as Principal Investigator:
New porphyrin isomers and analogues: Electronic and optical properties by resonance Raman spectroscopy (with LI, Xiaoyuan)
RGC HKUST602/95P HK$1,000,000 Jan 1996 - Dec 1998
The study of water-insoluble molecules in aqueous media by surface enhanced raman and surface enhanced hyper-raman scattering (with LI, Xiaoyuan)
CERG HKUST6171/97P HK$450,000 Jan 1998 - Dec 1999

Representative Recent Publications:

CHUN-TAO CHE
Associate Professor and Director of TCM Safety Information Center
(2358-7351; chctche@ust.hk)

PhD, University of Illinois, Chicago (1982)
Research Chemist, Ludwig Institute for Cancer Research (1982-83)
Senior Research Associate, University of Illinois, Chicago (1984-85)
Research Asst Professor, University of Illinois, Chicago (1986-91)

Current Research Activities:
Chemical composition of medicinal plants; development of natural therapeutics; analytical techniques for natural products; literature database.

Active Projects as Principal Investigator:
Workshop on the quality and safety of Chinese medicinal products (with CHUNG, Wai Ming)

CF CF96/97.SC14 HK$90,000 Mar 1997 - Mar 1998

Antihormonal substances and inhibitors of 5a-reductase and aromatase from natural source

CERG HKUST589/95P HK$431,000 Sep 1995 - Aug 1998

A safety service centre to enhance the credibility and competitiveness of the Traditional Chinese Medicine (TCM) industry (with CHUNG, Wai Ming; LEE, Ophelia C W)

ITDC AF/191/96 HK$2,352,000 Sep 1996 - Dec 1998

Cancer drugs active against signal transduction targets

GIT GIT96/97.SC01 US$155,250 Jul 1996 - Jun 2001 Chemical standardization of Chinese medicines

CERG HKUST671/96P HK$591,000 Dec 1996 - Nov 1999

Potential drugs for psoriasis from Chinese medicine: Screening and purification (with RAMAN, Amala)

JRS JRS98/37 HK$64,950 Apr 1998 - Mar 1999

A multi-departmental project on mechanism-based drug discovery from Chinese herbs (with WONG, Joseph T Y; WANG, Jerry H C; WONG, Yung Hou)

RIG RI95/96.SC12 HK$1,544,759 Sep 1996 - Aug 1999

Representative Recent Publications:


WEI-MIN DAI

Associate Professor
(2358-7365; chdai@ust.hk)

PhD, Kyoto University (1990)

Research Associate, Scripps Research Institute (1990-92)

Asst Professor, The Hong Kong University of Science and Technology (1992-97)

Current Research Activities:

Synthetic organic and bioorganic chemistry; asymmetric reactions and synthesis methodology; synthesis of natural products and biomedically interesting molecules; drug design, synthesis, and mechanism; synthesis of molecules for advanced materials; porphyrin analog synthesis.

Active Projects as Principal Investigator:

Design and synthesis of analogs of enediyne anticancer antibiotics. An investigation on the mechanism of action of kedarcidin and C-1027 chromophores

RGC HKUST590/95P HK$670,000 Sep 1995 - Sep 1998

Synthesis of maduropeptin chromophore analogs and study on the formation of enediynes by an allylic rearrangement

DAG DAG97/98.SC12 HK$73,780 Feb 1998 - Oct 1999

Study on site-specific cleavage of carcinogenic DNA by designed agents (with XU, Yao-zhong)

JRS JRS98/38 HK$48,800 Mar 1998 - Feb 1999

Representative Recent Publications:


(E)-exo-Alkylidene Tetrahydrofurans via Base-Mediated Cyclization of Hydroxyl Propargylic Sulfones", *Tetrahedron*.


GUOCHEONG JIA
Associate Professor
(2358-7361; chjiag@ust.hk)

PhD, *Ohio State University* (1989)

*Postdoctoral Fellow, University of Toronto* (1989-91)

*Postdoctoral Fellow, University of Western Ontario* (1991-92)

**Current Research Activities:**
Organometallic chemistry; materials synthesis; homogeneous catalysis; metal hydride chemistry.

**Active Projects as Principal Investigator:**
Asymmetric catalysis using phosphine ligands with molecular recognition ability
RGC HKUST592/95P HK$700,000 Jan 1996 - Dec 1998
Carbon-carbon and carbon-hydrogen bond formation reactions involving terminal acetylenes, vinylidene and allenylidene complexes
CERG HKUST6153/97P HK$446,000 Sep 1997 - Aug 2000
Synthesis and characterization of conjugated organometallic dimeric and polymeric complexes
CERG HKUST670/96P HK$531,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


Lee, H.M., **Yao, J.Z.** and **Jia, G.** (1997) "Coupling Reactions of Terminal Acetylenes with
Ruthenium Complexes Containing the Orthometalated Ligand 2,6-(PPh₂CH₂)₂C₆H₃", *Organometallics*, 16(18):3927-3933.


WA-HUNG LEUNG

Associate Professor

(2358-7360; chleung@ust.hk)

*PhD, University of Hong Kong (1989)*

*Postdoctoral Fellow, Imperial College of Science & Technology (1989-91)*

**Current Research Activities:**

Inorganic and organometallic synthesis; homogeneous catalysis; materials synthesis; bioinorganic chemistry.

**Active Projects as Principal Investigator:**

Metal-sulfur clusters, a new class of advanced materials

CF CF96/97.SC12 HK$546,000 Jan 1997 - Dec 1998

Metal imido complexes as reagents for alkane functionalization and amino acid synthesis

RGC DAG95/96.SC08 HK$80,000 Nov 1995 - Oct 1996

Stereoselective synthesis of vicinal amino alcohols via ring opening of epoxides

RGC HKUST673/96P HK$508,000 Sep 1996 - Aug 1998

Metal-sulfur clusters, a new class of advanced materials

CF CF96/97.SC12 HK$546,000 Jan 1997 - Dec 1999

Metal alkyl complexes of porphyrins (with YU, Nai Teng)

CERG HKUST6152/97P HK$446,000 Dec 1997 - Nov 1999

Stereoselective synthesis of vicinal amino alcohols via ring opening of epoxides

CERG HKUST673/96P HK$508,000 Sep 1996 - Apr 1999
Representative Recent Publications:


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**XIAO-YUAN LI**

*Associate Professor*

(2358-7356; chxyli@ust.hk)

*PhD, Princeton University (1988)*

*Postdoctoral Fellow, University of California, Berkeley (1988-89)*

*Research Associate, National Research Council of Canada (1989-91)*

**Current Research Activities:**

Biophysical and bioinorganic and bioanalytical chemistry; materials science.

**Active Projects as Principal Investigator:**

Biomimetic catalysis with nanoscale confined metallocomplexes

RGC DAG96/97.SC28 HK$68,100 Dec 1996 - Oct 1997

Redox-activated forms of amino acids: Spectral signatures from spectroelectrochemistry and quantum mechanical computation

RGC HKUST594/95P HK$431,000 Oct 1995 - Sep 1998

Nanoscale confined chemistry with zeolite-occluded molecules: Syntheses, characterization and applications

CERG HKUST6151/97P HK$446,000 Sep 1997 - Aug 1999
Representative Recent Publications:


YUN DONG WU

Associate Professor

(2358-7391; chydwu@ust.hk)

PhD, University of Pittsburgh (1986)
Postdoctoral Fellow, University of California, Los Angeles (1986-87)
Research Associate, University of California, Los Angeles (1989-90)

Current Research Activities:

Mechanism of organometallic catalysis for stereoselective organic synthesis; design of novel cyclic antibiotics and peptide analogs as potential drugs; mechanism of anti-cancer drug action; chemical features and electronic structures of porphyrin and porphycene systems.

Active Projects as Principal Investigator:

Theoretical studies of bleomycin action: Design of new anti-cancer drugs
RGC HKUST599/95P HK$520,000 Jan 1996 - Dec 1998
Early-transition-metal d alkyl and alkylidene complexes: Stability, reactivity, catalysis, and decomposition mechanism
CERG HKUST6147/97P HK$396,000 Jan 1998 - Dec 1999
Design and synthesis of novel porphyrin analogs (with DAI, Wei Min)

CERG HKUST676/96P HK$996,000 Sep 1996 - Aug 2000

Representative Recent Publications:


YIJING YAN

Associate Professor

(2358-7388; yyan@ust.hk)

PhD, University of Rochester (1989)

Research Associate, University of Rochester (1988-90)

Postgraduate Researcher, University of California, San Diego (1990-91)

Research Chemist, University of California, San Diego (1992-93)

Current Research Activities:

Optimal control chemistry by light; molecular nonlinear spectroscopy in condensed phases; theory of chemical reaction and charge transfer; molecular dynamics and cooperativity; computational methods in chemical physics of complex systems.

Active Projects as Principal Investigator:

Molecular theory of ultrafast nonlinear spectroscopies and photochemistry in condensed phases

RGC HKUST600/95P HK$404,000 Oct 1995 - Sep 1998

Many-body interaction in chemical dynamics
Representative Recent Publications:


PAUL R. CARLIER

Assistant Professor

(2358-7352; chpaul@ust.hk)

PhD, Massachusetts Institute of Technology (1988)

Scientist, Polaroid Corporation (1988-91)

Current Research Activities:

Asymmetric synthesis; synthetic methodology development; catalysis; organometallic chemistry; CNS drug design.

Active Projects as Principal Investigator:

Asymmetric synthesis of substituted allicin derivatives and allylic thiols

RGC DAG96/97.SC12 HK$120,000 Dec 1996 - Nov 1997

Solution structure, asymmetric aldol, and asymmetric alkylation reactions of lithiated nitriles

RGC HKUST588/95P HK$401,000 Sep 1995 - Feb 1998

Novel, potent, and selective acetylcholinesterase inhibitors for treatment of alzheimer's disease (with HAN, Yifan; PANG, Yuan Ping)

CERG HKUST6156/97M HK$873,490 Oct 1997 - Dec 1999

Optimization of Indole-Based Nonpeptidic Analogs of Neurotensin (8-13)
Representative Recent Publications:


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ZHENYANG LIN

Assistant Professor

(2358-7379; chzlin@ust.hk)

*PhD, Oxford University (1989)*

*Senior Research Associate, Texas A&M University (1990-93)*

**Current Research Activities:**

Theoretical inorganic chemistry; clusters and metal-silane complexes.

**Active Projects as Principal Investigator:**

Structure and bonding studies in nickel chalcogenide compounds

DAG DAG97/98.SC13 HK$73,780 Jun 1998 - Jun 1999

Theoretical studies of small endohedral metallofullerenes

CERG HKUST678/96P HK$402,000 Jan 1997 - Sep 1999

**Representative Recent Publications:**


**BEN Z. TANG**

Assistant Professor

(2358-7375; tangbenz@ust.hk)

PhD, Kyoto University (1988)

Postdoctoral Research Fellow, University of Toronto (1989-94)

Senior Research Scientist, Neos Co. Ltd. (1989-94)

Current Research Activities:

Polymer chemistry; materials science; synthetic chemistry; organometallics; liquid crystals; optical active polymers; nanostructure materials and technology; hyperbranched macromolecules.

Active Projects as Principal Investigator:

Optically active polyacetylenes containing heteroatom chiral centers: Synthesis, characterization, properties, and applications

RGC HKUST597/95P HK$431,000 Sep 1995 - Aug 1998

Development of intelligent materials: Synthesis of fullerene-containing polymers and glasses and exploration of their applications as optical limiters

RIG DAG96/97.SC11 HK$120,000 Dec 1996 - May 1999

Development of novel polymeric materials with unique electrical and optical properties: Synthesis of liquid crystalline polyacetylenes

CERG HKUST6149/97P HK$446,000 Dec 1997 - Nov 1999

Representative Recent Publications:

Stereoregular Polyacetylenes Containing Cyano Groups, Poly 4- n-(4'-cyano-4-biphenyl)oxy alkyl oxy carbonyl phenyl acetylenes", *Macromolecules*, 30:5620-5628.


**IAN D. WILLIAMS**

*Assistant Professor*

(2358-7384; chwill@ust.hk)

*PhD, University of Bristol (1983)*

*Postdoctoral Associate, Massachusetts Institute of Technology (1983-85)*

*Research Associate, Materials Research Laboratory, Pennsylvania State University (1986-92)*

**Current Research Activities:**

Materials and solid state chemistry; X-ray crystallography; nonlinear optical materials; electrical properties of organic compounds.

**Active Projects as Principal Investigator:**

Organic nonlinear optical crystals

RGC HKUST596/95P HK$381,000 Sep 1995 - Aug 1998

Design of new inorganic solids using organic templates (with LIN, Zhenyang)

RGC HKUST681/96P HK$474,000 Jan 1997 - Dec 1998

Development of intelligent materials: Synthesis of fullerene-containing polymers and glasses and exploration of their applications as optical limiters

RIG DAG96/97.SC11 HK$120,000 Dec 1996 - May 1999
Development of novel polymeric materials with unique electrical and optical properties:
Synthesis of liquid crystalline polyacetylenes

CERG HKUST6149/97P HK$446,000 Dec 1997 - Nov 1999

Representative Recent Publications:


SHIHE YANG

Assistant Professor

(2358-7355; chsyang@ust.hk)

PhD, Rice University (1988)

Postdoctoral Fellow, Argonne National Laboratory (1988-89)

Postdoctoral Fellow, University of Toronto (1989-92)

Current Research Activities:

Gas phase clusters; nanomaterials; fullerene derivative materials.

Active Projects as Principal Investigator:

Studies of hydrocarbon activation by small transition metal clusters

CF CF95/96.SC02 HK$700,000 Jan 1996 - Dec 1998

Novel endohedral fullerenes: Synthesis and characterization
Nano-particle incorporation in polymer matrix by pulsed-laser-ablation: A novel approach to the fabrication of metal and semiconductor quantum structures

Photodissociation spectroscopy of mass-selected clean and dressed semiconductor clusters (with LOY, Michael M. T.)

Representative Recent Publications:

Ding, J. and Yang, S. (1996) "Isolation and characterization of Pr@C_{82} and Pr_{2}@C_{80}", J. Am. Chem. Soc., 118:11254-11257.


Seven major areas of research are being emphasized in the Department of Mathematics. They are: Algebra and Number Theory, Analysis and Differential Equations, Geometry and Topology, Fluid Mechanics, Scientific Computation, Probability and Statistics, Financial Mathematics.

**Algebra and Number Theory:** The theory of Lie groups, Lie algebras and their representations play an important role in many of the recent development of mathematics and in the interaction of mathematics with physics. Our current research includes representation theory of reductive groups, Kac-Moody algebras, quantum groups, conformal field theory and combinatorics.

Number theory has a long and distinguished history, and the concepts and problems relating to the theory have been instrumental in the foundation of a large part of mathematics. Number theory is flourishing in the past decades, as evidence by the recent proof of Fermat's Last Theorem. Our current research specializes in transcendental number theory and Diophantine approximation.

**Analysis and Differential Equations:** Analysis of real and complex functions studies properties of various classes of functions. Many beautiful results in this area serve to provide a solid foundation for mathematics as a whole.

Differential equations appear in many scientific as well as engineering problems when mathematical models are proposed to quantify the underlying phenomenon. The study of such equations, either theoretically or numerically, is crucial in understanding related problems.

Current research areas comprise complex analysis, exponential asymptotics, functional analysis, nonlinear dynamical systems, nonlinear parabolic equations and nonlinear Schrödinger equations.

**Geometry and Topology:** Geometry and topology study shapes and forms and their transformations. The visual recognition of physical objects in the universe stimulates their initial development. Through interaction with various fields of science (e.g., astronomy, mechanics, physics and computer science) and other areas of mathematics such as algebra and analysis, geometry and topology have become subjects with their own independent interests as well as applications in almost every area of science and technology. The current trend is in global analysis on manifolds and the study of low-dimensional topology using ideas and methods inspired by high energy physics.

The active research areas in the department include algebraic geometry, differential geometry, gauge theory, K-theory and low-dimensional topology.

**Fluid Mechanics:** Fluid mechanics studies the motion of liquids and gases with direct application to industry and the environment. It is particularly rich in nonlinear problems and is a major source of ideas and techniques in applied mathematics.

Current research areas include the study of such flows as two-phase flow, rotating flow, high speed flow, and their stability, the fluid dynamics of combustion, typhoon (which comes to Hong Kong several times a year), and bubbles. Research is also carried out on such dynamic
phenomena as bifurcation, chaos, and turbulence. The research in fluid dynamics is often heavily computational and there is strong interaction with the researchers in scientific computation.

**Scientific Computation:** With the spectacular advances of computer hardware and computing algorithms, scientific computation has become an independent approach to studying science and technology, complementing the theoretical and experimental approach. It focuses on developing algorithms that are reliable, accurate, and economical in large scale computation of solutions of problems in science, engineering, and business and management.

Current research is concentrated on parallel algorithms, shock-capturing schemes, gas-kinetic schemes, numerical linear algebra, numerical solutions to elliptic and hyperbolic differential equations, a generalized Lagrangian formulation of computational fluid dynamics, numerical simulation of turbulence, turbulent dispersion, quantum chaos and superconductivity. There are also joint research projects with other departments and other institutions in and outside Hong Kong.

**Probability and Statistics:** Applications of statistics have been receiving increasing attention among local business and industrial communities. The balance between theory and applications is reflected through the faculty research activities which can be classified into four main categories.

In the study of time series and dependent data, inference procedures are sought to model and explain temporal and spatial dependent structures. Specific areas include inference for nonstationarity, nonlinearity, long-memory behavior, and continuous time models. This area of research has a close connection with economics and engineering. Resampling methodology forms the second category. It deals with the estimation of parameters and construction of confidence regions with resampling techniques. Particular topics include block bootstrap, bootstrap for censored data, and Edgeworth and saddle point approximations. The third component, survival analysis, comprises estimation of survival function under random censoring and truncation, Kaplan-Meier estimator, and errors in variables for general linear models. Applications to biomedical sciences constitute an integral part of categories two and three. The fourth area is stochastic processes and stochastic analysis. Topics currently under investigation include filtering, diffusion and Markov processes, and stochastic approximation and control. Research in this area is related to the study of financial modeling.

**Financial Mathematics:** Financial mathematics is one of the fastest growing research fields in applied mathematics. International banking and financial firms around the globe are hiring science PhDs who can use advanced analytical and numerical techniques to price financial derivatives and manage portfolio risks. Such phenomenon is coined as the "Rocket Science on Wall Street". This trend has been accelerating in recent years on numerous fronts, driven both by substantial theoretical advances as well as by a practical need in the industry to develop effective methods to price and hedge increasingly complex financial instruments.

The current research areas in the Department include pricing models for exotic options, development of pricing algorithms for complex financial derivatives, optimal portfolio and asset allocation, stochastic analysis of interest rates and related models.

**Facilities**
The Department of Mathematics has its own teaching/research laboratories equipped with a number of high-end workstations. For research in high performance scientific computation, a parallel computer which consists of an HP workstation cluster connected by an ATM (Asynchronous Transfer Mode) switch has been purchased. With the PVM (Parallel Virtual Machine) software system installed, faculty and students can make use of the aggregate power of the workstation cluster to solve large computational problems. Two SGI workstations have also been installed for the purpose of high quality visualization.

Another facility in the Department of Mathematics is the Fluid Dynamics Laboratory. It is equipped with modern experimental facilities such as PIV (Particle Image Velocimeter) system for measuring velocity fields in fluid flows. The laboratory is equipped for the teaching and for research in several active directions of Fluid Mechanics such as rotating flows, waves, biological fluid mechanics and various industrial applications.

Operated by the University's Center of Computing Services and Telecommunications, all computing machines on campus are connected by a 100 million bits/second high-speed fiber optic network (FDDI) as backbone with Ethernet subnet reaching all desktops. Moreover, a Paragon and Onyx supercomputer have also been purchased to serve those users who require extremely intensive computational processing power.

Research Profile

SHIU-YUEN CHENG
Professor and Department Head

KWING LAM CHAN
Professor

WU-YI HSIANG
Professor

DIN-YU HSIEH
Professor

WAI-HOW HUI
Professor

JIAN-SHU LI
Professor

CHUNG-CHUN YANG
Professor

KUNRUI YU
Professor
J. C. H. FUNG
Lecturer

JISHAN HU
Lecturer

BAO QIN LI
Assistant Professor

SHIU-HONG LUI
Assistant Professor

JIAN-MIN MAO
Assistant Professor

YUANWEI QI
Lecturer

ALLANUS H. TSOI
Assistant Professor

RONGGUANG WANG
Assistant Professor

XIAOPING WANG
Lecturer

MAN YU WONG
Assistant Professor

LIXIN WU
Lecturer

KUN XU
Lecturer

XIAOPING XU
Lecturer

MIN YAN
Lecturer
SHIU-YUEN CHENG

Professor and Department Head
(2358-7412; macheng@ust.hk)

PhD, University of California, Berkeley (1974)

Professor of Mathematics, Chinese University of Hong Kong (1992-95)

Professor of Mathematics, University of California, Los Angeles (1981- )

Current Research Activities:

Differential geometry; game theory; geometric partial differential equations.

Active Projects as Principal Investigator:

Eigenvalue problems of differential forms
DAG DAG96/97.SC29 HK$78,100 Jan 1997 - Jun 1999
Spectral gap estimates and isoperimetric inequalities
CERG HKUST6159/97P HK$476,000 Jan 1998 - Dec 1999

Representative Recent Publications:


KWING LAM CHAN

Professor
(2358-7424; maklchan@ust.hk)

PhD, Princeton University (1974)
Senior Scientist, Applied Research Corporation (1980-94)

Current Research Activities:
Computational astrophysics; atmospheric dynamics.

Active Projects as Principal Investigator:
Numerical study of fundamental problems in solar physics-convection and differential rotation
RGC HKUST608/95P HK$665,000 Sep 1995 - Sep 1998
Numerical study of astrophysical dynamos (with BRANDENBURGH, Axel)
JRS JRS98/39 HK$61,540 Apr 1998 - Mar 1999

Representative Recent Publications:


WU-YI HSIANG

Professor
(2358-7411; mahsiang@ust.hk)

PhD, Princeton University
Professor of Mathematics, University of California, Berkeley (1968- )

Current Research Activities:
Differential geometry; transferration group; classical geometry; celestial mechanics; quantum mechanics.

Active Projects as Principal Investigator:
Many body problem in quantum mechanics
DAG DAG97/98.SC14 HK$90,807 May 1998 - Apr 1999

DIN-YU HSIEH

Professor
(2358-7411; mahsieh@ust.hk)

PhD, California Institute of Technology (1960)
Research Fellow, California Institute of Technology (1960-63)
Professor of Applied Mathematics, Brown University (1978- )

Current Research Activities:
Wave and stability; asymptotic methods; two-phase flows.

Active Projects as Principal Investigator:
Stability problems and water waves
RGC DAG96/97.SC30 HK$78,100 Jan 1997 - May 1998

Representative Recent Publications:


WAI-HOW HUI

Professor
(2358-7415; whhui@ust.hk)

PhD (1968), DSc (1983), University of Southampton
Research Associate, University of Southampton (1968-69)
Professor of Applied Mathematics and Mechanical Engineering, University of Waterloo (1979-94)
Visiting Professor, NASA Ames Research Center (1980)

Current Research Activities:
Computational fluid dynamics; high speed aerodynamics; nonlinear water wave theory; applied partial differential equations.

Active Projects as Principal Investigator:
Generalized lagrangian method for computating inviscid compressible flow
RGC HKUST648/95E HK$820,000 Oct 1995 - Sep 1998
Scientific computation
UGC TOO96/97.SC03 HK$200,000 Jan 1997 - Jun 1997
Computational fluid dynamics & Modeling and simulation of complex systems (with CHAN, Che Ting)
AOE AOE97/98.SC04 HK$390,520 Apr 1998 - Jun 2001

Representative Recent Publications:


JIAN-SHU LI

Professor

(2358-7437; matom@ust.hk)

PhD, Yale University (1987)

**Current Research Activities:**

Representations of Lie groups; automorphic forms.

**Active Projects as Principal Investigator:**

Theta series and cohomology of arithmetic manifolds


**Representative Recent Publications:**


Li, J.-S. (in press) "Minimal representations and reductive dual pairs", *IAS/Park City*
CHUNG-CHUN YANG

Professor
(2358-7414; mayang@ust.hk)

PhD, University of Wisconsin, Madison (1969)
Research Associate, Michigan State University (1969-70)
Research Mathematician, Naval Research Laboratory (1970-90)
Visiting Professor, Illinois Institute of Technology (1983-84)

Current Research Activities:
Real and complex analysis; value distribution theory and its applications; complex dynamics.

Active Projects as Principal Investigator:
Promoting the research of value distribution theory and its applications with Chinese complex analysts (with HUA, Xin-Hou; YI, Hong-Xun; YANG, Lo; LI, Zhong)

CPDG CPDG94/95.SC19 HK$11,000 Jul 1995 - Oct 1996
Complex dynamics and value distribution (with BERGWEILER, Walter)
G-HK G-HK97/98.SC04 HK$25,000 Apr 1998 - Mar 1999
Value distribution theory and its applications to factorization and complex dynamics of analytic mappings
CERG HKUST710/96P HK$416,000 Oct 1996 - Sep 1999
Entire and meromorphic functions of one and several complex variables
CERG HKUST712/96P HK$462,000 Oct 1996 - Sep 1999

Representative Recent Publications:


Cherry, W and Yang, C.-C. (in press) "Uniqueness of non-Archimedean entire functions sharing sets of values counting multiplicity", Proc. A.M.S.

Li, P and Yang, C.-C. (1998) "On characteristics of meromorphic functions that share three


**KUNRUI YU**

*Professor*

(2358-7417; makryu@ust.hk)

*Dr. rer. nat., Universität Bonn* (1987)

*Professor, Institute of Mathematics, Chinese Academy of Sciences, Beijing* (1988-91)

*Member, Institute for Advanced Study, Princeton* (1989-90)

**Current Research Activities:**

Transcendental number theory; diophantine approximation.

**Active Projects as Principal Investigator:**

Researches in transcendental number theory and their applications to diophantine problems

RGC HKUST633/95P HK$386,000 Jan 1996 - Dec 1998

**Representative Recent Publications:**


VLADIMIR A. VLADIMIROV

Reader
(2358-7443; mavlad@ust.hk)

PhD (1979), DSc (1990), Russian Academy of Sciences and Novosibirsk University

Professor, Novosibirsk University (1989- )

Visiting Professor, Cambridge University (1993)

Visiting Professor, Leeds University (1992)

Current Research Activities:
Rotating flows; hydrodynamic stability; biological fluid mechanics.

Active Projects as Principal Investigator:
Breakthrough to PIV measurements of Algal Motility
DAG DAG97/98.SC19 HK$56,755 May 1998 - Apr 1999
Nonlinear perturbations in atmospheric and ocean flows (with MU, Mo)
CERG HKUST6169/97P HK$421,000 Oct 1997 - Sep 1999
Direct Lyapunov approach in the Theory of Hydrodynamic Stability
Theoretical & experimental studies of low Reynolds number hydrodynamics (with IL'IN, Konstantin; PEDLEY, Timothy John; MOFFATT, Henry Keith)
JRS JRS96/28 HK$76,920 Jan 1997 - Sep 1998

Representative Recent Publications:


QIANG DU

Associate Professor

(2358-7456; madu@ust.hk)

PhD, Carnegie Mellon University (1988)
Asst and Assoc Professor, Michigan State University (1990-95)
Visiting Assoc Professor, Carnegie Mellon University (1993)

Current Research Activities:

Computational and applied mathematics; numerical and applied analysis; scientific computing.

Active Projects as Principal Investigator:

Numerical simulations of vortex motions in layer superconductors
RGC DAG95/96.SC18 HK$80,000 Mar 1996 - Oct 1997
Numerical algorithms for nonlinear PDES, their parallelizations and their applications
CERG HKUST6167/97P HK$416,000 Aug 1997 - Aug 1999

Representative Recent Publications:


JING-SONG HUANG
Associate Professor
(2358-7450; mahuang@ust.hk)

PhD, Massachusetts Institute of Technology (1989)
Member, Institute for Advanced Study, Princeton (1989-90)
Instructor, University of Utah (1990-93)

Current Research Activities:
Representation theory; Lie theory.

Active Projects as Principal Investigator:
Unitary representations of semisimple Lie groups
CERG HKUST713/96P HK$654,000 Oct 1996 - Sep 1999

Representative Recent Publications:

BINGYI JING
Associate Professor
(2358-7458; majing@ust.hk)

PhD, University of Sydney (1993)
Research Associate, Australian National University (1992-94)

Current Research Activities:
Resampling methods; asymptotic distribution approximations; survival analysis.

Active Projects as Principal Investigator:
Saddlepoint approximations and their application to resampling
RGC HKUST627/95P HK$331,000 Aug 1995 - Feb 1998
Bootstrap methods and their applications to some nonstandard problems
CERG HKUST6162/97P HK$396,000 Aug 1997 - Jul 1999

Representative Recent Publications:


YUE-KUEN KWOK

Senior Lecturer
(2358-7418; maykwok@ust.hk)

PhD, Brown University (1985)
Asst Professor, San Jose State University (1987-90)
Asst Professor, West Virginia University (1985-87)

Current Research Activities:
Financial mathematics; pricing theory of exotic derivatives.

Active Projects as Principal Investigator:
Pricing models of commodity-linked bonds and convertible bonds
Pricing models for American options with time dependent barriers
CERG HKUST6250/97H HK$200,000 Aug 1997 - Jul 1999

Representative Recent Publications:


KIN Y. LI

Associate Professor

(2358-7420; makyli@ust.hk)

PhD, University of California, Berkeley (1989)

Gordon Whyburn Research Instructor Fellow, University of Virginia (1989-91)

Current Research Activities:

Complex function theory; Hilbert space operator theory; functional analysis.

Active Projects as Principal Investigator:

Density of interpolating Blaschke products
DAG DAG96/97.SC32 HK$68,100 Jan 1997 - Dec 1998

Representative Recent Publications:

WEI-PING LI
Associate Professor
(2358-7432; mawpli@ust.hk)

PhD, Columbia University (1991)
Visiting Asst Professor, Oklahoma State University (1991-92)

Current Research Activities:
Algebraic geometry.

Active Projects as Principal Investigator:
Moduli space of stable bundles and Donaldson polynomials
RGC HKUST631/95P HK$331,000 Dec 1995 - Mar 1999

Representative Recent Publications:

GUOWU MENG
Associate Professor
(2358-7451; mameng@ust.hk)

PhD, Brown University (1993)

Current Research Activities:
Algebraic topology; differential topology; knot theory.

**Active Projects as Principal Investigator:**

Su(2) gauge theory and generalized Casson invariant  
DAG DAG96/97.SC33 HK$48,100 Jan 1997 - Dec 1999  
Quantum invariants from topological point of view  
CERG HKUST6161/97P HK$306,000 Sep 1997 - Aug 2000

**Representative Recent Publications:**


**MO MU**

Associate Professor  
(2358-7446; mamu@ust.hk)

PhD, Academia Sinica (1987)  
Research Associate, Purdue University (1987-93)  
Asst Professor, Academia Sinica (1987)

**Current Research Activities:**

Parallel computing; superconductor simulation numerical methods; mathematical software; numerical solution to PDES.

**Active Projects as Principal Investigator:**

Massive parallel PDE solvers and applications  
RGC HKUST593/94E HK$313,000 Jan 1995 - Jan 1999

**Representative Recent Publications:**


GOPAL K. BASAK
Assistant Professor
(2358-7439; mabasak@ust.hk)

PhD, Indiana University (1989)
Asst Professor, Indian Institute of Science, Bangalore (1992-93)
Visiting Asst Professor, University of Georgia, Athens (1991-92)
Neyman Visiting Asst Professor, University of California, Berkeley (1989-91)

**Current Research Activities:**
Asymptotics of Markov processes; stochastic differential equations; stochastic modeling and control; inference for stochastic processes.

**Active Projects as Principal Investigator:**
Qualitative theory of non-irreducible Markov processes and its applications
RGC DAG95/96.SC15 HK$62,000 Jun 1996 - Sep 1997
Asymptotic inference for nonstationary and continuous time series
RGC HKUST603/95P HK$331,000 Jan 1996 - Dec 1998

**Representative Recent Publications:**


JEFFREY R. CHASNOV
Assistant Professor
(2358-7448; machas@ust.hk)

PhD, Columbia University (1990)

Current Research Activities:
Turbulence simulation and theory; nonlinear dynamics; scientific computation.

Active Projects as Principal Investigator:
Turbulent collapse of forced rotating flow
CERG HKUST705/96P HK$462,000 Jan 1997 - Dec 1999

Representative Recent Publications:


BEIFANG CHEN
Assistant Professor
(2358-7449; mabfchen@ust.hk)
PhD, State University of New York at Buffalo (1991)

Instructor in Applied Mathematics, Massachusetts Institute of Technology (1991-93)

Current Research Activities:
Discrete mathematics; combinatorics; geometric probability; computational geometry.

Active Projects as Principal Investigator:
The combinatorics of polyhedral spaces
CERG HKUST707/96P HK$474,000 Dec 1996 - Dec 1999

Representative Recent Publications:


KANI CHEN
Assistant Professor
(2358-7425; makchen@ust.hk)

PhD, Columbia University (1994)
Visiting Asst Professor, Columbia University (1994)

Current Research Activities:
Survival analysis; sequential analysis; bootstrapping; empirical process; stochastic modeling; missing data and EM algorithm.

Active Projects as Principal Investigator:
The bootstrap accuracy and the efficient estimation of treatment effects in clinical trials.
CERG HKUST702/96P HK$416,000 Aug 1996 - Jul 1999

Representative Recent Publications:


YIK MAN CHIANG

*Lecturer*

(2358-7441; machiang@ust.hk)

PhD, *University of London* (1991)

*Lecturer, Bolton Institute, UK* (1991-92)

*Chief Research Assistant, University of Joensuu, Finland* (1992)

**Current Research Activities:**

Ordinary differential equations in the complex plane; quasiconformal mappings; the application of mathematics, especially problems related to complex function theory.

**Active Projects as Principal Investigator:**

Explicit construction of quasiconformal extensions and univalence criteria

RGC DAG95/96.SCI6 HK$62,100 Jun 1996 - Jun 1997

Oscillation of linear differential equations in the complex plane

CERG HKUST711/96P HK$362,000 Dec 1996 - Jul 1999

**Representative Recent Publications:**


**J. C. H. FUNG**

Lecturer  
(2358-7419; majfung@ust.hk)

PhD, University of Cambridge (1990)  
Research Associate, University of Cambridge (1990-92)

Current Research Activities:
Computational fluid dynamics; turbulence; environmental studies.

Active Projects as Principal Investigator:
The theory of quasiparticle scattering at helium surfaces (with SOBNACK, Mulshankur Binoy)  
DAG DAG95/96.SC17 HK$63,000 Jun 1996 - May 1997  
Physics of fractals and spirals: falling fractal flakes, scalar-vortex interactions and flame-vortex interactions (with VASSILICOS, John Christos)  
CERG HKUST704/96P HK$416,000 Nov 1996 - Feb 1999  
Physics of fractals and spirals (with VASSILICOS, John Christos)  
JRS JRS96/29 HK$66,875 Jan 1997 - Jul 1998

Representative Recent Publications:


**Fung, J.C.H.** (1998) "The dependence of the time scale of relative Lagrangian motion on the


**JISHAN HU**

*Lecturer*

(2358-7434; majhu@ust.hk)

*PhD, Princeton University (1990)*

*Visiting Asst Professor, West Virginia University (1990-92)*

**Current Research Activities:**

Applied analysis; exponential asymptotics; integrable systems.

**Active Projects as Principal Investigator:**

Symmetry of solutions and asymptotics beyond all orders for some nonlinear oscillators (with MAO, Jian Min)

RIG DAG96/97.SC17 HK$80,000 Oct 1996 - Sep 1999

Nonlocal solitary waves for nonlinear evolution equations

DAG DAG96/97.SC31 HK$68,100 Jan 1997 - Jun 1998

Interactive dynamics of convection and dendritic growth

DAG DAG97/98.SC15 HK$73,780 Mar 1998 - Feb 1999

**Representative Recent Publications:**

**Hu, J.** (1998) "Computation of the leading behavior of the adiabatic invariant of nonlinear oscillator

\[ \frac{d^2 y}{dt^2} e^2 + Q(t)y = R(t)y^m \], *European J. Appl. Math.*, 9:187-194.


**BAO QIN LI**  
**Assistant Professor**

*PhD, University of Maryland (1993)*  
*Postdoctoral Researcher, University of Maryland (1993-94)*  
*Lecturer, University of Michigan (1994-95)*

**Current Research Activities:**  
Complex analysis; harmonic analysis.

**Active Projects as Principal Investigator:**  
Interpolating and zero varieties in several complex variables  
RGC DAG95/96.SC10 HK$60,000 Nov 1995 - Oct 1996  
Entire and meromorphic functions of one and several complex variables (with YANG, Chung Chun)  
RGC HKUST712/96P HK$462,000 Oct 1996 - Sep 1998

**Representative Recent Publications:**


Li, B.Q. (in press) "Uniqueness of entire functions sharing four small functions", *American J. Mathematics*.

*Nagoya Math. J.*
SHIU-HONG LUI
Assistant Professor
(2358-7416; shlui@ust.hk)

PhD, California Institute of Technology (1992)

Current Research Activities:
Numerical analysis; differential equations.

Active Projects as Principal Investigator:
Domain decomposition method for eigenvalue problems and computations and applications of pseudospectra.
CERG HKUST726/96E HK$172,000 Jan 1997 - Aug 1999

Representative Recent Publications:


JIAN-MIN MAO
Assistant Professor
(2358-7423; mamao@ust.hk)

PhD, University of Houston (1985)
Postdoctoral Fellow, La Jolla Institute (1985-87)

Asst and Assoc Research Professor, College of William & Mary (1989-91)

Current Research Activities:
Chaos and nonlinear dynamics; Hamiltonian bifurcation theory; mathematical physics; scientific computation.

Active Projects as Principal Investigator:
Effects of bifurcation on absorption spectrum (with HU, Ji Shan)
RGC HKUST606/95P HK$331,000 Jan 1996 - Dec 1998

Representative Recent Publications:


YUANWEI QI
Lecturer
(2358-7430; maqi@ust.hk)

PhD, Oxford University (1990)

Postdoctoral Research Fellow, Oxford University (1990)

Visiting Asst Professor, Iowa State University (1990-91)

Current Research Activities:
Differential equations; scientific computation.

Active Projects as Principal Investigator:
The large time behavior of R-D systems and applications
Analytical solutions for a class of optimal portfolio problems

Representative Recent Publications:


ALLANUS H. TSOI
Assistant Professor
(2358-7421; matsoi@ust.hk)

PhD, University of Alberta (1990)
Research Associate, University of Alberta (1990)

Current Research Activities:
Stochastic analysis; stochastic control and filtering; probability in finance; point processes.

Active Projects as Principal Investigator:
Theory and applications of stochastic systems with jumps
RGC HKUST632/95P HK$351,000 Dec 1995 - Nov 1998
Stability theory and stochastic control
RIG DAG96/97.SC15 HK$80,000 Dec 1996 - Jul 1998
Stochastic processes in cancer dynamics
Representative Recent Publications:


RONGGUANG WANG

Assistant Professor

(2358-7453; marwang@ust.hk)

PhD, Harvard University (1993)
Postdoctoral Fellow, IHES (1993-94)
Postdoctoral Fellow, Max-Planck Institute (1995)

Current Research Activities:

Gauge theory; differential geometry; differential topology.

Active Projects as Principal Investigator:

Monopoles and 3-D geometry and topology
RGC DAG95/96.SC11 HK$80,000 Nov 1995 - Dec 1996
The geometry of monopoles and the topology of Three-Manifolds
RGC DAG96/97.SC34 HK$49,100 Jan 1997 - Dec 1997

Representative Recent Publications:


Wang, R.G. (1997) "A local 4-cusp theorem for wave fronts", *A local 4-cusp theorem for wave fronts*, IAS/Park City Summer Research School, Park City, USA, July 5.


XIAOPING WANG

Lecturer

(2358-7438; mawang@ust.hk)

PhD, New York University (1990)
Visiting Research Fellow, Princeton University (1993)
Instructor, University of Colorado, Boulder (1991-93)
Postdoctoral Fellow, Mathematical Science Research Institute, University of California, Berkeley (1990)

Current Research Activities:
Singular behavior in nonlinear PDE; phase transition; wave propagation in disordered media.

Active Projects as Principal Investigator:
Landau-Lifschitz equation of ferromagnetism: Solitons, stability and singular behavior
RIG DAG96/97.SC16 HK$80,000 Dec 1996 - Dec 1998
The nonlinear schroedinger equation: Self-focusing and singular behavior
CERG HKUST6165/97P HK$396,000 Dec 1997 - Dec 1999

Representative Recent Publications:


MAN YU WONG  
Assistant Professor  
(2358-7436; mamywong@ust.hk)

PhD, Imperial College of Science, Technology and Medicine, London (1990)
Statistician, National Institute for Biological Standards and Control (1989-92) Lecturer, Hong Kong Polytechnic (1984-87)

Current Research Activities:
Error in variables model; statistical inference; generalized linear models; biostatistics.

Active Projects as Principal Investigator:
Correction of measurement error in epidemiological study (with DAY, Nicholas E.)
JRS JRS96/30 HK$50,000 Jan 1997-Jan 1998
Analysis of longitudinal data
DAG DAG96/97.SC35 HK$48,100 Apr 1997 - Jun 1998
Measurement error in epidemiology
DAG DAG97/98.SC20 HK$73,780 Apr 1998 - Feb 1999
Statistical methods in nutritional epidemiology (with DAY, Nicholas Edward)
JRS JRS98/41 HK$77,700 Mar 1998 - Jun 1999

Representative Recent Publications:


epidemiology: the design of validation studies", *Statistics in Medicine*.

**LIXIN WU**

*Lecturer*

(2358-7435; malwu@ust.hk)

*PhD, University of California, Los Angeles (1991)*

*Asst Professor, University of California, Los Angeles (1991-92)*

**Current Research Activities:**

Numerical analysis; computational fluid dynamics; finance mathematics.

**Active Projects as Principal Investigator:**

Finite difference algorithms for valuation of financial options with early exercise features (with KWOK, Yue Kuen)

RGC DAG96/97.SC13 HK$80,000 Dec 1996 - Nov 1997

**Representative Recent Publications:**


**KUN XU**

*Lecturer*

(2358-7433; makxu@ust.hk)

*PhD, Columbia University (1993)*
Research Associate, Princeton University (1993-96)

Research staff, Princeton University (1996)

**Current Research Activities:**

Computational fluid dynamics; gas kinetic schemes; rarefied gas.

**Active Projects as Principal Investigator:**

Gas-kinetic method for the Navier-Stokes equations

RGC DAG96/97.SC36 HK$78,100 Dec 1996 - Dec 1997

Generalized lagrangian BGK method for computing multispecies chemical reactive flow
(with HUI, Grafton W H)

CERG HKUST6166/97P HK$416,000 Sep 1997 - Aug 1999

**Representative Recent Publications:**


**XIAOPING XU**

*Lecturer*

(2358-7431; xiaoping@ust.hk)

PhD, Rutgers University (1992)

**Current Research Activities:**

Self-dual codes and lattices; Lie algebras and vertex operator algebras; Yang-Baxter equations; discrete groups; Hamiltonian operators; group invariants; conformal superalgebras.

**Active Projects as Principal Investigator:**
Hamiltonian operators and structures of simple vertex operator algebras
CERG HKUST709/96P HK$469,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


**MIN YAN**

*Lecturer*

(2358-7442; mamyan@ust.hk)

*PhD, University of Chicago (1990)*

*Asst Professor, University of Michigan (1991-92)*

*Asst Professor, Pennsylvania State University (1990-91)*

**Current Research Activities:**

Algebraic topology; geometric topology; combinatorics; convex analysis

**Active Projects as Principal Investigator:**

Stratified approach to Eulerian combinatorics
RGC DAG96/97.SC37 HK$48,100 Jan 1997 - Dec 1997

Stratified approach to Eulerian topology and combinatorics
RGC DAG97/98.SC21 HK$73,780 Feb 1998 - Jan 1999

**Representative Recent Publications:**


YONGCHANG ZHU

*Lecturer*

(2358-7447; mazhu@ust.hk)

*PhD, Yale University (1990)*

*Division Research Fellow, California Institute of Technology (1990-93)*

*Visiting Member, Max Planck Institute, Bonn (1994-95)*

*Visiting Member, Institute for Advanced Study, Princeton (1993-94)*

**Current Research Activities:**

Infinite dimensional Lie algebras; algebras and quantum groups; vertex operator algebras; conformal field theory.

**Active Projects as Principal Investigator:**

Vertex operator algebras and Hopf algebras

RGC HKUST629/95P HK$251,000 Jan 1996 - Dec 1997

**Representative Recent Publications:**


Department of Physics

As a fundamental science, physics presents major challenges to the human mind, and the principles of physics serve as a foundation for engineering and other sciences. The new technologies that physics has spawned are so ingrained in our civilization that their scientific origins are often overlooked. The discoveries of the principles of solid-state transistors, which led to the miniaturization of electronic devices, or atomic hyperfine structure and superconductivity, which made possible nuclear magnetic resonance (NMR) imaging, and of the laser, which underpins present-day information technology are but a few examples. In addition to directly generating technological innovation, physics also indirectly supports progress throughout society by providing tools with which people in other fields create innovations.

Of all areas, optical physics and condensed matter physics (CMP) have the greatest impact on our daily lives. It is thus natural that the Department places research emphasis on these fields. Programs include both experimental and theoretical aspects of linear and non-linear optics, low-dimensional systems, mesoscopic systems, microstructured and nanostructured materials, and surfaces and interfaces. A program of regular visiting faculty members and scholars in the other specialties helps ensure a breadth of coverage.

Facilities

A number of central service facilities and interdisciplinary research institutes provide support for the Department's research programs. Particularly relevant are the centers for Materials Characterization and Preparation, Microelectronic Fabrication, Computing Services and Telecommunications, and the research institutes for Information Technology, Advanced Materials, Microsystems, and Scientific Computation. Facilities for scientific computation include optical-fibre distributive networks, various workstations, and a parallel processing computer. The Department has laboratories for laser physics, photonics, new thin-film materials, surface/interface studies, solid state properties, polymers and liquid crystals, x-ray optics, semiconductor clusters, and non-linear dynamics. The Zheng Ge Ru Thin Film Physics Laboratory, the Joyce M. Kuok Laser and Photonics Laboratory, and the William Mong Semiconductor Clusters Laboratory form a nucleus for HKUST's Advanced Materials Research Institute.

Research Profile

MICHAEL M. LOY

Professor and Dean of Science

NELSON CUE

Professor, Associate Vice President for Academic Affairs, and Director of Advanced Materials Research Institute

LEROY L. CHANG

Professor and Dean of Science
KWONG MOW YOO
Lecturer

XIXIANG ZHANG
Assistant Professor
Research Profile

MICHAEL M. LOY
Professor and Dean of Science
(2358-7267; ssloy@ust.hk)

PhD, University of California, Berkeley (1971)
Senior Manager (1987-93), Research Staff and Manager (1971-87), IBM Research

Current Research Activities:
Laser science and technology; non-linear optical studies of surfaces; state-selective studies of molecule-surface interactions.

Active Projects as Principal Investigator:
Near-field scanning optical microscopy/spectroscopy study of clusters incorporated in zeolite crystals: Growth modes and quantum size effects (with XIAO, Xu Dong; TANG, Zikang)
RGC HKUST635/94P Jan 1995 - Dec 1998
RIG RI93/94.SC05 May 1994 - Apr 2001
Exploratory study of cluster doped zeolite crystals using NSOM (with XIAO, Xu Dong; TANG, Zikang)
CERG HKUST6134/97P HK$441,000 Jan 1998 - Dec 1999

Representative Recent Publications:
NELSON CUE

Professor, Associate Vice President for Academic Affairs, and Director of Advanced Materials Research Institute

(2358-7505; phcue@ust.hk)

PhD, University of Washington (1967)

Research Associate, State University of New York at Stony Brook (1968-70)

Professor of Physics (1982-90) and Chairman (1984-90), State University of New York at Albany

Current Research Activities:

X-ray optics; nanostructured materials; strong-field QED and coherent processes in aligned crystals; channeling of heavy ions; ion beam analysis; physics education.

Active Projects as Principal Investigator:

A coordinated effort on active learning in physics

RGC HKUST/17 HK$3,013,000 Jul 1995 - Jun 1998

Scanning tunneling microscopy and spectroscopy of endohedral metallofullerenes (with YANG, Shihe)

CERG HKUST6127/97P HK$446,000 Sep 1997 - Aug 1999

HKUST-SAE joint investigation of magnetic recording materials and devices


Representative Recent Publications:


**LEROY L. CHANG**

\textit{Professor and Dean of Science}

(2358-6122; aachang@ust.hk)

\textit{PhD, Stanford University (1963)}

\textit{Manager, Quantum Structures (1985-92)}

\textit{Molecular Beam Epitaxy (1975-85)}

\textit{Assoc Professor, IBM T. J. Watson Research Center, Massachusetts Institute of Technology (1968)}

**Current Research Activities:**

Semiconductor physics, materials, and devices.

**Active Projects as Principal Investigator:**

Growth and properties of InAs based III-V quantum heterostructures (with GE, Weikun; WANG, Yuqii; WANG, Jiannong)

MFG MFG94/95.SC03 HK$673,000 Sep 1995 - Feb 1999

**Representative Recent Publications:**


**CHIA-LING CHIEN**

\textit{Visiting Professor}

\textit{PhD, Carnegie Mellon University (1972)}

\textit{Professor of Physics, Johns Hopkins University (1983-)}

**Current Research Activities:**
Artificially structured solids; magnetic and superconducting nanostructures.

**Representative Recent Publications:**


**PING SHENG**

*Professor and Head of Physics Department*

(2358-7474; phsheng@ust.hk)

*PhD, Princeton University (1971)*

*Visiting Scholar, Institute for Advanced Study, Princeton (1971-73)*

*Senior Research Associate, Exxon Research and Engineering Co. (1979-95)*

**Current Research Activities:**

Physics of disordered materials; complex fluids; liquid crystals; wave localization and multiple scattering; physics of composites.

**Active Projects as Principal Investigator:**

Energy level distribution and electrical transport in metallic particle systems (with XIAO, Xu Dong)

RGC HKUST612/95P HK$839,000 Sep 1995 - Aug 1998

Advanced magnetic materials

UGC TOO96/97.SC04 HK$200,000 Jan 1997 - Jun 1997

(HKUST-CAS Joint Institute on Nanostructured Materials and Technology)

Novel liquid crystal states and phase transitions induced by microtextured substrates (with LOY, Michael M T)
Dynamic and structural simulations of amorphous solids (with SZETO, Kwok Yip)

Fifth International Conference on the Electrical Transport & Optical Properties of Inhomogeneous Media

Mathematical modeling of electric and magnetic properties of materials

Representative Recent Publications:


GEORGE K. L. WONG

Professor

(2358-7471; phgkwong@ust.hk)

PhD, University of California, Berkeley (1974)

Research Associate, University of California, Berkeley (1974)

Professor of Physics, Northwestern University (1989-91)

Current Research Activities:

Nonlinear and laser optics; nonlinear optical studies of ultra-thin molecular films; electro-optically active glassy polymeric, Langmuir-Blodgett, and complex oxide thin films; MBE growth of semiconductor heterostructures and quantum wells; linear and nonlinear optical spectroscopies of semiconductors.
Representative Recent Publications:


**CHIA-WEI WOO**

*Professor and President of the University*

(2358-6101; preswoo@ust.hk)

*PhD, Washington University (1966)*

*Asst Research Physicist, University of California, San Diego (1966-68)*

*Provost and Professor of Physics, University of California, San Diego (1979-83)*

*President and Professor of Physics, San Francisco State University (1983-88)*

**Current Research Activities:**

Quantum many-body theory; low temperature physics; surface physics; liquid crystals; technology transfer and economic development.
MING LUN YU

Professor, and Director of Materials Characterisation and Preparation Facility

(2358-7498; phmyu@ust.hk)

PhD, California Institute of Technology (1974)

Research Associate, Brookhaven National Laboratory (1973-74)

Member, Research Staff (1978-96); Manager, Analytical Research (1984-93); Senior Manager, Materials Analysis (1990-91), IBM T. J. Watson Research Center

Current Research Activities:

Superconductivity; materials analysis; ion-surface interactions; secondary ion mass spectrometry; surface reactions; field emission nanodevices.

Active Projects as Principal Investigator:

Surface morphology and molecular ion formation in secondary ion mass spectrometry

DAG DAG96/97.SC43 HK$99,000 Jan 1997 - Jun 1998

Fabrication and testing of silicon single electron transistors (with GE, Weikun; WANG, Jiannong)

CERG HKUST6086/97E HK$518,100 Nov 1997 - Oct 2000

Representative Recent Publications:


MICHAEL S. ALTMAN

Associate Professor
(2358-7478; phaltman@ust.hk)

PhD, Brown University (1988)
Alexander von Humboldt Research Fellow, Technische Universität Clausthal (1988-90)
Visiting Scientist, IBM Almaden Research Center (1990-91)

Current Research Activities:
Surface physics; epitaxial growth; surface and thin film magnetism; surface structure; low energy electron microscopy and diffraction; field emission microscopy.

Active Projects as Principal Investigator:
Surface step dynamics (with XIAO, Rong-fu)
RGC HKUST642/94 HK$556,000 Jan 1995 - Jun 1997
Flux vortex phase diagram and dynamics in high temperature superconductors (with NG, Tai Kai)
RGC HKUST623/95P HK$391,000 Dec 1995 - May 1998
Step flow growth instabilities
CERG HKUST6128/97P HK$504,000 Dec 1997 - Nov 1999
Surface/interface structure and magnetic properties of magnetic thin films (with CHAN, Che Ting; YANG, Zhi Yu)
CERG HKUST690/96P HK$531,000 Jan 1997 - Jun 1999

Representative Recent Publications:


CHE-TING CHAN

Associate Professor

(2358-7487; phchan@ust.hk)

PhD, University of California, Berkeley (1985)

Physicist, Ames Laboratory-USDOE (1992-95)

Current Research Activities:

Application of first principles in studying the electronic, structural, and other physical properties of matter; surface physics; photonic band gaps.

Active Projects as Principal Investigator:

First principles studies of intermetallic systems of industrial importance
RGC DAG95/96.SC12 HK$100,000 Nov 1995 - Apr 1997
Amorphous photonic band gap materials (with SHENG, Ping)
CERG HKUST6136/97P HK$396,000 Sep 1997 - Aug 1999
Theoretical study of the surface morphology and the growth mode of bimetallic thin films (with XIAO, Xu Dong)
CERG HKUST694/96P HK$805,000 Sep 1996 - Aug 1999

Representative Recent Publications:


KWOK KWONG FUNG

Senior Lecturer
(2358-7473; phkkfung@ust.hk)

PhD, University of Bristol (1979)

Postdoctoral Research Assistant, University of Bristol (1978-80)

Research Professor, Institute of Physics, Chinese Academy of Sciences (1986-91)

Deputy Director, Beijing Laboratory of Electron Microscopy, (1985-91)

Current Research Activities:

Characterization of crystal structures and crystal defects by transmission electron diffraction and microscopy; semiconductor nanostructures, quantum wells, and quantum dots; silicides; magnetic nanostructures, multilayers, and granular materials; C60 and graphitic nanostructures; diamond thin films; superconducting and perovskite oxides.

Active Projects as Principal Investigator:

High resolution electron microscopy study of ZnSTe-based epilayers and superlattices grown by molecular beam epitaxy
RGC HKUST621/95P HK$361,000 Oct 1995 - Dec 1997

High resolution electron microscopy study of ZnSTe-based epilayers and superlattices grown by molecular beam epitaxy (with Barber, D.J.; Altman M.S.)
RGC MFG94/95.SC02 HK$992,592 Apr 1996 - Mar 1998

High resolution transmission electron microscopy study of nanostructured magnetic materials
DAG DAG97/98.SC22 HK$73,780 Jun 1998 - Dec 1998

Representative Recent Publications:


PhD, University of Manchester (1983)

Research Associate, Institute of Semiconductors, Chinese Academy of Sciences (1984-85)

Research Associate (1988-91) and Research Assoc Professor (1991-93), Dartmouth College

Deputy Director (1985-86) and Assoc Professor (1986-88), Institute of Semiconductors, Chinese Academy of Sciences

**Current Research Activities:**

Semiconductor physics: heterostructures, nanostructures, and defects; optical properties.

**Active Projects as Principal Investigator:**

Semiconductor laser based on superior optical properties of InGaAs quantum structures embedded in AlGaAs matrix (with WU, Ronghan; WANG, Yuqi; XU, Zhongying; TORRES, Clivia M. S.)

RGC DAG96/97.SC24 HK$120,000 Dec 1996 - Nov 1997

Defect and impurity engineering of ZnS and ZnSe based materials for optical applications (with YANG, Zhi Yu; WANG, Jiannong; WONG, George K. L.; SOU, Iam Keong)

RGC HKUST615/95P HK$381,000 Oct 1995 - Mar 1998

Initiation of high impact area of nanostructure science & technology

HIA HIA96/97.SC02 HK$2,300,000 Jan 1997 - Jun 1998

Lasing from multiple energy level systems in semiconductor heterostructures—principle and practice (with CHANG, Leroy L; WANG, Jiannong; YANG, Q Rui; WANG, Yuqi)

CERG HKUST6135/97P HK$867,000 Oct 1997 - Sep 2000
Representative Recent Publications:


TAI-KAI NG

Associate Professor

(2358-7477; phtai@ust.hk)

PhD, Northwestern University (1987)

Postdoctoral Associate, Massachusetts Institute of Technology (1987-89)

Postdoctoral Associate, AT&T Bell Laboratories (1989-91)

Current Research Activities:

Mesoscopic physics; non-equilibrium quantum mechanical phenomena; quantum spin systems; strongly correlated metals.

Active Projects as Principal Investigator:

High-Tc superconductors and SU(2) Gauge Theory in 2+1 dimension (with CHU, Ming-Chung)

RGC DAG96/97.SC21 HK$80,000 Nov 1996 - Oct 1997

Magnetic responses and Flux-line lattice of ErNi2B2C

RGC DAG96/97.SC39 HK$58,100 Jan 1997 - Dec 1997
Non-magnetic impurities in quasi-one dimensional antiferromagnetic materials

CERG HKUST6143/97P HK$446,000 Sep 1997 - Aug 1999

Topological disorder in quantum hall ferromagnets and quantum spin (with LEE, Derek Kwok Kay)

JRS JRS98/40 HK$71,875 Apr 1998 - Mar 1999

**Representative Recent Publications:**


**Ng, T.K.** and Cheng, C.H. (in press) "Supersymmetry in models with strong on-site Coulomb repulsion - application to t-J model", *Phys. Rev. B (Rapid Communication).*


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**IAM KEONG SOU**

*Associate Professor*

(2358-7476; phiksou@ust.hk)

*PhD, University of Illinois, Chicago (1990)*

*Research Associate, University of Illinois, Chicago (1990-91)*

**Current Research Activities:**

Thin film growth by molecular beam epitaxy; II-VI semiconductor quantum structures; visible and UV optoelectronic devices; structural and transport properties of thin films.

**Active Projects as Principal Investigator:**

Improved MBE growth and doping control of ZnSTe alloy for short wavelength optoelectronic applications (with WONG, George K. L.)

RGC DAG96/97.SC18 HK$120,000 Aug 1996 - Nov 1997

Thermal diffusion of Al dopant in MBE-grown ZnSTe alloy
Improved MBE growth and doping control of ZnSTe alloy for short wavelength optoelectronic application (with WONG, George K L)

CERG HKUST6126/97P HK$476,000 Aug 1997 - Jul 1999

Representative Recent Publications:


**WING YIM TAM**

Associate Professor

(2358-7490; phtam@ust.hk)

PhD, University of California, Santa Barbara (1985)

Postdoctoral Research Associate, University of Texas, Austin (1985-88)

Asst Professor, University of Arizona, Tucson (1988-93)

Current Research Activities:

Fractals and chaos; dynamics of cellular structures; electrodeposition; directional solidification; complex fluids; photonic band-gap materials.

Active Projects as Principal Investigator:

Evolution of breaking foams (with SZETO, Kwok Yip)

RGC DAR96/97.SC22 HK$80,000 Nov 1996 - Oct 1998
The science and application of structured particles in electrorheological fluids and nonlinear optical materials (with SHENG, Ping)

CERG HKUST6142/97P HK$496,000 Sep 1997 - Feb 2000

**Representative Recent Publications:**


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**MICHAEL K. Y. WONG**

Associate Professor

(2358-7480; phkywong@ust.hk)

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PhD, *University of California, Los Angeles* (1986)

*Postdoctoral Research Assistant, Imperial College* (1986-89)


**Current Research Activities:**

Neural networks; complex and disordered systems; optimization; telecommunication network management; interface growth and corrosion.

**Active Projects as Principal Investigator:**

Hong Kong International Workshop on theoretical aspects of neural networks: A multi-disciplinary perspective (with YEUNG, Dit Yan; LI, Zhaoping)

LHF LHF95/96.SC01 HK$45,000 May 1997 - May 1997

Hong Kong international workshop on theoretical aspects of neural computation: A multidisciplinary perspective (TANC-97) (with YEUNG, Dit Yan)

PSCG PSCG96/97.SC03 HK$46,800 May 1997 - May 1997
Statistical dynamics of learning in information processing systems

CERG HKUST6130/97P HK$421,000 Nov 1997 - Oct 1999

Representative Recent Publications:


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**RONGFU XIAO**

Associate Professor

*PhD, University of Utah (1988)*

*Postdoctoral Research Associate, University of Alabama, Huntsville (1988-90)*

*Senior Research Associate, University of Alabama, Huntsville (1990-92)*

**Current Research Activities:**

Crystal growth; thin film deposition by laser ablation and sputtering; optoelectronic materials; Monte Carlo simulation.

**Active Projects as Principal Investigator:**

Poled-amorphous ferroelectric thin films for nonlinear optical and electric-optical applications: Growth, processing, and characterization (with WONG, George K L)

CERG HKUST687/96P HK$485,000 Oct 1996 - Sep 1998
Representative Recent Publications:


Zhu, Y.Y., Xiao, R.F., Fu, J.S. and Wong, G.K.L. (1997) "Second Harmonic Generation in Quasiperiodically Domain-Inverted Sr_{0.6}Ba_{0.4}Nb_{2}O_{6} Optical Superlattices", Optics Letters, 22(1382-4):3.

ZHIYU YANG

Associate Professor

(2358-7485; phyang@ust.hk)

PhD, Purdue University (1988)

Senior Research Scientist, North Carolina State University (1988-92)

Current Research Activities:

Optical in situ study of semiconductor surface/interface, and thin film growth; optical and electronic properties and device application of semiconductor nanostructures; properties of other mesoscopic systems; magneto-optical properties of magnetic materials; properties of polymers and liquid crystals.

Active Projects as Principal Investigator:

Reflectance difference spectroscopy study of wide band gap II-VI semiconductor surfaces and interfaces (with SOU, Iam Keong; WONG, George K. L.)


Nanostructured materials (with SHENG, Ping)


Reflectance difference spectroscopy study of semiconductor surfaces and interfaces (with WONG, Kam Sing; SOU, Iam Keong)
Representative Recent Publications:


ZHAO QING ZHANG

Associate Professor

(2358-7482; phzzhang@ust.hk)

PhD, University of Pennsylvania (1974)
Research Associate, University of Minnesota (1974-76)
Visitor, Exxon Research and Engineering Company (1992-93)
Visitor, Bartol Research Institute (1989-92)
Research Professor, Institute of Physics, Academia Sinica (1986-89)

Current Research Activities:

Many-body theory; fractals; electronic structure and transport properties in disordered systems; wave propagation and localization in random media; mesoscopic physics, photonic crystals.

Active Projects as Principal Investigator:

Light propagation in random media with gain or objects
RGC HKUST617/95P HK$331,000 Sep 1995 - Aug 1998
Propagation of electromagnetic waves in disordered media: Strong scattering and resonances
CERG HKUST6137/97P HK$446,000 Sep 1997 - Aug 2000
Lateral transport and localization behavior in layered media
CERG HKUST686/96P HK$416,000 Oct 1996 - Sep 1999
Negative remanence in magnetic nanostructures (with SZETO, Kwok Yip; YAN, Xiao)
CERG HKUST692/96P HK$566,000 Sep 1996 - Sep 1998

Representative Recent Publications:


BRADLEY A. FOREMAN
Assistant Professor
(2358-7527; phbaf@ust.hk)

PhD, Cornell University (1995)
NATO Postdoctoral Fellow, University of Essex (1995-96)

Current Research Activities:
Theoretical semiconductor physics: electrons and phonons in low-dimensional systems; effects of strain in optoelectronic devices; envelope-function theory; high-speed semiconductor lasers; fundamental concepts of quantum mechanics.

Active Projects as Principal Investigator:
Electronic boundary conditions in Lattice-Matched semiconductor heterostructures
Representative Recent Publications:


**SIDNEY C. KAN**

*Assistant Professor*

*PhD, California Institute of Technology (1991)*

*Postdoctoral Research Scientist, University of California, Berkeley (1991-93)*

**Current Research Activities:**

Device fabrication and micromachining technology; semiconductor lasers; semi-conductor heterojunction physics; integrated optics; micro-machines; fiber optic communication technology.

**Active Projects as Principal Investigator:**

1xN optical configuration switching using silicon movable integrated optical waveguides

RGC HKUST792/96E HK$474,000 Sep 1996 - Aug 1998

**Representative Recent Publications:**

PAK-WO LEUNG
Assistant Professor
(2358-7483; phleung@ust.hk)

PhD, Cornell University (1990)
Postdoctoral Research Associate, Florida State University (1990-92)

**Current Research Activities:**
Computational condensed matter physics; low dimensional strongly related fermion systems; high temperature superconductivity; Monte Carlo and numerical diagonalization techniques; applications of large scale and parallel computing in condensed matter physics.

**Active Projects as Principal Investigator:**
Large scale numerical diagonalization studies of strongly correlated electron systems using massively parallel computers
RGC HKUST619/95P HK$331,000 Jan 1996 - Jun 1998
A systematic numerical study of high temperature superconductors with a small number of charge carriers
CERG HKUST6144/97P HK$446,000 Jan 1998 - Dec 1999

**Representative Recent Publications:**


KWOK-YIP SZETO

Lecturer
(2358-7479; phszeto@ust.hk)

PhD, Massachusetts Institute of Technology (1985)
Postdoctoral Research Fellow, University of Toronto (1985-86)
KFA, Jülich (1986-87)
Research Asst Professor, York University (1987-91)

Current Research Activities:
Pattern formation in complex systems; genetic algorithms and nonlinear forecasting; quasi-crystal growth; magnetotransport and frustrated spin systems; soap froth.

Active Projects as Principal Investigator:
Application of genetic algorithm in protein folding
DAG DAG96/97.SC41 HK$78,100 Jun 1997 - Sep 1998

Representative Recent Publications:


**PhD, Tohoku University (1992)**

**Special Researcher, Photodynamics Research Centre, Institute of Physical and Chemical Research (1992-94)**

**Current Research Activities:**

Physics of nanoscale objects; growth and characterization of nano-crystals; optical, electrical, magnetic, and thermal properties of small clusters.

**Active Projects as Principal Investigator:**

Study of ZnO thin films for ultraviolet laser diode applications (with WANG, Yuqi; WONG, George K L)

CERG HKUST6132/97P HK$531,000 Sep 1997 - Aug 2000

Fabrication of monodispersed clusters and nanowires in crystalline zeolite pores (with YANG, Zhi Yu; CHAN, Che Ting)

CERG HKUST689/96P HK$520,000 Jul 1996 - Jul 1999

**Representative Recent Publications:**


**JIANNONG WANG**

*Lecturer*

(2358-7497; phjwang@ust.hk)

**PhD, University of Bristol (1990)**

**Postdoctoral Research Assistant, University of Bristol (1990-92)**
Postdoctoral Research Assistant, University of Nottingham (1992-94)

**Current Research Activities:**

Physics of semiconductor low-dimensional structures; fabrication of semiconductor nanostructures; magneto-transport and optical properties of semiconductor nanostructures; novel device applications.

**Active Projects as Principal Investigator:**

Laterally confined GaAs/InGaAs/AlAs double barrier resonant tunnelling structures (with WANG, Yuqi; GE, Weikun)

CF CF95/96.SC06 HK$562,000 May 1996 - Apr 1998

Quantum transport study of InAs self-organized islands grown on GaAs substrates by molecular beam epitaxy (with CHANG, Leroy L; FUNG, Kwok Kwong; WANG, Yuqi)

CERG HKUST695/96P HK$531,000 Nov 1996 - Aug 1999

**Representative Recent Publications:**


**XIANGRONG WANG**

Assistant Professor

(2358-7488; phxwan@ust.hk)

PhD, University of Rochester (1990)
Research Associate (1990-91) and MSI Research Fellow (1991-92), University of Minnesota

Current Research Activities:
Statistical physics and condensed matter theory: critical phenomena, fractal physics, and chemical physics.

Active Projects as Principal Investigator:
Localization of charged particles in a random magnetic field
RGC DAG96/97.SC19 HK$80,000 Dec 1996 - Nov 1997
Localization in a random magnetic field
RGC DAG96/97.SC42 HK$68,100 Jan 1997 - Dec 1997
3D Anderson localization in a magnetic field
DAG DAG97/98.SC23 HK$68,106 Mar 1998 - Feb 1999

Representative Recent Publications:


XUE-SEN WANG
Assistant Professor
(2358-7971; phwangxs@ust.hk)

Phd, University of Maryland (1990)

Current Research Activities:
Scanning tunneling microscopy studies of dielectric thin film growth on silicon, metal-insulator-semiconductor (MIS) and semiconductor-insulator-semiconductor (SIS) structures, and patterns formed by endohedral metallofullerene.

Active Projects as Principal Investigator:
STM studies of dielectric thin film on silicon and related MOS structure
DAG DAG97/98.SC24 HK$90,000 Jan 1998 - Dec 1998

Representative Recent Publications:


YUQI WANG

*Lecturer*

(2358-7495; phyuqi@ust.hk)

*PhD, Columbia University (1993)*

*Postdoctoral Research Scientist, Columbia University (1993-94)*

Current Research Activities:

Growth kinetics and surface microstructures of compound semiconductors; optical and electrical properties of semiconductor quantum structures and devices; long wavelength semiconductor lasers; wide gap III-V semiconductor materials; high-speed semiconductor devices.

Active Projects as Principal Investigator:

Quantum transport in coupled and localized two dimensional electronic systems (with WANG, Jiannong; GE, Weikun; CHANG, Leroy L.; SHENG, Ping)

RGC HKUST613/95P HK$431,000 Oct 1995 - Sep 1997

Morphology evolution of III-V semiconductor surfaces during molecular beam epitaxy (with CHANG, Leroy L)

RIG DAG96/97.SC23 HK$120,000 Dec 1996 - Jun 1998
Molecular beam epitaxial growth and characterization of GaN films on ZnO buffered sapphire substrates (with FUNG, Kwok Kwong; GE, Weikun)

CERG HKUST6131/97P HK$446,000 Oct 1997 - Sep 2000

**Representative Recent Publications:**


**KAM-SING WONG**

*Lecturer*

(2358-7475; phkswong@ust.hk)

*PhD, University of Oxford (1987)*

*Research Associate, City College of New York (1987-88)*

*Research Associate, University of Utah (1989-91)*

**Current Research Activities:**

Ultrashort pulse lasers; time-resolved spectroscopy; semiconductor and polymer physics.

**Active Projects as Principal Investigator:**

Time-resolved studies of photoexcitation dynamics and optical nonlinearities in conjugated polymers from UV to IR (with YANG, Zhi Yu)

RGC HKUST614/95P HK$401,000 Sep 1995 - Feb 1998
Ultrafast excition relaxation and dephasing in wide-gap II-VI quantum wells and microstructures


Polymer light emitting diode fabrication and study of recombination dynamics of photoluminescence quenching at polymer/metal interface (with MONKMAN, Andy P)

JRS JRS98/44 HK$72,275 Apr 1998 - Mar 1999

Representative Recent Publications:


**XU-DONG XIAO**

Assistant Professor

(2358-7494; phxudong@ust.hk)

*PhD, University of California, Berkeley (1992)*

*Postdoctoral Fellow, Lawrence Berkeley Laboratory (1993-94)*

**Current Research Activities:**

STM study of surface structure and dynamics; atomic scale study of tribology; surface diffusion; nonlinear optics.

**Active Projects as Principal Investigator:**
Single molecular optical spectroscopy with STM: C60 on Si(111)
RGC DAG95/96.SC20 HK$96,000 Jun 1996 - Jun 1997

Atomic force microscopy/frictional force microscopy (AFM/FFM) characterization of boundary lubricants for magnetic recording/retrieving applications
CERG HKUST6139/97P HK$441,000 Dec 1997 - Nov 1999

Surface diffusion of CO on Pt: A comprehensive Study (with LOY, Michael M T)
CERG HKUST684/96P HK$451,000 Sep 1996 - Aug 1999

Representative Recent Publications:


**XIAO YAN**

*Assistant Professor*

*PhD, University of Pennsylvania (1989)*

*Postdoctoral Fellow, University of Pennsylvania (1989-92)*

**Current Research Activities:**

Magnetic inhomogeneity, transport, and magnetic properties of magnetic multilayers and granular films; soft magnetic materials with potential application in recording heads, field sensors, high-frequency mini-inductors, and magnetic refrigeration devices.

**Active Projects as Principal Investigator:**
Novel magnetic thin films and its applications

RGC HKUST611/95P HK$678,000 Aug 1995 - Aug 1997

Negative remanence in magnetic nanostructures (with ZHANG, Zhaqing; SZETO, Kwok Yip)

RGC HKUST692/96P HK$566,000 Sep 1996 - Sep 1998

Representative Recent Publications:


KWONG MOW YOO

Lecturer

PhD, City University of New York (1990)

Asst Professor, City College of New York (1990-92)

Current Research Activities:

Ultrashort pulse laser; ultrafast phenomena; light scattering and imaging in random media; nonlinear optics; x-ray optics and microscopy; laser applications in medicine.

Active Projects as Principal Investigator:

Light propagation and stimulated emission in random gain media (with CUE, Nelson)

RGC HKUST624/95P HK$371,000 Aug 1995 - Dec 1997

Representative Recent Publications:

**XIXIANG ZHANG**

Assistant Professor  
(2358-7493; phxxz@ust.hk)

*PhD, Universitat de Barcelona (1992)*

*Research Scientist, Universitat de Barcelona (1992-97)*

**Active Projects as Principal Investigator:**

Surface effects on metallic iron magnetic nanoparticles  
DAG DAG97/98.SC27 HK$100,000 Mar 1998 - Mar 1999

**Representative Recent Publications:**


Pakhomov, A.B., Wong, S.K., **Yan, X.** and **Zhang, X.X.** (in press) "Dielectric relaxation conducting metal-insulator nanocomposites", *Nanostructured Materials*.

The School of Engineering

DEPARTMENT OF CHEMICAL ENGINEERING
DEPARTMENT OF CIVIL AND STRUCTURAL ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING
DEPARTMENT OF INDUSTRIAL ENGINEERING AND ENGINEERING MANAGEMENT
DEPARTMENT OF MECHANICAL ENGINEERING
Department of Chemical Engineering

Chemical Engineering has become a highly diversified engineering and science discipline which encompasses research interests ranging from aerosol to zeolite, and from conventional petrochemical processing to multi-disciplinary areas such as materials engineering, biotechnology, and environmental engineering. In addition to the fundamentals of transport, thermodynamics, kinetics, and reaction engineering, research interest in the Department of Chemical Engineering focus on five areas. They are: (1) Advanced Materials, (2) Bioprocess Engineering, (3) Environmental Engineering, (4) Electrochemical Engineering, and (5) Process Systems Engineering.

Advanced Materials: At HKUST, research efforts are being focused on novel polymers and polymer composites, polymer blends, polymer surfaces and interfaces, and advanced materials for membrane (zeolitic membranes) and sensor application. The fundamental processes such as rheology, process measurement, dynamics and control in polymer process are being studied in depth.

Bioprocess Engineering: Research efforts focus on environmental biotechnology - fungal biodegradation of pollutants, biological nitrogen and phosphorous removal, biofiltration, biodegradable plastics, soil bioremediation, coal desulfurization; Chinese traditional medicine - novel extraction, drying, and packaging; gene chips; food industries - batch processing, mathematical modeling/simulation and process control.

Environmental Engineering: Research efforts focus on air pollution formation and abatement, aerosols, deodorization of indoor air, catalytic and advanced oxidation, membrane separation and adsorption, advanced methods for the treatment of wastewater, hazardous wastes and micro-contamination, waste minimization and cleaner technologies.

Process System Engineering: Research efforts focus on developing and validating robust models of systems such as chemical and biochemical processes, environmental fate and transport, injection molding, and surface phenomena. Process control, optimization and scale-up of such processes is also an active research area.

Electrochemical Engineering: Research efforts are devoted to the development of polymer-electrolyte fuel cells and batteries by characterizing and improving the transport and reaction processes using experimental and modeling techniques. IC manufacturing technology is applied to the fabrication of a miniature device for DNA amplification and hybridization. Electrochemical methods for the efficient and economical treatment of toxic effluents are also being developed.

Facilities

The Department is equipped with state-of-the-art analytical instruments including High Performance Liquid Chromatograph; Gas Chromatographs with Mass Selective Detector, Flame Ionization Detector, Thermal Conductivity Detector, Electron Capture Detector and Atomic Emission Detector; Supercritical Fluid Extractor and Chromatograph; Organic Carbon Analyzer; Ultraviolet/Visible Spectrophotometer; Luminescence Spectrometer; Rheometrics Mechanical Spectrometer; Differential Scanning Calorimeter; Capillary
Rheometer and Universal Testing Machine.

**Research Profile**

**PO LOCK YUE**  
Professor and Department Head

**JOHN P. BARFORD**  
Visiting Professor

**CHI-MING CHAN**  
Professor

**GORDON MCKAY**  
Visiting Reader

**CHAK KEUNG CHAN**  
Assistant Professor

**GUOHUA CHEN**  
Assistant Professor

**FURONG GAO**  
Assistant Professor

**PING GAO**  
Associate Professor

**I-MING HSING**  
Assistant Professor

**XIJUN HU**  
Assistant Professor

**DAVID CHI-WAI HUI**  
Assistant Professor

**YONGLI MI**  
Assistant Professor

**JOHN F. PORTER**  
Assistant Professor
KING LUN YEUNG
Assistant Professor

JIAN YU
Assistant Professor

MING FANG
Senior Technical Program Manager
Research Profile

**PO LOCK YUE**

*Professor and Department Head*

(2358-7122; keplyue@ust.hk)

*PhD, McGill University (1971)*

*Research Fellow, University of Leeds (1970-71)*

*Reader, University of Bath (1991)*

**Current Research Activities:**

Detoxification of hazardous waste and wastewater; waste minimization and resources recovery; water purification; novel reactor engineering and applied catalysis; applications of artificial intelligence.

**Active Projects as Principal Investigator:**

A knowledge based system for minimizing environmental problems in process industries (MEPPI) (with KEAN, Alex C. Y.)

SSRI SSRC95/96.EG04 HK$337,000 Jan 1996 - Feb 1998

Areas of Excellence in electrochemical engineering

AOE AOE97/98.EG02 HK$200,000 Mar 1998 - Jun 1999

An investigation of using recycled-glass as a raw material for cement production (with CHEN, Guohua; YEUNG, King Lun)

ECWW ECWW97/98.EG01 HK$120,000 Mar 1998 - Feb 1999

Optimization of an advanced oxidation process for water and wastewater treatment (with BRAUN, Andre)

G-HK G-HK96/97.EG09 HK$30,000 Mar 1997 - Feb 1999

Photocatalytic treatment of wastewater by a novel "fountain photoreactor"

CERG HKUST668/96P HK$768,000 Jan 1997 - Dec 1999

A neural network based operational support system for the plastic industry (with WANG, X Z; GAO, Furong; MCGREAVY, Colin)

JRS JRS98/35 HK$77,100 Apr 1998 - Mar 1999

**Representative Recent Publications:**


**JOHN P. BARFORD**

*Visiting Professor*

*PhD, U.N.S.W. (1979)*

*Senior Research Scientist, Suntory Ltd., Japan (1984)*

*Visiting Professor, National University of Singapore (1988-89)*

*Assoc Professor, University of Sydney (1985- ) Department of Chemical Engineering*

**Current Research Activities:**

Biological nutrient removal; sequencing batch reactors; biofiltration; application of biosensors; bioprocess control; mathematical modelling/simulation.

**Representative Recent Publications:**


CHI-MING CHAN
Professor
(2358-7125; kecmchan@ust.hk)

PhD, California Institute of Technology (1979)
Research Fellow, California Institute of Technology (1979)
Project Manager and Senior Scientist, Raychem Corporation (1979-92)

Current Research Activities:
Polymer blends and alloys; conductive composite polymers; crosslinking of polymers; adhesion phenomena; surface and interface science.

Active Projects as Principal Investigator:
Interfacial behavior of compatibilizer in immiscible blends (with MAI, Yiu Wing)
RGC DAG96/97.EG19 HK$50,000 Oct 1996 - Mar 1998
Blending of immiscible polymers (with MAI, Yiu Wing)
RGC HKUST582/95P HK$331,000 Jan 1996 - Dec 1998
Areas of Excellence in polymer technology
AOE AOE97/98.EG01 HK$200,000 Mar 1998 - Nov 1998
The Second East-Asia Polymer Conference
CF CF97/98.EG02 HK$100,000 Oct 1997 - Jan 1999
Optical fiber lighting cables (with CHOW, Kwok Ho Eddy; LIU, Thomas)
CRC CRC96/99.EG03 HK$3,000,000 Aug 1997 - Aug 2000
The effects of sequence distribution of copolymers on surface chemical (with WONG, David; NOVAK, Bruce)
CERG HKUST6123/97P HK$546,000 Sep 1997 - Aug 1999
Representative Recent Publications:


GORDON MCKAY

*Visiting Reader*

(2358-7133; kemckayg@ust.hk)

*PhD (1970), DSc (1992), Bradford University*

*Senior Process Specialist, Project Management (1992-95)*

*Managing Director, CPE (1987-92)*

*Reader, Queen's University, Belfast (1986)*

*Project Manager, European Commission (1983-84)*

**Current Research Activities:**

Removal of pollutants from wastewater using adsorption and ozonation; production of biopolymers from crab and prawn shells and development of applications; design of safety relief systems; mass transfer modeling for multicomponent mixtures.

**Active Projects as Principal Investigator:**

Removal of color from effluents using column adsorption

RGC DAG95/96.EG05 HK$73,864 Apr 1996 - Jul 1997

Waste minimization and recovery of metals from effluents (with ALLEN, S, J.)
Development of adsorption column mass transfer model to predict the removal of pollutants in multicomponent aqueous effluents

Fluidised bed treatment of coloured effluents

Representative Recent Publications:


CHAK KEUNG CHAN

Assistant Professor

(2358-7124; keckchan@ust.hk)

**PhD, California Institute of Technology (1992)**

**Process Engineer, Ralph M Parsons Company (1991-92)**

**Current Research Activities:**

Aerosol physics and chemistry; air pollution; light scattering and spectroscopy.

**Active Projects as Principal Investigator:**

Source apportionment of particulate pollutants in Hong Kong by receptor modeling (with YEE, Terrence F.)

ECWW ECWW95/96.EG04 HK$112,500 Sep 1996 - May 1997

Source apportionment by chemical analysis of size-segregated aerosols in Hong Kong (with
PORTER, John F.; CHAN, Chi Ming

RGC HKUST585/95P HK$521,000 Dec 1995 - Nov 1998
Hygroscopic growth of pharmaceutical aerosols (with CHEN, Guohua; CHOW, Hee Lum Albert)

CERG HKUST6121/97P HK$491,000 Dec 1997 - Dec 1999
Hygroscopic properties of atmospheric aerosols

CERG HKUST665/96P HK$704,000 Jan 1997 - Dec 1999

Representative Recent Publications:


GUOHUA CHEN

Assistant Professor

(2358-7138; kechengh@ust.hk)

PhD, McGill University (1994)

Current Research Activities:

Environmental management; industrial wastewater treatment; membrane separation and membrane reactor; drying of solids.

Active Projects as Principal Investigator:

Development of a Novel membrane reactor for wastewater treatment
DAG DAG96/97.EG38 HK$91,890 Jun 1997 - Mar 1999

Non-polluting restaurants in Hong Kong (with YUE, Po Lock)

ECWW ECWW96/97.EG03 HK$120,000 Nov 1997 - Mar 1999

**Representative Recent Publications:**


Chai, X., Mi, Y., Yue, P.L. and Chen, G. (in press) "Bean Curd Wastewater Treatment by Membrane Separation", *Separations Technology*.

Chai, X., Mi, Y., Yue, P.L. and Chen, G. (in press) "Treatment of Bean Curd Wastewater by Membrane Separation", *Separation and Filtration Technology J*.

**FURONG GAO**

*Assistant Professor*

(2358-7139; kefgao@ust.hk)

*PhD, McGill University (1993)*

*Senior Research Engineer, Moldflow International Ltd. (1993-95)*

**Current Research Activities:**

Process measurement, modeling, and control; polymer processing; computer-aided design, engineering, and manufacturing (CAD/CAE/CAM); applications of neural networks, fuzzy systems, and export systems.

**Active Projects as Principal Investigator:**

Adaptive control of injection molding

MOOG MOOG001.95/96 HK$541,370 Mar 1996 - Feb 1999

A study of injection velocity profile for thermoplastics injection molding (with CHAN, Chi Ming)

CERG HKUST6116/97P HK$496,000 Dec 1997 - Dec 2000
Dynamic modelling and control of injection polymer melt temperature using both shear heating and conductive heating (with YUEN, Matthew M F; CHAN, Chi Ming)

CERG HKUST666/96P HK$566,000 Nov 1996 - Oct 1999

On-line process dynamic modelling and adaptive control of thermoplastic injection molding

MOOG MOOG96/97.EG01 US$75,154 Nov 1996 - Apr 2001

Process dynamic modeling and adaptive control of thermoplastic injection molding (with YUEN, Matthew M F; CHAN, Chi Ming)

RIG RI95/96.EG03 HK$715,280 Nov 1996 - Oct 1999

**Representative Recent Publications:**


Yang, Y. and Gao, F. (in press) "Cycle-to-cycle and within cycle adaptive control of nozzle pressure during packing-holding for thermoplastics injection molding", *Polymer Engineering and Science*.

**PING GAO**

*Associate Professor*

(2358-7126; kepgao@ust.hk)

*PhD, University of Cambridge (1990)*

*Research Associate, University of Cambridge (1990-93)*

**Current Research Activities:**

Diffusion in polymers; rheology of liquid crystalline polymers and polymer blends; cold extrusion of ultra-high molecular weight polyethylene.

**Active Projects as Principal Investigator:**

Study of microrheological behavior of poly(ethylene terephthalate) and a thermotropic liquid
crystalline polymer blend (with MI, Yongli; CHAN, Chi Ming; WONG, Chi-Ying Anthony)

CERG HKUST664/96P HK$646,000 Dec 1996 - Nov 1999

Applications of the liquid crystalline polymers to improve the processability and mechanical properties of high polyethylene

UGC RI94/95.EGO4 HK$1,004,000 Jun 1995 - Oct 1999

Representative Recent Publications:


I-MING HSING

Assistant Professor

(2358-7131; kehsing@ust.hk)

PhD, Massachusetts Institute of Technology (1997)

Current Research Activities:

Design, fabrication, and characterization of novel miniaturized devices for biological applications; Characterization, development, and simulation of proton exchange membrane fuel cell (PEMFC) systems and batteries.

Active Projects as Principal Investigator:

Development of simulation tools for chemical vapor deposition processes in the semiconductor device fabrication

DAG DAG97/98.EG12 HK$100,000 Mar 1998 - Oct 1999
Representative Recent Publications:


XIJUN HU

Assistant Professor
(2358-7134; kexhu@ust.hk)

*PhD, University of Queensland (1993)*

*Research Officer, University of Queensland (1993-94)*

*Engineer, Guangzhou R&D Base of Biotechnology (1985-88)*

**Current Research Activities:**

Multicomponent adsorption equilibrium and kinetics in porous media; gas separation, air pollution control and wastewater treatment through adsorption and catalysis; mathematical modeling and computer simulation; gas-solid reactions; development of heterogeneous catalyst by chemical vapor deposition (CVD).

**Active Projects as Principal Investigator:**

A study of fixed bed reactor for wastewater treatment by activated carbon sorption

CF CF95/96.EG06 HK$558,000 Jan 1996 - Dec 1999

Multicomponent adsorption equilibrium and kinetics of gases in heterogeneous microporous solids (with SEATON, Nigel A.)
Preparation, characterization and application of novel catalysts for wastewater treatment (with PORTER, John F.)

Adsorption equilibrium and kinetics of mixed gases in heterogeneous microporous solids

Representative Recent Publications:


Hu, X., Lei, L., Chu, H.P. and Yue, P.L. (in press) "Copper/Activated Carbon as Catalyst for Organic Wastewater Treatment", *Carbon*.


**DAVID CHI-WAI HUI**

Assistant Professor  
(2358-7137; kehui@ust.hk)

PhD, *University of Manchester Institute of Science and Technology* (1991)  

Current Research Activities:

Heat exchange network design and optimization; energy conservation; modeling, targeting and optimization of a whole chemical complex; logistic optimization of bulk chemicals; production planning; modeling and optimizing adsorption systems; modeling and optimizing reaction systems.

Active Projects as Principal Investigator:
Modeling chemical process with discontinuous functions

DAG DAG97/98.EG11 HK$100,000 Feb 1998 - Jul 1999

Representative Recent Publications:


YONGLI MI

Assistant Professor
(2358-7127; keymix@ust.hk)

PhD, Syracuse University (1991)

Research Associate, Syracuse University (1992-93)

Current Research Activities:

Gas separation with membrane processes; gas solubility and transport in glassy polymers; synthesis of novel polyimides; study of high-performance polymer blends.

Active Projects as Principal Investigator:

Advanced polyimides for microelectronic applications
CF CF95/96.EG04 HK$603,000 Sep 1995 - Aug 1998

Preparation of porous polymeric tubular membranes by extrusion/extraction method for microfiltration and ultrafiltration (with YUE, Po Lock; SHEU, Fwu-shan; CHAN, Chi Ming)
RGC HKUST584/95P HK$406,000 Jan 1996 - Dec 1998

Study of miscibility and phase behavior of polymer blends by high resolution solid state NMR / Evaluation of the mechanical properties of polymer blends (with HUANG, Yanling; WARD, I. M.)
JRS JRS96/41 HK$44,300 Jan 1997 - Dec 1997

Representative Recent Publications:


**JOHN F. PORTER**

*Assistant Professor*

*(2358-7132; kejep@ust.hk)*

*PhD, University of Bath, UK*

**Current Research Activities:**

Novel production and environmental treatment processes with emphasis on adsorption and catalysis; plasma reaction systems; waste re-use; application of computer-aided process design to waste minimisation and pollution prevention.

**Active Projects as Principal Investigator:**

Photocatalytic adsorbents for use in pollution abatement (with CHAN, Chak Keung; HU, Xijun)

CERG HKUST663/96P HK$561,000 Nov 1996 - Oct 1999

The production of novel sorbents from natural products and wastes

RIG DAG97/98.EG38 HK$100,000 Jun 1998 - Jun 2000

**Representative Recent Publications:**


KING LUN YEUNG
Assistant Professor
(2358-7123; kekyeung@ust.hk)

PhD, University of Notre Dame (1993)
Research Associate, University of Notre Dame (1993-94)
Postdoctoral Fellow, University of Notre Dame (1994-96)

Current Research Activities:
Synthesis of advanced materials for applications in thin film coating, membranes and sensors; membrane technology for waste minimization and pollution control; catalytic technology for a cleaner environment; computer-aided design of catalyst and advanced reactor design, analysis, and implementation.

Active Projects as Principal Investigator:
Zeolite technology for a cleaner environment: Synthesis methodology
RGC DAG96/97.EG33 HK$91,890 Jan 1997 - Dec 1997
Membrane technology for a cleaner environment: Synthesis and application of zeolite membranes
CERG HKUST6118/97P HK$446,000 Jan 1998 - Dec 1999
Microfabricated miniature membrane reactors for catalytic hydrogenation and oxidation (with GAVRIILIDIS, Asterios)
JRS JRS98/32 HK$61,875 Mar 1998 - Mar 1999

Representative Recent Publications:


Cheng, Y.S. and Yeung, K.L. (in press) "Preparation of supported Pd-Ag alloy membranes
by electroless plating technique", *Journal of Membrane Science*.


**JIAN YU**

Assistant Professor

(2358-7135; kejianyu@ust.hk)

*PhD, University of British Columbia (1991)*

*Industrial Postdoctoral Fellow, British Columbia Science Council (1991-92)*

*Research Fellow, University of Windsor (1993-94)*

*Asst Lecturer, Zhejiang University (1985-87)*

**Current Research Activities:**

Biotransformation and biodegradation of pollutants; enzymatic catalysis; microbial fermentation processes; natural food supplements; separation and purification of biological compounds.

**Active Projects as Principal Investigator:**

Bacterial enzyme-enhanced sulfur removal from coal

CF CF95/96.EG01 HK$263,500 Jan 1996 - Dec 1998

Heavy metal removal and recovery from industrial wastewater by living fungal mycelium

RGC DAG96/97.EG18 HK$100,000 Nov 1996 - Feb 1998

Biodegradation of dyestuffs by white-rot fungi and fungal


Kinetic studies on formation of biodegradable thermoplastics from organic acids in bacterial cells

CERG HKUST6115/97P HK$456,000 Jan 1998 - Jan 2000

**Representative Recent Publications:**

Tse, S.-W. and **Yu, J** (1997) "Flocculation of Pseudomonas with Aluminum Sulfate for


**MING FANG**

*Senior Technical Program Manager*

(2358-6916; rcmfang@ust.hk)

**PhD, University of Illinois**

**Current Research Activities:**

Catalysis; air pollution monitoring and source abatement; satellite remote sensing; coastal water studies.

**Active Projects as Principal Investigator:**

Atmospheric Research and Pollution Control Center

AOE AOE97/98.ATC01 HK$39,000 Jun 1998 - Jun 2001

Ecosystem Network for South China Sea and Coastal Regions (Hong Kong part) (with Heinke, Gary W.)

CF CF96/97.RC02 HK$1,500,000 Jul 1997 - Jun 2000

The environmental health impact of respirable atmospheric particles (with KESTER, Dana R; HSIAO, Wendy W L)

ECWW ECWW96/97.RC01 HK$1,170,600 Jan 1998 - Dec 1999

Provision of Service for Air Quality Monitoring at Tung Chung, Lantau Island (with Heinke, Gary W.)
The application of ocean optical remote sensing technology

Source apportionment of aerosols in Hong Kong and surrounding regions (with WAN, Terence S. M.; CHAN, Chak Keung)

Representative Recent Publications:


Department of Civil and Structural Engineering

The research focus of the Civil and Structural Engineering Department lies in two broad areas: infrastructural development and planning, and environmental and water resources studies. There are many subgroups under each of these two areas.

**Infrastructure Development and Planning:** Major research areas identified include construction technology and ground engineering, advanced construction material, computer aided and optimal design of structures, bridge monitoring system, tall building-system design and analysis, geotechnical engineering and soil-structure interaction, infrastructure system development and rehabilitation, transportation engineering and system planning, engineering risk management and hazard mitigation.

**Environmental Engineering:** The areas of research where civil and structural engineering play a leading role include contaminated sediment transport; physical, chemical, and biological water and waste treatment processes; mathematical models for environmental quality management; mixing and transport phenomena of pollutants in natural and artificial systems; and water resources management and engineering

**Facilities**

The following laboratories are established for instruction and research:

Computer Aid Design Lab
Structural Engineering Lab
Environmental Engineering Lab
Geotechnical Centrifuge Facility
Geotechnical Engineering Lab
Construction Materials Research Lab
Water Resources Lab
Wind Tunnel Facility
Intelligent Transport Research Lab

**Research Profile**

**WILSON H. TANG**

*Professor and Department Head*

**PAUL T. Y. CHANG**

*Professor*

**ANTHONY R. EASTHAM**

*Professor, and Associate Vice President - Research & Development*
GARY W. HEINKE
Professor and Director, Institute for Environment & Sustainable Development

HOWARD JU-CHANG HUANG
Professor

CHIH-KANG SHEN
Professor

Y. K. TUNG
Professor

JUN-SHANG KUANG
Associate Professor

CHRISTOPHER K. Y. LEUNG
Associate Professor

IRENE MAN-CHI LO
Associate Professor

NEIL COLIN MICKLEBOROUGH
Associate Professor

CHUN-MAN CHAN
Assistant Professor

CHIH-CHEN CHANG
Assistant Professor

GUANG HAO CHEN
Assistant Professor

MARK JAMES DAVIDSON
Lecturer

MOHAMED S. GHIDAOU
Assistant Professor

LAMBROS KATAFYGIOTIS
Assistant Professor
KIN-MAN LEE
Assistant Professor

XIANG-SONG LI
Assistant Professor

ZONGJIN LI
Assistant Professor

HONG KAM LO
Assistant Professor

CHARLES W. W. NG
Assistant Professor, and Associate Director of the Geotechnical Centrifuge Facility

DOUGLAS B. RIGBY
Assistant Professor

LIANFA SONG
Assistant Professor
Research Profile

WILSON H. TANG

Professor and Department Head
(2358-7152; wtang@ust.hk)

PhD, Stanford University (1969)
Professor (1980-95) and Assoc Head (1989-91), Dept of Civil Engineering, University of Illinois, Urbana-Champaign

Current Research Activities:

Risk, reliability and decision analysis of engineering systems; uncertainty modeling.

Active Projects as Principal Investigator:

Bayesian evaluation of liquefaction resistance
RGC DAG95/96.EG23 HK$73,864 Mar 1996 - Mar 1998
Areas of Excellence in natural hazard mitigation
AOE AOE97/98.0G06 HK$200,000 Mar 1998 - Dec 1999
Construction research centre - phase 1: geotechnical centrifuge modelling (with RIGBY, Douglas B.; NG, Charles W.; SHEN, Chih-Kang)
CRC CRC96/99.EG04 HK$2,300,000 May 1997 - Feb 2000
Initiation of high impact area on construction & structural engineering
HIA HIA96/97.EG03 HK$2,900,000 Jan 1997 - Jun 1998
Uncertainty and reliability evaluation methods for large-scale civil engineering systems (with TUNG, Yeou-Koung)
CERG HKUST6039/97E HK$360,000 Sep 1997 - Aug 1999
An integrated approach for landslide hazard mitigation
CERG HKUST722/96E HK$601,000 Sep 1996 - Aug 1999
Tongji University Research Fund (with EASTHAM, Anthony R; YANG, Hai)
TURF TURF97/98.EG01 HK$24,340 Jul 1997 - Indifinite

Representative Recent Publications:


**PAUL T. Y. CHANG**

*Professor*

(2358-7172; cepchang@ust.hk)

*PhD, University of California, Berkeley (1966)*

*Research Fellow, California Institute of Technology (1966-67)*

*Professor and Chair, Dept of Civil Engineering, University of Akron (1989-92)*

*Research Engineer, General Atomic Company (1968-70)*

**Current Research Activities:**

Computational methods and finite element modeling of large-scale structures; parallel engineering computation; computer-aided-design; structural health monitoring and condition assessment.

**Active Projects as Principal Investigator:**

Finite element model updating for bridges (with TO, Wai Ming; KATAFYGIOTIS, L.)
RGC HKUST6160/97E HK$490,600 1997 - 1999

An early detection technique of corrosion in reinforced concrete structures (with Li, Zongjin)

Lantau fixed crossing - Kap Shui Mun Bridge measurements of complete bridge on (A) global dynamic characteristics and (B) influence surfaces (with Chang, C.C.)
HD HD96/97.EG01 HK$260,000 Oct 1996 - Jun 1998

Second international symposium on civil infrastructure systems research (with Chang, C.C.)
An intelligent monitoring system for long-span bridges: Finite element analysis and ambient vibration studies for human bridge

Representative Recent Publications:


ANTHONY R. EASTHAM

Professor, and Associate Vice President - Research & Development

PhD, University of Surrey (1969)

Professor of Electrical and Computer Engineering (1984-96) and Assoc Dean, School of Graduate Studies & Research (1990-95), Queen's University, Canada

Current Research Activities:

High speed rail and Maglev; analysis and design of linear and rotating machines; electromagnetic numerical modeling, and transportation systems engineering.

Active Projects as Principal Investigator:

Transportation systems

UGC HIA96/97.EG04 HK$2,100,000 Jan 1997 - Jun 1998

A program for enhancing technology and economic development of Hong Kong (with LIN,
Representative Recent Publications:


GARY W. HEINKE
Professor and Director, Institute for Environment & Sustainable Development
(2358-6908; rcheinke@ust.hk)

PhD, McMaster University (1969)
Dean, Faculty of Applied Science and Engineering (1986-93)
Professor and Chair, Dept of Civil Engineering, University of Toronto (1974-84)

Current Research Activities:
Water and wastewater engineering; cold climate environmental engineering; urban infrastructure rehabilitation; waste minimization through clean production; air pollution studies; coastal ecological management.

Active Projects as Principal Investigator:
Ecosystem Network for South China Sea and Coastal Regions (Hong Kong part) (with FANG, Ming)
CF CF96/97.RC02 HK$1,500,000 Jul 1997 - Jun 2000
Capacity building for integrated coastal management in northern South China Sea (with HODGSON, Gregor)
CPR CPR/96/319 HK$18,587 Jul 1997 - indefinite

Marine biodiversity conservation at Con Dao National Park (with HODGSON, Gregor A)

Provision of Service for Air Quality Monitoring at Tung Chung, Lantau Island (with FANG, Ming)
EPD EPD97/98.RC01 HK$75,075 Aug 1997 - Dec 1999

High spatial and temporal resolution emissions inventory model for the Hong Kong and the Pearl River region (with FRIEDRICH, Rainer)

Reef check (with HODGSON, Gregor)
RBF RBF97/98.ATC01 US$50,000 Jun 1998 - May 1999

**Representative Recent Publications:**


**HOWARD JU-CHANG HUANG**

*Professor*

(2358-7165; cehoward@ust.hk)

*PhD, University of Texas, Austin (1967)*
Professor of Civil Engineering (1975-92) and Director, Environmental Research Center (1979-92), University of Missouri-Rolla

Chief Environmental Engineer, Austin, Smith & Associates Inc. (1972-73)

Current Research Activities:

Innovative water and wastewater treatment technologies; hybrid biological reactor for accelerated waste stabilization; improving primary waste treatment efficiency by sludge recycling; two-stage anaerobic reactors for treating high-sulfate industrial wastewater; calcium stripping of heavy metals from industrial wastewater.

Active Projects as Principal Investigator:

Development of a hybrid biological reactor to reduce cost and space for industrial waste treatment
HK Industry Dept. AF/173/94 HK$1,865,000 Jul 1994 - Mar 1998

Calcium stripping of heavy metals from industrial wastewater

Water treatment options to nullify the effect of pollution in Dongjiang water
HK Water Supplies Dept. WSD94/95.EGO1 HK$250,000 Jul 1995 - Aug 1997

An exploratory study of using hybrid reactor to achieve both nitrification and foaming control
DAG DAG97/98.EG36 HK$49,066 Jun 1998 - Jun 1999

An innovative way for improving removal of heavy metals and organic matter in primary wastewater treatment
DSD DSD97/98.EG01 HK$499,800 Oct 1997 - Aug 1999

Improving primary wastewater treatment by sludge recycling
CERG HKUST715/96E HK$446,000 Jan 1997 - Dec 1999

Representative Recent Publications:


CHIH-KANG SHEN
Professor
(2358-7151; ceckshen@ust.hk)

PhD, University of California, Berkeley (1965)
Professor of Civil Engineering, University of California, Davis (1967-91)

Current Research Activities:
Geotechnical engineering; soil-structure interaction, ground improvement, laboratory characterization of geotechnical material.

Active Projects as Principal Investigator:
Chinese water resources from Hong Kong perspective
RGC DAG95/96.EG16 HK$73,864 Mar 1996 - Aug 1998
An integrated approach for landslide hazard mitigation (with TANG, Wilson H.)
RGC HKUST722/96E HK$601,000 Sep 1996 - Aug 1998
A study of hydraulic fill performance in Hong Kong - Phase 2 (with LI, Xiang Song; LEE, Kin-Man)
MFG MFG94/95.EG01 HK$185,000 Nov 1995 - Jun 1997

Representative Recent Publications:


Y. K. TUNG

Professor

(2358-8764; cetung@ust.hk)

PhD, University of Texas, Austin (1980)

Professor of Statistics and Statistical Hydrologist, University of Wyoming, Laramie (1985-96)

**Current Research Activities:**

Water resources systems analysis; urban drainage and water distribution systems design; reliability and uncertainty analyses applied to water resources/water quality management and hydraulic structural designs.

**Active Projects as Principal Investigator:**

Development practical reliability evaluation approach for treating non-normal multivariate random variables


Lai Ping Road landslide investigation - Three dimensional groundwater flow computations (with NG, Charles W.)

GEO GEO97/98.EG02 HK$129,500 Jun 1998 - Jun 1999

Analysis of rainstorm characteristics in Hong Kong

CERG HKUST6035/97E HK$531,000 Jan 1998 - Dec 1999

**Representative Recent Publications:**


ASCE, 123(3):244-251.


**JUN-SHANG KUANG**

Associate Professor

(2358-7162; cejkuang@ust.hk)

*PhD, University of Hong Kong (1988)*

*PhD, University of Cambridge (1991)*

*Postdoctoral Research Assistant, University of Hong Kong (1988-89)*

**Current Research Activities:**

Tall building structures; seismic analysis and design; reinforced and prestressed concrete; strength and damage assessment of structures; bridge analysis.

**Active Projects as Principal Investigator:**

Experiment on the investigation of failure mechanism of RC cantilevers subjected to vibration (with LEUNG, Christopher K Y; TSO, Wai Keung)

BD BD97/98.EG01 HK$96,000 Jan 1998 - Dec 1999

Transfer girder systems in tall buildings: Analysis, behaviour and design

CERG HKUST6055/97E HK$435,600 Dec 1997 - Dec 1999

**Representative Recent Publications:**


CHRISTOPHER K. Y. LEUNG
Associate Professor
(2358-8183; ckleung@ust.hk)

PhD, MIT (1990)
Assoc Professor, MIT (1997-)
Asst Professor, MIT (1992-97)

Current Research Activities:
Design of fiber optic sensors; fracture mechanics of quasi-brittle materials, fiber composites; retrofitting of concrete members.

Active Projects as Principal Investigator:
Novel fiber optic crack sensor for concrete structures
DAG DAG97/98.EG13 HK$100,000 Dec 1997 - Nov 1998

Representative Recent Publications:


IRENE MAN-CII LO

Associate Professor
(2358-7157; cemclo@ust.hk)

PhD, University of Texas, Austin (1992)

Current Research Activities:

Clay liners for waste disposal facilities; remediation of contaminated soils; chemical (hazardous) waste treatment; pollutant transport and modeling in saturated and unsaturated soils; physical and chemical wastewater treatment processes; sludge treatment and disposal.

Active Projects as Principal Investigator:

New composite liners for soil contamination prevention
RGC HKUST643/95E HK$431,000 Jan 1996 - Dec 1999
Centrifuge modelling of contaminant transport through a compacted clay liner underlain by fractured soils
DAG DAG97/98.EG04 HK$50,000 Jun 1998 - May 1999
Characterization of the physical and chemical nature of sewage sludge with regard to its suitability for disposal in landfills (with POON, Chi S)
ECWW ECWW98/99.EG01 HK$150,000 Feb 1998 - Jan 2000

Representative Recent Publications:


NEIL COLIN MICKLEBOROUGH

Associate Professor
(2358-7159; ceneilm@ust.hk)

PhD, University of Tasmania (1979)
Senior Lecturer, University of New South Wales (1983-91)
Senior Bridge Design Engineer, Rankine and Hill, Consulting Engineers (1981-83)

Current Research Activities:
Prestressed and reinforced concrete; structural dynamics; bridge engineering; structural behavior; system identification; serviceability behaviour of tall reinforced concrete buildings.

Active Projects as Principal Investigator:
Methodology for structural model updating and damage detection using vibration monitoring (with KATAFYGIOTIS, Lambros)
CERG HKUST6041/97E HK$1,212,200 Oct 1997 - Mar 2000

Representative Recent Publications:


Feng, N, Mickleborough, N.C., Ghidaoui, M.S. and Chan, C.M. (1997) "The Effective Stiffness of Reinforced Concrete Flexural Members Under Service Load Conditions: Probabilistic Interpretation", American Concrete Institute Fall Convention, American Concrete Institute, Atlanta, November, pp.1-10.

CHUN-MAN CHAN
Assistant Professor
(2358-7173; cecmchan@ust.hk)

PhD, University of Waterloo (1993)

Director of Computer Operations (1987-89) and Structural Engineer (1985-87), Office of Irwin G Cantor

Current Research Activities:
Structural optimization of tall buildings; computer automated design; structural steel design; wind effects on buildings; structural stiffness and vibration control.

Active Projects as Principal Investigator:
Automatic design optimization techniques for tall structural concrete buildings (with MICKLEBOROUGH, N.; CHANG, Paul T.Y.)
RGC HKUST535/94M HK$855,000 Jan 1995 - Dec 1997
Development of a research platform for intelligent CAD systems in structural engineering (with CHANG, Paul T. Y.; YUEN, Matthew M. F.; KEAN, Alex C. Y.)
UGC RI94/95.EG06 HK$960,000 Sep 1995 - Aug 1996

Representative Recent Publications:


Mickleborough, N.C., Feng, N. and Chan, C.M. (in press) "Prediction of the Stiffness of Reinforced Concrete Shear Walls under Service Loads", Structural Journal, American Concrete Institute.

CHIH-CHEN CHANG
Assistant Professor
(2358-7201; cechang@ust.hk)

PhD, Purdue University (1993)
Asst Professor of Mechanical Engineering, Hong Kong University of Science and Technology (1993-95)

Current Research Activities:
Passive and active control of structures; wind effects on structures; dynamic measurement and system identification; health monitoring.

Active Projects as Principal Investigator:
Wind-induced vibration control of long-span bridges using multiple active tuned mass dampers (with TO, Wai Ming)
RGC HKUST647/95E HK$638,000 Jan 1996 - Dec 1998
Technology for intelligent building control using water sloshing devices (with HSU, Chin Tsau; KATAFYGIOTIS, Lambros)
UGC RI94/95.EG08 HK$622,500 Jan 1996 - Dec 1997
A distributed intelligent sensory system for the health monitoring of tall buildings (with MITA, Akira; TO, Wai Ming; CHANG, Paul T.Y.)

Representative Recent Publications:
GUANG HAO CHEN

Assistant Professor

(2358-8752; ceghchen@ust.hk)

DEng, Kyoto University (1990)
Researcher, Ursin Co. Ltd., Japan (1990-92)
Research Scientist, Dept of Civil Engineering, National University of Singapore (1992-94)
Technical Manager, Unix Co. Ltd., Japan (1990-92)

Current Research Activities:

Water and wastewater treatment; water quality control; environmental biotechnology.

Active Projects as Principal Investigator:

Development of a new high rate hybrid bioreactor for wastewater treatment
RGC DAG95/96.EG15 HK$36,933 Mar 1996 - Aug 1997
A study on water quality improvement and odor control in Shing-Mun River (with LO, Irene M. C.; HUANG, Howard J. C.; YEN, Ben Chie)
STDB STDB95/96.EG01 HK$150,000 Feb 1996 - Nov 1996
A study on improvement of river water quality using attached media
ACL ACL96/97.EG01 ?3,000,000 Nov 1996 - Apr 1999
A study of pollutant removed by benthic biofilms in open-channel systems (with CHUA, Hong)
RIG DAG96/97.EG06 HK$125,000 Nov 1996 - Sep 1998

Representative Recent Publications:


**MARK JAMES DAVIDSON**

*Lecturer*

(2358-7161; cemark@ust.hk)

*PhD, University of Canterbury (1989)*

*Research Associate, University of Cambridge (1989-92)*

**Current Research Activities:**

Environmental fluid mechanics; numerical and physical modeling of advection and dispersion phenomena, with particular reference to ocean outfall design and gas release risk assessment; unsteady friction effects in pipelines; inverse problems; non-intrusive measurement techniques (image processing); the applications of multimedia tools; information technology in engineering education.

**Active Projects as Principal Investigator:**

Plume interaction above an outfall diffuser

RGC HKUST539/94E HK$980,000 Jan 1995 - Dec 1998

**Representative Recent Publications:**


MOHAMED S. GHIDAOUI
Assistant Professor
(2358-7174; ghidaoui@ust.hk)

PhD, University of Toronto (1993)

Current Research Activities:
Mathematical modeling of environmental fluids; numerical methods of time dependent problems; inverse problems in surface and subsurface flows; unsteady energy losses in pipes and channels.

Active Projects as Principal Investigator:
Inverse problems in coupled surface and subsurface transport processes (with BEN LETAIEF, Khaled; DAVIDSON, Mark J.; SHRESTHA, Pravi)
UGC RI94/95.EG14 HK$880,500 Jan 1996 - Dec 1996
Theoretical and experimental investigation of unsteady friction in pipe flow (with MCINNIS, Duncan A; DAVIDSON, Mark J)
CERG HKUST6033/97E HK$870,100 Jan 1998 - Dec 1999
Inverse modelling in surface water quality transport problems: Contaminant source identification (with MCINNIS, Duncan A)
CERG HKUST718/96E HK$428,000 Sep 1996 - Aug 1999

Representative Recent Publications:


FENG, N, MICKLEBOROUGH, N.C., GHIDAOUI, M.S. and CHAN, C.M. (1997) "The Effective Stiffness of Reinforced Concrete Flexural Members Under Service Load Conditions:
LAMBROS KATAFYGIOTIS

Assistant Professor
(2358-8750; lambros@ust.hk)

PhD, California Institute of Technology (1991)
Asst Professor of Civil Engineering, University of Akron (1991-94)

Current Research Activities:
Structural dynamics; computational stochastic mechanics; system identification; damage detection; structural control; probabilistic structural dynamics; structural reliability; random vibrations; earthquake and wind engineering.

Active Projects as Principal Investigator:
A new damage detection methodology for civil structures using vibration monitoring (with KUANG, Jun Shang)
RGC HKUST639/95E HK$257,000 Jan 1996 - Dec 1997
Dynamic behaviour of flexible civil structures under turbulent wind

Representative Recent Publications:


KIN-MAN LEE
Assistant Professor
(2358-7158; kinman@ust.hk)

PhD, University of Western Ontario (1989)
Asst Professor of Civil Engineering, University of Western Ontario (1989-91)
Technical Consultant, K.Y. Lo Inc. (1984-91)

Current Research Activities:
Tunneling in soft ground; hydraulic filling and land reclamation; soil-structural interaction; application of geosynthetics in engineering problems; numerical modeling in geotechnical engineering.

Active Projects as Principal Investigator:
Effects of building construction on existing underground tunnels
CERG HKUST723/96E HK$728,000 Jan 1997 - Dec 1999

Representative Recent Publications:


XIANG-SONG LI
Assistant Professor
(2358-7177; xsli@ust.hk)

PhD, University of California, Davis (1990)
Adjunct Asst Professor of Civil and Environmental Engineering, University of California, Davis (1992-93)

Asso Development Engineer, University of California, Davis (1986-92)

Current Research Activities:

Soil dynamics; geotechnical earthquake engineering; constitutive modeling; computational mechanics; signal processing; instrumentation and control systems; creation of a critical state framework with a state-dependent dilatancy to model the mechanical behavior of granular soils over a wide range of densities and confining pressures; development of new techniques for material testing by utilizing modern electronic and computing technology and discovering a signature of shearing history in soils.

Active Projects as Principal Investigator:

Advanced remote damage monitor system for infrastructures (with TONG, Pin; CHANG, Paul T. Y.; LI, Zongjin)

UGC RI94/95.EG15 HK$1,612,500 Jan 1996 - Dec 1997

Examination of rotational shear effects in centrifuge

DAG DAG97/98.EG35 HK$49,066 Jun 1998 - Jun 1999

Modeling of dilative shear failure of sandy soil (with YANG, James Q.S.)

CERG HKUST721/96E HK$416,000 Jan 1997 - Dec 1999

Representative Recent Publications:


ZONGJIN LI

Assistant Professor
(2358-8751; zongjin@ust.hk)

PhD, Northwestern University (1993)
Research Associate, Dept of Civil Engineering, Northwestern University (1993-94)
Instructor, Shandong Architectural and Civil Institute, China (1982-86)

Current Research Activities:
Fiber reinforced cementitious composites; fracture and durability of concrete; non-destructive test of infrastructure; bond characterization of interface; detection of rebar corrosion in concrete.

Active Projects as Principal Investigator:
Development of light weight wall panels with a hollow section manufactured using fiber reinforced cement-based materials and the extrusion technique
JQR JQR96/97.EG01 HK$77,120 Jul 1996 - Oct 1997

Property enhancement of short fiber reinforced cementitious composites (with MAI, Yiu Wing; CHANG, Paul T. Y.)
RGC HKUST641/95E HK$897,000 Sep 1995 - Mar 1999

Advanced fiber-reinforced cement-based composites manufactured by extrusion technique (with HSU, Chin Tsau)
UGC RI94/95.EG07 HK$965,040 Nov 1995 - Nov 1997

Practical applications of Elkem Microsilica and Grace DCI in concrete
ASA ASA96/97.EG01 HK$150,000 Aug 1996 - Aug 1998

Investigation and recommendation of mosaic tile system (with LI, Xiang Song; YANG, Zhi Yu)
ASD ASD96/97.EG01 HK$976,000 Oct 1996 - Aug 1999

Deterioration detection and durability enhancement for structural concrete (with ZHANG, Tongyi; XI, Yunping)
RIG DAG96/97.EG07 HK$100,000 Dec 1996 - Oct 1998

Material characterization of high strength ready mixed concrete for the application of composite grid reinforced hybrid structures (with LEE, Ricky S. W.; LEE, Stephen K.L.;
TONG, Ping

RMC RMC97/98.EG01 HK$160,000 Sep 1997 - Aug 1999

Representative Recent Publications:


HONG KAM LO

Assistant Professor
(2358-8742; cehklo@ust.hk)

PhD, Ohio State University (1991)

Postdoctoral Researcher, Oak Ridge National Laboratory (1992)

Asst Research Engineer, Institute of Transportation Studies, University of California, Berkeley (1993-96)

Current Research Activities:
Transportation systems modeling; intelligent transportation systems; dynamic traffic assignment; traffic simulation; traffic signal control; traffic flow theory.

Active Projects as Principal Investigator:
Dynamic traffic assignment model development
Traffic signal control for over-saturated transportation networks (with YANG, Hai)
DAG DAG97/98.EG03 HK$50,000 Feb 1998 - Jan 2000 %Representative Recent Publications:


**CHARLES W. W. NG**

*Assistant Professor, and Associate Director of the Geotechnical Centrifuge Facility*

(2358-8760; cecwwng@ust.hk)

*PhD, University of Bristol (1992)*

*Postdoctoral Research Associate, University of Cambridge (1993-95)*

*Independent Consultant, Ove Arup & Partners (1995); Mott MacDonald Group (1993-)*

**Current Research Activities:**

Centrifuge modeling; numerical analysis and constitutive models; field monitoring; triaxial stress path testing of saturated and unsaturated soils; soil-structure interaction problems such as retaining walls, deep excavations and tunnels; slope stability.

**Active Projects as Principal Investigator:**

Experimental and numerical studies of multiple NATM tunnel interactions in soft ground (with LEE, Kin-Man)

RGC DAG96/97.EG37 HK$30,000 Jun 1997 - Jun 1998

Lai Ping Road landslide investigation - specialist testing of unsaturated soils

GEO GEO97/98.EG03 HK$20,000 Jun 1998 - Dec 1998

Centrifuge modelling of loose fill slopes subjected to uniaxial and biaxial earthquakes (with LI, Xiang Song)

CERG HKUST6053/97E HK$435,600 Jan 1998 - Dec 1999
Experimental and numerical studies of multiple NATM tunnel interactions in soft ground (with LEE, Kin-Man)
CERG HKUST714/96E HK$362,000 Jan 1997 - Dec 1999

Proposed Belcher Garden Redevelopment - Testing of no-fines concrete
JCP JCP97/98.EG01 HK$450,000 Apr 1998 - Dec 1999

Experimental and numerical investigation of unsaturated loose fill slope stability (with WHEELER, Simon)
JRS JRS96/39 HK$73,410 Jan 1997 - Dec 1998

The influence of weathering on soil slope stability in Hong Kong (with SUN, Min; SHEN, Chih-kang; WILLIAMS, Ian D; TANG, Wilson H.)
RIG RI95/96.EG13 HK$1,561,525 Nov 1996 - Apr 2001

Lai-Ping Road landslide investigation: Three-dimensional groundwater computation
GEO GEO97/98.EGO2 HK$129,500 Jun 1998 - Jun 1999

Representative Recent Publications:


DOUGLAS B. RIGBY
Assistant Professor
(2358-8720; cerigby@ust.hk)

PhD, University of Arizona (1996)

Current Research Activities:
Soil-structure interaction; constitutive modeling of soils and interfaces; earthquake engineering and liquefaction behavior; cyclic laboratory testing of interfaces; groundwater flow; finite element techniques.

**Active Projects as Principal Investigator:**

Constitutive modeling of saturated interfaces with application to boundary value problems

RGC DAG95/96.EG25 HK$73,864 Apr 1996 - Nov 1997

**Representative Recent Publications:**


**LIANFA SONG**

*Assistant Professor*

(2358-7885; celianfa@ust.hk)

**PhD, University of California, Los Angeles (1993)**

**Postdoctoral Research Associate, Oak Ridge National Laboratory (1995)**

**Asst Professor of Environmental Science, Beijing Normal University (1986)**

**Current Research Activities:**

Membrane separation process; physical and chemical water and wastewater treatment; colloidal phenomena; modeling of subsurface transport processes.

**Active Projects as Principal Investigator:**

Prediction of limiting permeate flux in ultrafiltration

DAG DAG96/97.EG30 HK$91,890 Jan 1997 - Mar 1999
Cake formation in crossflow membrane filtration systems (with HUANG, Howard J.C.)

CERG HKUST6054/97E HK$548,900 Oct 1997 - Sep 1999

**Representative Recent Publications:**


The Department of Computer Science has established critical mass in a number of focused research areas that are relevant to the needs of society and are pushing the forefront of research and technology in information and computer science. These areas are listed below along with topics currently under investigation in the Department:

**Software Technology:** Chinese Computing; Formal Specifications; Graphical Use Interface Design; Graphics and Multi-media Technology; Program Visualization; Requirements Engineering; Software Architecture Design; Internet Technology.

**Artificial Intelligence:** Computer Vision; Expert Systems; Image Processing; Logic Programming; Machine Learning; Natural Language and Speech Processing; Neurocomputing; Robotics.

**Computer Engineering:** Computer Architecture and Organization; Fault-Tolerant Computing; Operating Systems; Parallel and Distributed Computing; Real-Time Systems; Computer Communication and Networking; VLSI Design.

**Data and Knowledge Management:** Conceptual Modelling and Design; DBMS Internals; Distributed, Federated, and Heterogeneous Databases; Information Retrieval and Data Mining; Intelligent Knowledge-based Management Systems; Organizational Activity Support; User Level Facilities.

**Foundation of Computer Science:** Applications of Logic; Combinatorial Optimization; Computational Geometry; Graph Algorithms; Probabilistic and Randomised Algorithms.

**Facilities**

The Department is served by about 500 workstations and PCs, including those in four teaching labs: a PC lab, two Unix labs (SPARCs and Ultras) and a multi-media lab (HP Kayaks). Each teaching lab has 41 sets of computers networked together, an RGB or LCD projector, and a highspeed laser printer. In addition, the multi-media lab is equipped with professional grade amplifiers, speakers, synthesizers, top-of-the-line soundards, and 3D graphics cards. The teaching labs are upgraded frequently to keep the equipment current.

In addition, the Department runs a number of research labs. All have a number of PCs and SPARCstations and servers, and special hardware/software to support specific research. The Computer Engineering Lab has two ATM switches, a PowerHub, some wireless modems and multi-media workstations, as well as a number of notebook computers with video cameras. The Database Lab maintains various database management systems such as oracle, Sybase and Informix Dynamic Server, as well as software engineering packages like Rational and Orbix. The Game Room is for computer graphics and music research and has Integraph TDZ-2000 graphics workstations, SGI Octanes and Indigos, video-editing rack and microVideo 300 video capture boards. It also has music hardware as described in the multi-media teaching lab. The available software includes Softimage, Csound, and Sndan. The AI/Robotics/Image Processing lab has a number of multi-media computers, studio quality nonlinear digital video and audio editing systems, various sensory and computer vision equipment, and a mobile robot.

There are also specialized project labs, including the Human Language Technology Center
(with various corpora and powerful servers); the Cyberspace center with a large assortment of Internet related software (ecommerce packages, different web server software, multi-media support packages, etc.) and smartcard

**Research Profile**

**ROLAND T. CHIN**  
Professor and Department Head

**SAMUEL T. CHANSON**  
Professor and Associate Department Head; Director, Cyberspace Center

**HERBERT EDELSBRUNNER**  
Adjunct Professor

**FREDERICK H. LOCHOVSKY**  
Professor

**VINCENT Y. SHEN**  
Professor

**DERICK WOOD**  
Professor

**JUN GU**  
Reader

**TING-CHUEN PONG**  
Reader and Director, Sino Software Research Centre

**ISHFAQ AHMAD**  
Associate Professor and Director of Video Technology Center

**MORDECAI J. GOLIN**  
Associate Professor

**MOUNIR HAMDI**  
Associate Professor

**DIK LUN LEE**  
Reader

**SIU WING CHENG**
Associate Professor
HONGJUN LU
Associate Professor
HELEN C. SHEN
Associate Professor, and Associate Dean of Engineering
DIT-YAN YEUNG
Associate Professor
SUNIL ARYA
Assistant Professor
GEORGE BACIU
Assistant Professor
LEWIS CHAU
Assistant Professor
BRIAN K. W. MAK
Assistant Professor
J. DAVID MORGENTHALER
Assistant Professor
OTFRIED CHEONG
Assistant Professor
SHING CHI CHEUNG
Lecturer
MANHOI CHOI
Assistant Professor
KOK WEE GAN
Assistant Professor
JAMES W. GRAY, III
Assistant Professor
ANDREW HORNER
KAMALAKAR KARLAPALEM
Assistant Professor

ALEX KEAN
Assistant Professor

JOHN CHUNG MONG LEE
Assistant Professor

BO LI
Assistant Professor

FANGZHEN LIN
Assistant Professor

JELENA MISEC
Assistant Professor

JOGESH K. MUPPALA
Assistant Professor

TIN FOOK NGAI
Assistant Professor

DIMITRIS PAPADIAS
Assistant Professor

CHUNG-DAK SHUM
Assistant Professor

CHIEW-LAN TAI
Assistant Professor

DEKAI WU
Assistant Professor

BEAT WÜTHRICH
Assistant Professor

NEVIN LIANWEN ZHANG
Assistant Professor
Research Profile

ROLAND T. CHIN

Professor and Department Head

(2358-7009; roland@ust.hk)

PhD, University of Missouri-Columbia (1979)

Professor of Electrical and Computer Engineering, University of Wisconsin, Madison (1981-95)

Analyst, NASA Goddard Space Flight Center (1979-81)

Current Research Activities:

Computer vision; image processing; pattern recognition; digital signal processing.

Active Projects as Principal Investigator:

Areas of Excellence in internet technology

AOE AOE97/98.EG03 HK$174,100 Mar 1998 - Jun 2001

Language and speech technology research: Towards the development of a spoken translation system between English, Mandarin and Cantonese (with GAN, Kok Wee; FUNG, Pascale N; AU, Oscar C L; TING, Pang-Hsin; SHI, Bertram E; WU, Dekai)

RCA CA97/98.EG02 HK$2,000,000 Mar 1998 - Feb 2001

Initiation of high impact area of speech recognition & machine translation

HIA HIA96/97.EG02 HK$2,200,000 Jan 1997 - Jun 1998

Representative Recent Publications:


SAMUEL T. CHANSON

Professor and Associate Department Head; Director, Cyberspace Center

(2358-6982; chanson@ust.hk)

PhD, University of California, Berkeley (1975)
Professor, University of British Columbia (1975-96)

Current Research Activities:

High-speed networks (ATM) and multimedia communication; communication protocols; distributed and parallel systems; internet technologies.

Active Projects as Principal Investigator:

Cyberspace Center for Software Industry (with LEE, Dik Lun; PONG, Ting Chuen; WU, Dekai; GRAY, James W, III)
ITDC AF/253/95 HK$3,640,000 Mar 1996 - Jul 1998
Automated testing and verification of distributed object-oriented software systems (with CHEUNG, Shing Chi)
A flexible parallel load balancing system for heterogeneous computing systems and networks
SSRI SSRC95/96.EG20 HK$176,000 Jul 1996 - Jul 1997
Software support for scalable multiparty interactive multimedia applications (with KOENIG, Hartmut)
G-HK G-HK97/98.EG07 HK$25,000 Apr 1998 - Mar 1999
Fair, robust and efficient parallel and distributed processing in the intranet environment
CERG HKUST6080/97E HK$360,000 Jan 1998 - Dec 1999
Parallel Programming and Load Balancing in the Internet Environment
CERG HKUST753/96E HK$416,000 Jan 1997 - Sep 1999
Load balancing and parallel computing in multidomain systems
SSRI SSRI96/97.EG12 HK$234,000 Aug 1997 - Jan 1999
Representative Recent Publications:


HERBERT EDELSBRUNNER

Adjunct Professor

PhD, Technical University of Graz (1982)

Professor, University of Illinois, Urbana-Champaign (1990- )

Visiting Professor, Hong Kong University of Science and Technology (1994-95)

Current Research Activities:

Data structures and algorithms; computational geometry; discrete geometry; combinatorial topology; combinatorics; solid modeling; scientific computing; geometric visualization.

Active Projects as Principal Investigator:

Deformable smooth surface and volume design

National Science Foundation 1997 - 1999

Computational geometry and molecular docking

National Science Foundation 1997 - 1999

Representative Recent Publications:


FREDERICK H. LOCHOVSKY

*Professor*

(2358-6996; fred@ust.hk)

PhD, University of Toronto (1978)

Visiting Scientist, IBM Research Laboratory (1983); The Boeing Company (1997-98)

Professor of Computer Science, University of Toronto (1988-94)

**Current Research Activities:**

Information systems design; database design; data and knowledge base integration; organizational support systems; human-computer interaction; digital libraries, web technologies.

**Active Projects as Principal Investigator:**

Indexing and query processing for distributed object management (with LEE, Dik Lun)
RGC HKUST649/95E HK$517,000 Jul 1995 - Jun 1998
Finding and managing information in Distributed, Digital information Sources (with LI, Qing; DREW, Pamela A.; WUTHRICH, Beat)
CERG HKUST752/96E HK$416,000 Jan 1997 - Dec 1998

**Representative Recent Publications:**


Systems (WITS'97), WITS, Atlanta, USA, Dec 13-14, pp.51-60.

Wong, R.K., **Chau, H.L.** and **Lochovsky, F.H.** (1997) "Dynamic knowledge representation in DOOR", *IEEE Knowledge & Data Engineering Exchange Workshop (KDEX-97)*, IEEE, Newport Beach, USA, Nov 4, pp.89-96.

Wong, R.K., **Chau, H.L.** and **Lochovsky, F.H.** (1997) "The DOOR Object-Role Database Management System", working paper.

**VINCENT Y. SHEN**

*Professor*

(2358-7010; shen@ust.hk)

*PhD, Princeton University (1969)*

*Founding Head, Dept of Computer Science (1990-95)*

*Manager & Program Director, Microelectronics & Computer Technology Corp. (1985-90)*

**Current Research Activities:**

Software productivity and quality; software development environments; digital libraries.

**Active Projects as Principal Investigator:**

Chinese computing on the web and electronic commerce (with CHANSION, Samuel)

SSRI SSRI97/98.EG01 HK$991,000 Mar 1998 - Mar 2000

SinoLib: HKUST's Digital Library Research Project (with SPODICK, Edward F.; LEE, Dik Lun; WU, Dekai; CHIN, Roland T. H.; LOCHOVSKY, Frederick H.; CHANG, Min-min; GAN, Kok Wee; FONG LOCHOVSKY, Amelia C. W.; LAM, Ki Tat)

SSRI SSRC95/96.EG15 HK$377,500 Feb 1996 - Sep 1997

**DERICK WOOD**

*Professor*

(2358-6988; dwood@ust.hk)

*PhD, Leeds University (1968)*

*Professor of Computer Science, University of Western Ontario (1991-96)*
Professor of Computer Science, University of Waterloo (1982-92)

Current Research Activities:
Digital document processing; SGML, XML, and HTML; style sheets; data structures and algorithms; formal language theory.

Active Projects as Principal Investigator:

GraMa: A toolkit for the manipulation of grammars and machines
RGC DAG96/97.EG42 HK$30,000 Jun 1997 - Jun 1998
Formal specification and implementetion of a contextual layout description (with BRUGGEMANN-KLEIN, Anne)
G-HK G-HK96/97.EG08 HK$20,000 Mar 1997 - Feb 1999
Visual specification techniques for contextual layout description (with BRUGGEMANN-KLEIN, Anne)
G-HK G-HK97/98.EG02 HK$25,000 Apr 1998 - Mar 1999
GraMa: A Toolkit for the Manipulation of Grammars and Machines
CERG HKUST743/96E HK$362,000 Sep 1996 - Aug 1999

Representative Recent Publications:

JUN GU
Reader
(2358-8766; gu@ust.hk)
PhD, University of Utah (1989)

Assoc Professor and Professor, University of Calgary (1990-94)

**Current Research Activities:**

VLSI integrated circuit design; computer architecture; high-speed networking; parallel and distributed processing; operations research and combinatorial optimization.

**Active Projects as Principal Investigator:**

Computer automation system for plating lines
Machineries Int'l Ltd. HK$1,500,000 Jul 1996 - Jul 1998

A practical SAT solver (with HAMDI, Mounir)
DAG DAG96/97.EG45 HK$30,000 Jun 1997 - Jan 1999

A Practical SAT Solver (with HAMDI, Mounir)
CERG HKUST756/96E HK$362,000 Jul 1996 - Jul 1999

**Representative Recent Publications:**


**TING-CHUEN PONG**

Reader and Director, Sino Software Research Centre
(2358-6974; tcpong@ust.hk)

PhD, Virginia Polytechnic Institute and State University (1984)

Assoc Professor of Computer Science, University of Minnesota (1990-95)
Current Research Activities:
Computer vision; artificial intelligence; pattern recognition; robotics; parallel algorithms for pattern recognition and image analysis.

Active Projects as Principal Investigator:
A Bayesian approach to image segmentation and the integration of vision modules
RGC HKUST661/95E HK$257,000 Sep 1995 - Jun 1998
Color image segmentation using a Markovian framework (with LEE, Chung Mong)
CERG HKUST6072/97E HK$360,000 Dec 1997 - Nov 1999

Representative Recent Publications:


ISHFAQ AHMAD
Associate Professor and Director of Video Technology Center
(2358-6980; iahmad@ust.hk)

PhD, Syracuse University (1992)
Asst Professor, The Hong Kong University of Science and Technology (1992-97)
Researcher, NPAC (Northeast Parallel Architectures Center), Syracuse University (1990-92)

Current Research Activities:
Parallel and distributed computing; high-performance computer systems (especially networked systems) and their assessments; operating systems and software environments for parallel process; video processing and compression/decompression; high definition television distributed multimedia systems.

Active Projects as Principal Investigator:
Software-based real-time video coding using high-performance (with LIOU, Ming)
RGC HKUST759/96E HK$611,000 1996 - 1998
Mapping applications to heterogeneous computing systems using artificial genetic life and state-space pruning (with KWOK, Ricky Yu-kwong; SIEGEL, Howard Jay; MACIEJEWSKI, Anthony)

CERG HKUST6076/97E HK$360,000 Sep 1997 - Aug 1999
Efficient algorithms for compile-time scheduling of parallel programs on high-performance multiprocessor systems

CERG HKUST734/96E HK$416,000 Sep 1996 - Nov 1998

Representative Recent Publications:


MORDECAI J. GOLIN
Associate Professor
(2358-6993; golin@ust.hk)

PhD, Princeton University (1990)
Researcher, Institut National de Recherche en Informatique et en Automatique: INRIA (1990-92)

Current Research Activities:
Design and analysis of algorithms; computational geometry; combinatorics.

Active Projects as Principal Investigator:
Lopsided trees: Analyses, algorithms and applications
Representative Recent Publications:


MOUNIR HAMDI

Associate Professor

(2358-6984; hamdi@ust.hk)

PhD, University of Pittsburgh (1991)

Asst Professor, The Hong Kong University of Science and Technology (1991-97)

Research Fellow (1988-91) and Teaching Fellow (1986-88), University of Pittsburgh

Current Research Activities:

Wireless communications; high-speed networking; ATM packet switching; parallel computing; high-performance computer architectures.

Active Projects as Principal Investigator:

Wireless channel access in multimedia personal communication systems (with BEN LETAIEF, Khaled)

DAG DAG97/98.EG23 HK$49,066 Apr 1998 - Mar 1999

Representative Recent Publications:


and Distributed Systems, Korea, Nov., pp.572-577.


DIK LUN LEE
Reader
(2358-7017; dlee@ust.hk)

PhD, University of Toronto (1985)

Assoc Professor of Computer and Information Science, Ohio State University (1992-95)

Current Research Activities:
Database systems; information retrieval.

Active Projects as Principal Investigator:
File structures and search techniques for document ranking
RGC HKUST670/95E HK$257,000 Jul 1995 - Dec 1997
Information resource integration and management
SSRI SSRC95/96.EG07 HK$195,000 Jan 1996 - Dec 1996
Object caching and sharing in a multicell wireless computing environment (with NGAI, Tin Fook)
CERG HKUST6077/97E HK$360,000 Sep 1997 - Aug 1999
A Distributed Multimedia Server for Digital Libraries (with HAMIDZADEH, Babak; KARLAPALEM, Kamalakar R S)
CERG HKUST742/96E HK$416,000 Sep 1996 - Aug 1999
Information resource integration and management
SSRI SSRC96/97.EG01 HK$280,500 Jan 1997 - Dec 1998

Representative Recent Publications:


**SIU WING CHENG**

*Associate Professor*

(2358-6973; scheng@ust.hk)

*PhD, University of Minnesota (1992)*

*Instructor, University of Minnesota (1991-92)*

**Current Research Activities:**

Computational geometry; data structures; design and analysis of algorithms.

**Active Projects as Principal Investigator:**

Intersection searching for polygons and curved objects
RGC HKUST650/95E HK$331,000 Sep 1995 - Aug 1998
Area of Excellence in computational geometry
AOE AOE97/98.EG04 HK$150,000 Mar 1998 - Nov 1998
Geometric aspects of automatic generation of moulds for casting
CERG HKUST6074/97E HK$400,700 Sep 1997 - Aug 2000

**Representative Recent Publications:**


HONGJUN LU
Associate Professor
(2358-7391; luhj@ust.hk)

PhD, University of Wisconsin, Madison (1985)
Assoc Professor, National University of Singapore (1987-98)
Principal Research Scientist, Honeywell Inc. (1985-87)

Current Research Activities:
Data/knowledge base management; query processing and optimization; data warehousing and data mining; database application development and performance evaluation.

Active Projects as Principal Investigator:
Areas of Excellence in data mining/retrieval
AOE AOE97/98.EG05 HK$100,000 Mar 1998 - Jun 2001
Inter-transaction association rules and share price movement prediction
DAG DAG97/98.EG33 HK$100,000 Apr 1998 - Mar 1999

Representative Recent Publications:


HELEN C. SHEN
Associate Professor, and Associate Dean of Engineering
(2358-6987; helens@ust.hk)

PhD, University of Waterloo (1982)
Adjunct Professor of Systems Design Engineering, University of Waterloo (1995-2000)
Assoc Professor of Systems Design Engineering, University of Waterloo (1992-95)

Current Research Activities:
Computer vision; 3D modelling and reconstruction; pattern recognition; multisensor-based systems.

Active Projects as Principal Investigator:
Uncertainty management in multisensor-based robotic systems
RGC DAG96/97.EG44 HK$30,000 May 1997 - Apr 1998

Uncertainty management in multisensor-based robotic systems
RGC HKUST754/96E HK$362,000 Sep 1996 - Aug 1998

Body measurement and fabric draping for the garment industry (with YUEN, Matthew M. F.; YU, Tongxi)
UGC RI95/96.EG18 HK$695,000 Jan 1997 - Dec 1999

Representative Recent Publications:


**DIT-YAN YEUNG**

Associate Professor

(2358-6977; dyyeung@ust.hk)

PhD, University of Southern California (1989)

Asst Professor of Computer Science, Illinois Institute of Technology (1989-90)

**Current Research Activities:**

Theory and applications of machine learning, neural networks, and pattern recognition (including applications in handwriting recognition, pen-based mobile computing, biometric verification, and Markov decision problems).

**Active Projects as Principal Investigator:**

- Bayesian learning and adaptive interface for pen computing
  - CERG HKUST6081/97E HK$455,400 Aug 1997 - Jul 1999
- Spatio-temporal Deformable Models for On-line Unconstrained Handwriting Recognition (with CHIN, Roland T H)
  - CERG HKUST746/96E HK$432,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


Networks, 8(3):630-645.


SUNIL ARYA
Assistant Professor
(2358-8769; arya@ust.hk)

PhD, University of Maryland, College Park (1995)
Visiting Researcher, Max-Planck-Institut für Informatik, Saarbrücken (1993-95)

Current Research Activities:
Computational geometry; data structures; design and analysis of algorithms; combinatorics.

Active Projects as Principal Investigator:
Depth of Random Directed Acyclic Graphs
RGC DAG95/96.EG01 HK$73,864 Dec 1995 - May 1997
Proximity problems in computational geometry: Approximation Algorithms (with WOOD, Derick)
DAG DAG96/97.EG40 HK$30,000 Jun 1997 - Dec 1998
Proximity problems in computational geometry: Approximation algorithms (with WOOD, Derick)
CERG HKUST736/96E HK$362,000 Sep 1996 - Aug 1999

Representative Recent Publications:


**GEORGE BACIU**

Assistant Professor  
(2358-6995; gbaciu@ust.hk)

*PhD, University of Waterloo (1992)*

*Research Fellow, University of Waterloo (1992-93)*

**Current Research Activities:**

Computer graphics; visualization; virtual environments; robotics; graph-theoretic analysis of physical systems; entropy optimization.

**Active Projects as Principal Investigator:**

The virtual floor plan  
SSRI SSRC96/97.EG05 HK$280,500 Jan 1997 - Jun 1999

**Representative Recent Publications:**


LEWIS CHAU
Assistant Professor
(2358-6979; lewis@ust.hk)

PhD, University of California, Los Angeles (1989)
Technical Staff, IBM San Jose Research Laboratory (1989-92)

Current Research Activities:
Logic programming; formal specification of distributed systems; artificial intelligence.

Active Projects as Principal Investigator:
Towards a unified programming model for multimedia systems
DAG DAG97/98.EG22 HK$49,066 Apr 1998 - Mar 1999
Towards a Theory of Next Generation Visual Languages
CERG HKUST757/96E HK$416,000 Jul 1996 - Jun 1999

Representative Recent Publications:


BRIAN K. W. MAK
Assistant Professor
(bmak@ust.hk)
PhD, Oregon Graduate Institute of Science and Technology (1998)
Research Consultant, AT&T Labs -- Research (1997-98)

Current Research Activities:
Speech recognition; spoken language understanding; dialog modeling; machine learning.

Active Projects as Principal Investigator:
Developing a Cantonese broadcast news speech corpus
DAG DAG97/98.EG39 HK$100,000 Jun 1998 - Jun 1999

Representative Recent Publications:


J. DAVID MORGENTHALER
Assistant Professor
(2358-8772; jdm@ust.hk)

PhD, University of California, San Diego (1997)
Senior Systems Engineer, Reticular Systems, San Diego (1996-97)

Current Research Activities:
Programming tools; software development and maintenance.

**Active Projects as Principal Investigator:**

Characterizing and generalizing virtual control flow

DAG DAG97/98.EG21 HK$100,000 Jan 1998 - Feb 1999

**Representative Recent Publications:**


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**OTFRIED CHEONG**

Assistant Professor

(2358-8770; offried@ust.hk)

*PhD, Freie Universitat Berlin (1992)*

*Asst Professor, Pohang University of Science and Technology (1995-97)*

*Asst Professor, Utrecht University (1992-95)*

**Current Research Activities:**

Computational geometry and applications; combinatorial geometry.

**Active Projects as Principal Investigator:**

Non-canonical randomized incremental algorithms

DAG DAG97/98.EG15 HK$100,000 Dec 1997 - May 1999

**Representative Recent Publications:**


**SHING CHI CHEUNG**

*Lecturer*

(2358-7016; sccheung@ust.hk)

*PhD, University of London (1994)*

**Current Research Activities:**

Distributed software design and analysis; open distributed software platform; software verification; distributed multimedia systems; mobile computing.

**Active Projects as Principal Investigator:**

- Automated verification for distributed computing systems
  - RGC DAG94/95.EG15
- Automated behavior analysis technique for distributed finite-state systems
  - RGC HKUST662/95E HK$331,000 Oct 1995 - Sep 1998
- Automated testing and verification of distributed object-oriented software system
- An integrated environment for multimedia applications on heterogeneous networks (with CHANSON, Samuel; NGAI, Tin Fook)
  - SSRI SSRC95/96.EG19 HK$352,000 Jul 1996 - Oct 1997
- Techniques and support tools for analyzing distributed object-oriented systems (with KRAMER, Jeff)
  - JRS JRS96/38 HK$71,175 Jan 1997 - Dec 1997
- A multimedia architect's assistant for distributed multimedia applications
  - CERG HKUST6088/97E HK$435,600 Jan 1998 - Dec 1999
- A middleware for the authoring distributed multimedia applications (with CHANSON, Samuel)
Representative Recent Publications:


**MANHOI CHOY**

Assistant Professor

(2358-7019; choy@ust.hk)

**PhD, University of California, Santa Barbara (1994)**

**Current Research Activities:**

Parallel and distributed systems; distributed algorithms; geographical information systems.

**Active Projects as Principal Investigator:**

Design and analysis of contention sensitive synchronization protocols for parallel and distributed systems

RGC DAG95/96.EG03 HK$36,933 Jan 1996 - Dec 1997

Checkpoint recovery of distributed objects (with WONG, Man Hon; LEONG, Hong Va)

DAG DAG96/97.EG25 HK$95,000 Jan 1997 - Dec 1998

Dynamic channel allocation for wireless computing environment (with LI, Bo; YEUNG, Dit Yan)

CERG HKUST6071/97E HK$767,400 Jan 1998 - Dec 1999
Representative Recent Publications:


**Choy, M., Leong, H.V. and Wong, M.H. (in press) "Disaster Recovery Techniques for Database Systems", Communications of ACM.**


**Choy, M., Li, B. and Liu, X. (in press) "A Distributed Hybrid channel Allocation Algorithm for PCS Network", Multiaccess Mobility Teletraffic for Wireless Network 98, Kin K. Leung from att, Washington DC, Oct 23.**

**Choy, M., Leong, H.V. and Wong, M.H. (in press) "Disaster Recovery Techniques for Database Systems", Communications of the ACM.**

**KOK WEE GAN**

**Assistant Professor**

(2358-8768; gankw@ust.hk)

*PhD, National University of Singapore (1995)*

**Current Research Activities:**

Natural language processing; Chinese computing; computer-aided instructions.

**Active Projects as Principal Investigator:**

A concurrent, lexalized dependency parser for Chinese

DAG DAG96/97.EG22 HK$95,000 Dec 1996 - Dec 1998

**Representative Recent Publications:**


JAMES W. GRAY, III

Assistant Professor

PhD, University of Maryland, College Park (1992)

Computer Scientist, US Naval Research Laboratory, Washington, DC (1989-93)

Current Research Activities:

Computer security; Internet security; cryptography.

Active Projects as Principal Investigator:

Representative Recent Publications:


ANDREW HORNER

Assistant Professor

(2358-6998; horner@ust.hk)

PhD, University of Illinois, Urbana (1993)

Current Research Activities:

Computer music; audio engineering; musical acoustics; genetic algorithms.
Active Projects as Principal Investigator:
Harmonization of musical progressions with genetic algorithms
CERG HKUST6073/97E HK$395,700 Jul 1997 - Jul 2000
Instrument tone matching with double and nested FM
CERG HKUST729/96E HK$394,000 Aug 1996 - Jul 1999

Representative Recent Publications:


KAMALAKAR KARLAPALEM
Assistant Professor
(2358-6991; kamal@ust.hk)

PhD, Georgia Institute of Technology (1992)
Software Engineer, Hewlett Packard, Inc. (1989)
Software Engineer, Tata Consultancy Services, Ltd. (1987-88)

Current Research Activities:
Distributed database systems; database design; semantic data modeling; applications of active database systems; cooperative problem solving.

Active Projects as Principal Investigator:
Design and Implementation of a Distributed Activity Management System (with LOCHOVSKY, Frederick H.)
CERG HKUST747/96E HK$416,000 Sep 1996 - Aug 1999
Representative Recent Publications:


Wüthrich, B. and Karlapalem, K. (1996) "Data Mining Opportunities in Very Large Object Oriented Databases", ACM-SIGMOD Workshop on Research Issues on Data Mining and Knowledge Discovery, June.

So, S.-K., Ahmad, I. and Karlapalem, K. (in press) "Response Time Driven Multimedia Data Objects Allocation for Browsing Documents in Distributed Environments", IEEE Transactions on Knowledge and Data Engineering.


ALEX KEAN

Assistant Professor

(2358-6992; kean@ust.hk)

PhD, University of British Columbia (1992)

Current Research Activities:

Knowledge representation and reasoning.

Representative Recent Publications:

JOHN CHUNG MONG LEE
Assistant Professor

PhD, University of Minnesota (1989)

Associate Research Staff, Institute of Systems Science, National University of Singapore (1989-92)

Current Research Activities:

Computer vision; image processing; neural networks; robotics; artificial intelligence; vehicle and container number recognition systems; generalized alpha-numeric character recognition under both indoor and outdoor environments; content-based video classification and retrieval.

Active Projects as Principal Investigator:

Videobook (with JAIN, Anil; GU, Jin)
RGC DAG96/97.EG26 HK$95,000 Sep 1996 - Feb 1998
Intelligent video manipulator - Video classification, clustering & retrieval (with LI, Qing)
SSRI SSRC94/95.EG08 HK$234,000 Sep 1995 - Sep 1996
Vehicle license plate number recognition system
SSRI SSRC95/96.EG06 HK$256,600 Jan 1996 - Dec 1997
Intelligent sports video manipulator-video classification, indexing & retrieval
SSRI SSRC96/97.EG03 HK$141,500 Jan 1997 - Dec 1997

Representative Recent Publications:


BO LI
Assistant Professor
(2358-6976; bli@ust.hk)

PhD, University of Massachusetts at Amherst (1993)
Advisory Engineer, IBM Corp Networking System (1994-96)

Current Research Activities:
Mobile wireless networking supporting multimedia applications; ATM and IP internetworking; optical networks; web caching; system performance analysis and evaluation.

Active Projects as Principal Investigator:
A/I Net -- A network that integrates ATM and IP
HKTIIT HKTIIT96/97.EG01 HK$616,000 Feb 1997 - Feb 2000

Representative Recent Publications:


FANGZHEN LIN
Assistant Professor
(2358-6975; flin@ust.hk)

PhD, Stanford University (1991)
Postdoctoral Fellow, University of Toronto (1992-94)
Research Scientist, Stanford University (1991-92)
Research Scientist, University of Toronto (1994-96)

Current Research Activities:
Artificial intelligence; knowledge representations; robotics; planning.

Active Projects as Principal Investigator:
A situation calculus semantics for the prolog cut operator
RGC DAG96/97.EG34 HK$91,890 Dec 1996 - Nov 1997
A causal theory of actions
CERG HKUST6091/97E HK$435,600 Nov 1997 - Oct 1999

Representative Recent Publications:


JELENA MISIC
Assistant Professor
(2358-8767; jmisic@ust.hk)

PhD, University of Belgrade (1993)
Senior Researcher, Institute of Nuclear Sciences "VINCA" (1991-94)
Adjunct Asst Professor, University of Belgrade (1994)

Current Research Activities:
Wireless networking; high-speed networking; mobile communications and computing; parallel computer architectures; parallel algorithms, distributed computing.

Active Projects as Principal Investigator:
Generating functions approach in analysis of cell loss control mechanisms
RGC DAG95/96.EG10 HK$73,864 Feb 1996 - Dec 1996

Representative Recent Publications:


**Misic, J.** and **Chanson, S.** (1997) "Charging Schemes for ATM Networks Based on Virtual Effective Bandwidths", *IEEE INFOCOM'97*, IEEE, Kobe, Japan, April, pp.896-903.

**Misic, J.** (in press) "Unicast based Multicast Communication Algorithm in Wormhole-Routed Star Graph Interconnection Networks", *Parallel Computing*.

JOGESH K. MUPPALA
Assistant Professor
(2358-6978; muppala@ust.hk)

PhD, Duke University (1991)

Technical Staff, Software Productivity Consortium (1991-92)

Current Research Activities:

Performance evaluation; stochastic petri nets; distributed systems; client/server computing; high-speed networking.

Active Projects as Principal Investigator:

Effectiveness of web-based instructional support in teaching and learning process (with HA, Tak)
ALP ALP96/97.EG05 HK$177,000 Sep 1997 - Jan 1999
Accelerated methods for numerical solution of Markov chains
DAG DAG97/98.EG01 HK$50,000 Feb 1998 - Jan 1999
Quality of Service (QoS) management of multimedia applications and its impact on an Asynchronous Transfer Mode (ATM) networking Infrastructure (with MEER, Hermann De)
G-HK G-HK97/98.EG05 HK$24,920 Apr 1998 - Mar 1999

Representative Recent Publications:


Ge, N., Muppala, J.K. and Hamdi, M. (1997) "A Performance Model for ATM Switches with Multiple Input Queues", Sixth International Conference on Computer Communications
TIN FOOK NGAI

Assistant Professor

(2358-7014; ngai@ust.hk)

PhD, Stanford University (1992)
Technical Staff, Hewlett-Packard Laboratories (1991-93)

Current Research Activities:
Parallel processing; computer architecture; compilers; multimedia and real-time systems.

Active Projects as Principal Investigator:
A scalable, high-performance memory-promoted database system (with SHUM, Chung Dak)
RGC DAG95/96.EG02 HK$73,866 Jan 1996 - Dec 1996
Information filtering and channel management in mobile computing (with LEE, Dik Lun)
RGC DAG96/97.EG43 HK$30,000 Jun 1997 - Jun 1998
Dual-storage architecture and optimization techniques for parallel databases (with SHUM, Chung Dak)
RGC HKUST758/96E HK$362,000 Oct 1996 - Sep 1998
Information Filtering and Channel Management in Mobile Computing (with LEE, Dik Lun)
CERG HKUST749/96E HK$362,000 Jul 1996 - Jun 1999

Representative Recent Publications:
DIMITRIS PAPADIAS
Assistant Professor
(2358-6971; dimitris@ust.hk)

Current Research Activities:
Data and knowledge base systems; spatial databases; geographic information systems; constraint satisfaction algorithms; qualitative reasoning; argumentation systems; www applications.

Active Projects as Principal Investigator:
Collaborative spatial decision making on the world wide web
DAG DAG96/97.EG36 HK$91,890 Jan 1997 - Dec 1998
Collaborative spatial decision making on the World Wide Web
DAG DAG97/98.EG02 HK$50,000 Jun 1998 - Jun 1999

Representative Recent Publications:

CHUNG-DAK SHUM
Assistant Professor
(2358-6990; shum@ust.hk)
PhD, University of California, Los Angeles (1989)

Principal Engineer, NCR/Teradata Corporation (1989-92)

Current Research Activities:
Parallel database systems; main memory database systems; multimedia storage and scheduling; federated databases; query optimization; object-oriented software systems.

Active Projects as Principal Investigator:
Parallel multimedia/video disk server (NGAI, Tin Fook; CHENG, Siu Wing)
SSRI SSRC95/96.EG11 HK$352,000 Jan 1996 - Jun 1997
Dual-Storage Architecture and Optimization Techniques for Parallel Databases (with NGAI, Tin Fook)
CERG HKUST758/96E HK$362,000 Oct 1996 - Sep 1999

Representative Recent Publications:

Shum, C.D. (1997) "An Information Theoretic Approach to Aggregate Summary Table", working paper.


CHIEW-LAN TAI
Assistant Professor
(2358-7020; taicl@ust.hk)

PhD, University of Tokyo (1997)

Teaching Assistant, National University of Singapore (1988-97)

Current Research Activities:
Geometric modeling; computer graphics; medical visualization.

Active Projects as Principal Investigator:
Deformation of polyhedrons into smooth objects for design

DAG DAG97/98.EG14 HK$100,000 Apr 1998 - Sep 1999

Representative Recent Publications:


DEKAI WU

Assistant Professor
(2358-6989; dekai@ust.hk)

PhD, University of California, Berkeley (1992)

Postdoctoral Fellow, University of Toronto (1992)

Current Research Activities:

Statistical natural language learning; machine translation; language modeling; computational linguistics; cognitive modeling.

Active Projects as Principal Investigator:

Statistical acquisition of structural and lexical resources for Chinese-English machine translation

RGC HKUST659/95E HK$638,000 Jan 1996 - Dec 1998

Statistical analysis and acquisition of lexical functions (with GAN, Kok Wee)

DAG DAG96/97.EG21 HK$120,000 Jan 1997 - Dec 1998

Computationally efficient methods for statistical machine translation

CERG HKUST6094/97E HK$844,800 Jan 1998 - Dec 1999

Representative Recent Publications:


BEAT WÜTHRICH

Assistant Professor

(2358-7013; beat@ust.hk)

PhD, Swiss Federal Institute of Technology (1991)

Researcher, European Computer Industry Research Centre, Munich (1991-93)

Current Research Activities:

Data mining, managing and exploiting internet information; forecasting of financial markets.

Representative Recent Publications:


Cho, V. and Wüthrich, B. (1998) "Towards Real Time Discovery from Distributed Information Sources", *Pacific Asia Conference on Knowledge Discovery and Data Mining*, University of Melbourne, Melbourne, Apr 16, 3:26-27.

NEVIN LIANWEN ZHANG
Assistant Professor
(2358-7015; lzhang@ust.hk)

PhD, Beijing Normal University (1989)
Postdoctoral Fellow, University of Kansas (1989-90)
PhD, University of British Columbia (1994)

Current Research Activities:
Artificial intelligence; knowledge representation; Bayesian networks; decision networks; planning and control under uncertainty.

Active Projects as Principal Investigator:
Efficient planning in stochastic domains through exploiting problem characteristics
RGC DAG96/97.EG01 HK$95,000 Jan 1997 - Dec 1997
Speeding up probabilistic reasoning through the unification of Bayesian networks and rule-based systems
RGC HKUST658/95E HK$257,000 Oct 1995 - Sep 1997
A fast probabilistic inference system
SSRI SSRC95/96.EG01 HK$176,000 Jan 1996 - Jun 1997

Representative Recent Publications:


Department of Electrical and Electronic Engineering

Faculty research is concentrated on the two broad areas of microelectronics and information technology, which are further subdivided into several closely related areas. These include: microelectronics, integrated circuits design, microprocessors and instrumentation, photonics, robotics, control and CAD/CAM, signal, image and video processing, information theory, communications and networks.

Research problems being addressed in these areas include: advanced semiconductor materials preparation and characterization; radio frequency semiconductor devices; advanced integrated circuits fabrication technology; integrated sensor and transducer technology; application of electronic microfabrication techniques to electro-optical device design and fabrication; optoelectronic integrated circuits (OEIC) based on silicon technology; display technology; new optical and electro-optical materials; image coding and compressing; image processing and enhancement; video conversion, composition, and compression; real-time video signal processing; very low bit-rate video for various applications; HDTV and super HDTV; virtual reality; medical imaging; lossless and lossy data compression; coding and error control mechanisms; data encryption and system security; B-ISDN, ATM and other high speed networks; spread spectrum systems; channel propagation measurement and prediction; cellular channel allocation, frequency reuse, and spread spectrum; radio link techniques, technology and implementation; system architecture, control and networking; and universal wireless personal communication network.

Facilities

In addition to advanced computing facilities within the Department and University, EEE houses several labs for research and teaching. They are:

Advanced VLSI Design and Test Laboratory
Analog Research / Teaching Laboratory
Automatic-Control Laboratory
Biomedical Instrumentation Laboratory
Broadband-Network Laboratory
Chemical-Mechanical Polishing Laboratory
Computer-Networks and System-Integration Laboratory
Device-Characterisation Laboratory
Digital-Electronics and Microprocessor Laboratory
Electro-Optics Laboratory
Fine-line Lithographic Laboratory
Integrated Power Electronics Laboratory
Machine-Intelligence Laboratory
Optical Device-Characterization Laboratory
PC CAD Laboratory
Photonic Materials Laboratory
Robot Manipulation Laboratory
Robotics Teaching Laboratory
Sensor and Instrumentation Laboratory
Signal-Processing and Communication Laboratory
Video-Technology Laboratory
Wireless-Communication Laboratory (WCL)
Centre for Display Research
Centre for Wireless Information Technology (CenWIT)
Hongkong Telecom Institute of Information Technology (HKTIIT)
Institute of Micro Systems (IMS)
Materials Characterisation and Preparation Facility (MCPF)
Microelectronics Fabrication Facility (MFF)

Research Profile

PHILIP C. H. CHAN
Professor and Department Head

XIREN CAO
Professor

PING K. KO
Professor and Dean of Engineering

HOI-SING KWOK
Professor

MING-LEI LIOU
Director of Hongkong Telecom Institute of Information Technology

RUEY WEN LIU
Adjunct Professor

S. SIMON WONG
Assistant Professor
ZAHEED S. KARIM
Assistant Professor
WING HUNG KI
Assistant Professor
TSZ-MEI KO
Assistant Professor
JACK LAU
Assistant Professor
CURTIS C. LING
Assistant Professor
HOWARD C. LUONG
Assistant Professor
PHILIP K. T. MOK
Assistant Professor
ROSS D. MURCH
Assistant Professor
TRUONG-THAO NGUYEN
Assistant Professor
VINCENT M. C. POON
Assistant Professor
LI QIU
Assistant Professor
JIANAN QU
Assistant Professor
BERTRAM EMIL SHI
Assistant Professor
DANNY H. K. TSANG
Associate Professor
CHI-YING TSUI
Assistant Professor

LI-XIN WANG
Assistant Professor

MAN WONG
Associate Professor

SZE-FONG MARK YAU
Associate Professor

BING ZENG
Assistant Professor
Research Profile

PHILIP C. H. CHAN

Professor and Department Head
(2358-7041; eepchan@ust.hk)

PhD, University of Illinois, Urbana (1978)
IBM Postdoctoral Fellow, University of Illinois, Urbana (1978)
Principal Engineer, Design Technology (1990-91); Program Manager, Technology Development (1981-90), Intel Corporation

Current Research Activities:

Electronic design automation; VLSI devices, circuits and systems; CAD/CAE/CAM technologies; microelectronics.

Active Projects as Principal Investigator:

Integrated circuit package design and analysis program (with YUEN, Matthew M.F.; ZOHAR, Yitshak)
ASM ASM95/96.EG01 HK$580,000 Jul 1995 - Jun 1999
Electronic packaging & assembly (with YUEN, Matthew M.F.)
UGC HIA96/97.EG01 HK$2,000,000 Jan 1997 - Jun 1998
Integrated gas sensor technology (with SIN, Johnny K.O.)
RGC HKUST683/95E HK$257,000 Jan 1996 - Dec 1997
Advanced electronic packaging and assembly cooperative research centre (with LEE, Steve H.K.; LAM, David C.C.; KARIM, Zaheed S.; YUEN, Matthew M.F.; TONG, Pin)
CRC CRC96/99.EG02 HK$2,000,000 Aug 1997 - Jul 2000
Development of an electronic nose for air pollutants using an integrated gas sensors array (with TANG, Zhenan; SIN, Johnny K.O.)
DAG DAG96/97.EG46 HK$30,000 Jun 1997 - Jun 1999
Initiation of high impact area of electronic packaging & assembly (with YUEN, Matthew M.F.)
HIA HIA96/97.EG01 HK$2,000,000 Jan 1997 - Jun 1998
Deep sub-micron SOI CMOS integrated circuit technology for radio-frequency communication applications (with KO, Ping Keung; LAU, Jack)
Development of an electronic nose for air pollutants using an integrated gas sensors array
(with TANG, Zhenan; SIN, Johnny K.O.)

Representative Recent Publications:


XIREN CAO

Professor

(2358-7048; eecao@ust.hk)

PhD, Harvard University (1984)

Research Fellow, Harvard University (1984-86)

Manager and Consultant Engineer, Digital Equipment Corporation (1986-93)

Current Research Activities:

Discrete event system theory and applications; computer and communication systems; B-ISDN and ATM; system engineering; queuing theory.

Active Projects as Principal Investigator:

Center for electric energy systems
Performance study of ATM switches and its optimization with discrete event system theory

A single sample path-based Markov decision problem

Potential theory and its application to optimization of communication networks

**Representative Recent Publications:**


**PING K. KO**

*Professor and Dean of Engineering*

(2358-6952; pingko@ust.hk)

*PhD, University of California, Berkeley (1982)*

*Professor and Vice Chair of Electrical Engineering and Computer Science, University of California, Berkeley (1990-93)*

**Current Research Activities:**

High-speed VLSI devices, technology, and circuits; MOS device modeling for circuit simulation; CAD tools for integrated circuit design.

**Active Projects as Principal Investigator:**
Process modules and CAD tools for micro- and nano-fabrication (with WONG, Man; WONG, Simon S. W.; LO, Tai Chin)

UGC RI94/95.EG03 HK$2,109,000 Jul 1995 - Jun 1999

Process modules and CAD tools for micro- and nano-fabrication (with WONG, Man; WONG, Simon S. W.; LO, Tai Chin)

UGC RI94/95.EG03 HK$2,109,000 Jul 1995 - Jun 1999

High quality ultrathin oxide on polished amorphous and poly-crystalline silicon and its applications (with CHAN, John M.S.)

CERG HKUST6102/97E HK$1,211,100 Sep 1997 - Aug 2000

Representative Recent Publications:


**HOI-SING KWOK**

*Professor*

(2358-7056; eekwok@ust.hk)

*PhD, Harvard University (1978)*

*Research Fellow, University of California, Berkeley (1978-80)*


Professor of Electrical and Computer Engineering, State University of New York at Buffalo (1985-92)

Current Research Activities:
Display technologies; thin film materials; electro-optic devices.

Active Projects as Principal Investigator:
Liquid crystal display product testing and quality assurance
ITDC AF/183/96 HK$2,896,000 Sep 1996 - Aug 1999
Efficient visible light emitting diodes with laser deposited gallium nitride-based ternary semi-conducting films (with LAU, S S)
CERG HKUST763/96E HK$1,440,000 Oct 1996 - Sep 2000

Representative Recent Publications:


MING-LEI LIOU

Director of Hongkong Telecom Institute of Information Technology
(2358-7055; eeliou@ust.hk)

PhD, Stanford University (1964)

Director, Video Signal Processing Research, Bellcore (1984-92)

Supervisor, System Analysis and Design Group, AT&T Bell Labs (1979-84)

Current Research Activities:
Low bit-rate video; image compression techniques, advanced television, packet video, VLSI
architecture and implementation of signal processing systems for visual applications.

**Active Projects as Principal Investigator:**

Computing resources for research on high-performance video compression (with AHMAD, Ishfaq)
RCA CA95/96.EG01 HK$1,600,000 Feb 1996 - Oct 1998

Fractal video compression for very-low-bit-rate applications (with AU, Oscar C. L.)
RGC HKUST680/95E HK$331,000 Sep 1995 - Aug 1998

Prototyping HDTV using high-performance computing (with AHMAD, Ishfaq)
CERG HKUST6030/97E HK$435,600 Jan 1998 - Dec 1999

Software-based real-time video coding using high-performance computing (with AHMAD, Ishfaq)
CERG HKUST759/96E HK$611,000 Sep 1996 - Feb 1999

**Representative Recent Publications:**


**RUEY WEN LIU**

*Adjunct Professor*

PhD, *University of Illinois* (1960)
Professor of Electrical Engineering, University of Notre Dame (1988- )

Current Research Activities:

Network and system theory; artificial neural networks; algebraic theory of control system design; computer-aided design; signal and image processing; modeling of socio-economic systems; fault analysis; high-speed data transmission; blind signal processing; multi-channel system identification.

S. SIMON WONG

Professor

PhD, University of California, Berkeley (1983)

Professor, Stanford University (1988- )

Asst Professor, Cornell University (1985-88)

Technical Staff, Hewlett-Packard (1980-85)

Current Research Activities:

Design and fabrication of high performance integrated systems; design and technology issues related to high performance device structures, advanced inter-connection technology and multi-chip modules.

Representative Recent Publications:


JUSTIN CHUANG
Adjunct Reader

PhD, Michigan State University (1983)
Technical Staff, Bellcore (1984-93)
R&D Engineer, General Electronics R&D Center (1982-1984)

Current Research Activities:
Wireless communications, computing and networking; communications system engineering and signal processing; RF technology and engineering; transceiver design and implementation.

Representative Recent Publications:


KHALED BEN LETAIEF

Associate Professor
(2358-7064; eekhaled@ust.hk)

PhD, Purdue University (1990)
Asst Professor, University of Melbourne (1990-93)

Current Research Activities:

Wireless personal and cellular mobile communications; high-speed data transmission; wireless multimedia communications; spread spectrum and CDMA systems; multiuser detection; optical fiber communications and optical CDMA systems.

Active Projects as Principal Investigator:

Wideband wireless personal communications (with CHUANG, J.C.-I.; MURCH, R.D.; LING, C.; K.O., T.-S.; CHENG, R.S.)
HKTIIIT HKTIIT94/95.EG03 HK$2,772,485 Sep 1994 - Aug 1999
Performance evaluation and analysis of code division multiple access communications over optical fiber local area networks
RGC HKUST689/95E HK$331,000 Jan 1996 - Dec 1998
High speed transmission for wireless communications networks
RGC DAG96/97.EG47 HK$30,000 Jun 1997 - Jun 1998
Wireless Multimedia Communication Systems (with HAMDI, Mounir; LAU, Jack; MURCH, Ross D; TSUI, Chi Ying; AU, Oscar C.L.; CHENG, Roger S.K.)
HKTIIIT HKTIIT96/97.EG02 HK$2,699,000 Jul 1997 - Dec 1999
Performance characterization and analysis of ATM networks (with CAO, Xiren; HAMDI, Mounir)
CERG HKUST6026/97E HK$435,600 Jan 1998 - Dec 1999
High speed transmission for wireless communications networks
CERG HKUST769/96E HK$362,000 Jan 1997 - Dec 1999

Representative Recent Publications:


CHIN-TAU LEA

Professor
(2358-7090; eelea@ust.hk)

PhD, University of Washington (1982)
Assoc Professor of Electrical Engineering, Georgia Institute of Technology (1991-95)

Current Research Activities:
Broadband and wireless network architectures; high-speed electronic and photonic switching; network protocols.

Active Projects as Principal Investigator:
Cost-based admission and routing for broadband integrated service networks
RGC DAG95/96.EG21 HK$73,864 Feb 1996 - Aug 1997
A/I net — A network that integrates ATM and IP (with TSANG, Danny H K; LI, Bo; TSUI, Chi Ying)
HKTIIT HKTIIT96/97.EG01 HK$616,000 Feb 1997 - Feb 2000
Integrating ATM and IP
CERG HKUST6028/97E HK$1,006,500 Sep 1997 - Aug 2000

Representative Recent Publications:


Ke, K.-W. and Lea, C.-T. (in press) "Optimization of call admission in a reduced state space", *Journal of High-Speed Networks*.

**ZEXIANG LI**

Associate Professor  
(2358-7051; eezxli@ust.hk)

*PhD, University of California, Berkeley (1989)*

*Asst Professor of Computer Science, Robotics Research Laboratory, New York University (1990-92)*

**Current Research Activities:**

Robot manipulation; multifingered robotic hands; geometric analysis of robotic mechanisms; intelligent control and nonlinear systems; manufacturing.

**Active Projects as Principal Investigator:**

Intelligent manufacturing: Efficient algorithms for workpiece localization and dimensional inspection

RGC HKUST685/95E HK$531,000 Jan 1996 - Dec 1998

Initiation of designated opportunity areas of precision machining

UGC TOO96/97.EG05 HK$200,000 Jan 1997 - Jun 1997

Areas of Excellence in automation technology

AOE AOE97/98.EG08 HK$200,000 Mar 1998 - Jun 1999

Experimental studies of dextrous manipulation with the HKUST multifingered robotic hand

RIG DAG96/97.EG03 HK$100,000 Nov 1996 - Oct 1998

NC control of precision cutting machine
Representative Recent Publications:


TAI-CHIN LO

*Associate Professor and Director, Microelectronics Fabrication Center*

(2358-7212; eetclo@ust.hk)

PhD, *University of Illinois, Urbana* (1982)

*General Manager, Bipolars Inc.* (1988-90)

*Member of Technical Staff, Avantik Inc.* (1985-88)

*Research Scientist, Eastman Kodak Co.* (1982-85)

Current Research Activities:

Integrated circuit technology; electronic materials; microwave bipolar transistors and integrated circuits; semiconductor device modeling for circuit simulation.

Active Projects as Principal Investigator:

Study of Si/SiGe alloy and its device applications (with QIAN, Pei-Xin)

DAG DAG96/97.EG29 HK$100,000 Oct 1996 - Sep 1999

Representative Recent Publications:


**JOSEPH M. SCHMITT**

*Associate Professor*

(2358-8515; eeschmit@ust.hk)

PhD, Stanford University (1986)

Senior Staff Fellow, *Lasers and Modern Optics Group, National Institutes of Health* (1988-94)

*Biomedical Engineering Coordinator, Project Hope (1986-88)*

**Current Research Activities:**

Medical instrumentation; optics and opto-electronics; medical imaging; biomedical sensors; microelectronics.

**Active Projects as Principal Investigator:**

Optical-coherence microscopy for probing highly scattering materials (with MURCH, Ross D.)

RGC HKUST688/95E HK$479,000 Sep 1995 - Aug 1998

Areas of Excellence in biomed instrumentation

AOE AOE97/98.EG09 HK$200,000 Mar 1998 - Jun 2001

Biomedical Optics Facility (with LI, Xiaoyuan; YU, Nai Teng; QU, Jianan)

RCA CA97/98.EG01 HK$2,700,000 Mar 1998 - Feb 2000

**Representative Recent Publications:**


JOHNNY K. O. SIN

Associate Professor

(2358-7052; eesin@ust.hk)

PhD, University of Toronto (1988)

Senior Member of Research Staff, Philips Laboratories, New York (1988-91)

Current Research Activities:

Microelectronic devices and IC technology; power semiconductor devices and ICs; thin-film transistors; RF power devices and technology; field emission devices and integrated sensors.

Active Projects as Principal Investigator:

Establishment of an analog integrated circuits fast prototyping centre for electronic industries in Hong Kong (with MOK, Philip K. T. LUONG, Howard C.; LO, Tai Chin; KI, Wing Hung; TSUI, Chi Ying; KARIM, Zaheed S.)

ITDC AF/128/96 HK$1,600,000 Jun 1996 - Apr 1998

Low cost, high performance, high voltage SOI devices and technology using polysilicon TFT (with CHEN, Qi Xiu)

RGC DAG96/97.EG27 HK$100,000 Oct 1996 - Sep 1997

Device and circuit isolation in bulk and SOI CMOS technology (with LUONG, Howard C.)

RGC HKUST679/95E HK$572,000 Aug 1995 - Jul 1998

TFT compatible large-area field emission displays using double-gate race-track-shaped field emitters (with POON, Vincent M.C.)

CERG HKUST6001/97E HK$765,600 Sep 1997 - Aug 1999
Research program on smart power systems (with K.I., Wing Hung; WONG, Simon S.W.; TONG, Qin-Yi, MOK, Philip K.T.; LI, Zexiang)

RIG RI95/96. EG24 HK$2,149,000 Apr 1997 - Apr 2000

**Representative Recent Publications:**


**OSCAR C. AU**

**Assistant Professor**

(2358-7053; eau@ust.hk)

*PhD, Princeton University (1991)*

*Research Associate, Princeton University (1991-92)*

**Current Research Activities:**

Video and image coding and processing; fast algorithms; speech processing; speech recognition; wireless multimedia.

**Active Projects as Principal Investigator:**

Adaptive quantization and rate control for MPEG2 video applications

RGC DAG96/97. EG12 HK$75,000 Jan 1997 - Dec 1997

Temporal interpolation for video as a postprocessing technique

RGC HKUST695/95E HK$257,000 Jan 1996 - Jun 1998

Summary extraction from MPEG bitstream for quick browsing and transmission over low-bit-rate channels
Representative Recent Publications:


MANSUN CHAN
Assistant Professor
(2358-8519; mchan@ust.hk)

PhD, University of California, Berkeley (1995)

Current Research Activities:

Nanometric device physics; SOI technology for high-speed circuits; device modeling(BSIM3); automated device characterization systems.

Active Projects as Principal Investigator:

Lateral isolation methodologies in SOI CMOS technology

RGC DAG95/96.EG20 HK$73,864 Mar 1996 - Mar 1997

Technology and modeling of nanometric short-channel and narrow-width silicon MOSFET's for high speed and low power applications (with KO, Ping Keung)

CERG HKUST6005/97E HK$1,448,800 Sep 1997 - Aug 2000

Representative Recent Publications:


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**GINO CHENG**

*Assistant Professor*

(2358-8540; eegino@ust.hk)

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*PhD, University of California, Berkeley (1994)*

*Research Asst Professor, University of Southern California (1994-96)*

**Current Research Activities:**

Multimedia applications and systems; authoring; instructional technologies; computer-aided design; VLSI.

**Active Projects as Principal Investigator:**

Application specific virtual meeting places

DAG DAG97/98.EG34 HK$100,000 Jun 1998 - May 1999

**Representative Recent Publications:**


Cheng, G. (1998) "Multimedia for the Masses", *Symposium on Internet Technologies*, Hong Kong University, Hong Kong University, April.


ROGER SHU KWAN CHENG
Assistant Professor
(2358-7072; eecheng@ust.hk)

PhD, Princeton University (1991)
Asst Professor of Electrical and Computer Engineering, University of Colorado, Boulder (1991-95)

Current Research Activities:
Wireless communications; spread spectrum CDMA systems; information theory and coding; communication networks.

Active Projects as Principal Investigator:
Turbo code for wireless personal communications (with TSUI, Chi Ying)
CERG HKUST6015/97E HK$523,600 Sep 1997 - Aug 1999
CDMA Test Bed (with TSUI, Chi Ying; LING, Curtis C S)
MSHK MSHK96/97.EG01 HK$1,441,000 Feb 1997 - Aug 1998
Wireless multimedia communication systems (with BEN LETAIEF, Khaled., MURCH, Ross D., et al.)
HKIIT HKIIT96/97.EGO2 HK$2,699,000 Jul 1997 - Dec 1999

Representative Recent Publications:


KWAN FAI CHEUNG
Assistant Professor
(2358-7050; eekwan@ust.hk)

PhD, University of Washington (1988)
Postdoctoral Research Associate, University of Washington (1988)
Visiting Asst Professor, University of Washington (1990-91)
Lecturer, Chinese University of Hong Kong (1989-90)
Lecturer, City Polytechnic of Hong Kong (1988-89)

Current Research Activities:
Digital image/video compression and instrumentation; neural computation; fuzzy set theory; fuzzy logic control systems; digital communications; channel assignment algorithms.

Representative Recent Publications:


PASCALE N. FUNG
Assistant Professor
(2358-8537; pascale@ust.hk)

PhD, Columbia University (1997)

Current Research Activities:
Speech and speaker recognition; understanding and dialogue strategies in speech recognition; multilinguality in speech and language; machine translation; cross-language information processing.

Active Projects as Principal Investigator:
Accent group adaptation for robust speech recognition
DAG DAG96/97.EG54 HK$91,890 Jun 1997 - Aug 1998

Dialog and domain-specific language models for interactive voice systems on the Web (with SHI, Bertram E.)
DAG DAG97/98.EG20 HK$50,000 Feb 1998 - Jan 1999

Representative Recent Publications:


HO CHI HUANG
Assistant Professor
(2358-7046; eehuang@ust.hk)

PhD, University of Washington (1991)

Current Research Activities:
Integrated guided-wave optics; silicon-based opto-electronic technologies; CMOS AMLCD technology; ASIC design.

Active Projects as Principal Investigator:
Silicon smart spatial light modulators integrated with micro-optical elements (with KARIM, Zaheed S.)
RGC HKUST694/95E HK$476,000 Sep 1995 - Jun 1998
Planarization of liquid-crystal-on-silicon projection display and spatial light modulator with multi-level metallization and chemical-mechanical polishing (with LO, Tai Chin)
CERG HKUST773/96E HK$577,000 Sep 1996 - Jun 1999

Representative Recent Publications:


ZAHEED S. KARIM
Assistant Professor
(2358-7070; eekarim@ust.hk)

PhD, University of Southern California (1993)
Research Scientist, University of Southern California (1993)

Current Research Activities:
Optical signal processing and computing; spatial light modulators; integrated optics; optical
interconnects; computer-generated holograms; microelectronics packaging; x-ray sensors.

Active Projects as Principal Investigator:
Chip-on-Glass for liquid crystal flat panel displays (with HUANG, Ho-chi)
RGC DAG96/97.EG05 HK$125,000 Sep 1996 - Aug 1997
Chip-to-chip free-space optical interconnections
CERG HKUST6013/97E HK$360,000 Sep 1997 - Aug 1999

Representative Recent Publications:
Kalluri, S., Karim, Z., Ziari, M., Steier, W. and Dalton, L. (1997) "Integration of Polymer
Waveguide Electro-Optic Modulators and VLSI Electronics Using Standard Lithographic
Processing Techniques", OFC Proceedings, Dallas, Texas, Feb 16-18, pp.55.

for Enhanced Holographic Recoding and Readout in Bismuth Silicon Oxide", Appl. Phys.

Direct-Chip-Attach Bonded with Anisotropic Conductive Film", Materials Research Society
Proceedings:256.

Spartiotis, K., Orava, R., Epenetos, A., Schulman, T., Pyyhtia, J., Tieliang, C., Sarakinos,
M., Suni, I., Salonen, J., Karim, Z., Allison, D., Sanghera, B., Myers, M. and Jalas, P.
(1997) "A Direct X-Ray Digital Radiology System for Use in Mammography, Dental
Imaging, Fluoroscopy, and Conventional X-Ray Examinations", Proceedings of Computer
Assisted Radiology and Surgery Conference, June, Berlin, Germany, p.17.

Displays", Proceedings of the Fourth Asian Symposium on Information Display, Hong Kong,
Feb 13, pp.87-90.
WING HUNG KI
Assistant Professor
(2358-8516; eeki@ust.hk; http://www.ee.ust.hk/~eeki)

PhD, University of California, Los Angeles (1995)
Senior Design Engineer, Micro Linear, USA (1992-95)

Current Research Activities:
Analysis and design of dimmable electronic ballasts; switch mode power converters; power factor correctors; switched-capacitor power converters; fundamental research in analog integrated circuits.

Active Projects as Principal Investigator:
Research and development of dimmable electronic ballast with power factor correction front end (with MOK, Philip K. T.; SIN, Johnny K. O.)
CERG HKUST765/96E HK$914,000 Sep 1996 - Aug 1999

Representative Recent Publications:


TSZ-MEI KO
Assistant Professor
(2358-7054; eetszmei@ust.hk)

PhD, California Institute of Technology (1992)
MTS, Hughes Research Labs (1991-92)
Systems Engineer, AT&T Bell Labs (1986-89)

Current Research Activities:
Scheduling algorithms for multimedia information systems; channel assignment strategies and protocols for multi-rate wireless systems; routings and controls for ATM networks; performance of turbo-codes in wireless channels.

Active Projects as Principal Investigator:
VBR video source modeling to capture short term and long term correlations and queuing analysis in an ATM multiplexer (with YAU, Mark S. F.; TSANG, Danny H. K.; BENSAOU, Brahim)
RGC DAG96/97.EG04 HK$100,000 Dec 1996 - Nov 1997

Representative Recent Publications:
Ko, T.M. and Li, K.Y. (in press) Preliminary Examinations for the Selection of the Hong Kong Team for the International Mathematical Olympiads 1988-1997, Hong Kong Education Department, Hong Kong.
JACK LAU
Assistant Professor
(2358-7043; eejla@ust.hk)

PhD, Hong Kong University of Science and Technology (1994)

Current Research Activities:
High frequency analog integrated circuit design and magnetic sensors.

Active Projects as Principal Investigator:
Highly sensitive and low power magnetometer based on lateral carrier domain effect (with CHAN, Philip C. H.; KO, Ping Keung)
RGC HKUST681/95E HK$401,000 Nov 1995 - Oct 1997
The establishment of a consumer media laboratory for innovative home electronics technology (with K.O., Ping Keung; TSUI, Chi Ying; LING, Curtis C.S.; CHENG, Roger S.K.; CHAN, Philip C.H.; SODINI, Charles G.)
ITDC AF/264/97 HK$14,733,000 Jan 1998 - Mar 2002
System design and circuit implementation for high bit rate, multi-users indoor wireless communication for home environment (with CHENG, Roger S.K.)
High performance integrated front-end circuits with power amplifier in SOI BiCMOS technology for personal wireless communication systems (with SIN, Johnny K.O.)
CERG HKUST762/96E HK$977,000 Sep 1996 - Aug 1999

Representative Recent Publications:

CURTIS C. LING

Assistant Professor
(2358-7065; eeling@ust.hk)

PhD, University of Michigan (1993)

Current Research Activities:
High-speed integrated circuits and antennas; communications circuits and systems; micromachining techniques applied to integrated high-speed systems.

Active Projects as Principal Investigator:
Intelligent antenna circuits and systems for wireless portable handsets (with CHUANG, Justin C.)

RGC DAG96/97.EG02 HK$75,000 Sep 1996 - Sep 1997

Representative Recent Publications:


**HOWARD C. LUONG**  
Assistant Professor  
(2358-8514; eeluong@ust.hk)

*PhD, University of California, Berkeley (1994)*

**Current Research Activities:**

Low-power, low-voltage, high-speed analog integrated circuits; RF circuits for wireless communications.

**Active Projects as Principal Investigator:**

Current-mode CMOS pipelined analog-to-digital converters for low-power, low voltage, and high-speed applications  
RGC DAG96/97.EG49 HK$30,000 Jun 1997 - Jun 1998  
Design and integration of a single-chip CMOS wireless receiver (with LING, Curtis C S)  
CERG HKUST6014/97E HK$534,600 Jan 1998 - Dec 1999  
Solid-State integrated micromechanical Gyroscope (with LEE, Ricky S W)  
CERG HKUST787/96E HK$1,092,000 Oct 1996 - Mar 1999  
Current-Mode CMOS Pipelined Analog-To-Digital Converters for Low -Power, Low-Voltage, and High-Speed Applications  
CERG HKUST790/96E HK$362,000 Sep 1996 - May 1999

**Representative Recent Publications:**


**PHILIP K. T. MOK**

Assistant Professor

(2358-8517; eemok@ust.hk)

*PhD, University of Toronto (1995)*

**Current Research Activities:**

Power semiconductor devices, processing technologies and circuit design for power electronics applications; CMOS/BiCMOS circuits, devices and technologies for telecommunications applications; RF semiconductor devices, technologies and circuit design; analogue integrated circuit designs; VLSI device, technology and circuit design.

**Active Projects as Principal Investigator:**

Monolithic BiCMOS RF power amplifier

RGC DAG95/96.EG30 HK$36,933 Apr 1996 - Mar 1997

A fully integrated low-noise switching mode power converter for portable wireless telecommunication equipment (with Ki, Wing Hung)

CERG HKUST6007/97E HK$842,400 Sep 1997 - Aug 1999

A Fully Integrated Selective Epitaxial Growth BiCMOS RF Front-End Module for Wireless Communication Applications. (with NG, Wai Tung; SIN, Johnny K O)

CERG HKUST789/96E HK$362,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


ROSS D. MURCH
Assistant Professor
(2358-7044; eermurch@ust.hk)

PhD, University of Canterbury (1990)
Postdoctoral Fellow, Dundee University (1990-92)
Research Engineer, New Zealand Telecom (1987-90)

Current Research Activities:
Antenna design for mobile telephone handsets; smart antenna algorithms; propagation prediction for wireless communications.

Active Projects as Principal Investigator:
Wireless information technology cooperative research center (with TSUI, Chi Ying; BEN LETAIEF, Khaled; LING, Curtis C S; KO, Tsz Mei; CHEUNG, Kwan Fai)
CRC CRC96/99.EG01 HK$3,500,000 Jul 1997 - Jun 2000
Multi-frequency diversity antennas for wireless communication
DAG DAG97/98.EG29 HK$49,066 Apr 1998 - Mar 1999
New data acquisition and processing methods for optical coherence tomography of biological tissue (with SCHMITT, Joseph M)
CERG HKUST6002/97E HK$551,100 Aug 1997 - Jul 1999
New data acquisition and processing methods for optical coherence tomography of biological tissue (with LAN, Cong Qing)
CERG HKUST6002/97E HK$551,100 Aug 1997 - Jul 1999
Adaptive Antennas for Wireless Communications
CERG HKUST788/96E HK$416,000 Jan 1997 - Dec 1998

Representative Recent Publications:
Ng, C. L., Ben Letaif, K. and Murch, R. D. (in press) "Antenna diversity combining and
finite-tap decision feedback equalization for high-speed data transmission", *IEEE Journal on Selected Areas in Communications*.


TRUONG-THAO NGUYEN

Assistant Professor

(2358-7063; eethao@ust.hk)

*PhD, Columbia University (1993)*

*Research Scientist, Center for Telecommunications Research, Columbia University (1993)*

*Engineer, Thomson-CSF (1986-89)*

**Current Research Activities:**

High resolution analog-to-digital conversion; signal analysis and wavelets; signal and image compression.

**Active Projects as Principal Investigator:**

Sigma-delta modulation with non-linear digital correction postprocessing

RGC HKUST693/95E HK$257,000 Sep 1995 - Aug 1998

**Representative Recent Publications:**


VINCENT M. C. POON

Assistant Professor

(2358-7047; eepoon@ust.hk)

PhD, Chinese University of Hong Kong (1989)

Lecturer in Electronics Engineering, City Polytechnic of Hong Kong (1988-91)

Product Specialist, Carl Zeiss Co. Ltd. (1987-88)

Current Research Activities:

Advanced microelectronic devices: Physics, technology, modeling, characterization, design and fabrication.

Active Projects as Principal Investigator:

Porous silicon opto-electronic devices (with WONG, Man; KO, Ping Keung; SIN, Johnny K. O.)

RGC HKUST691/95E HK$257,000 Jan 1996 - Dec 1998

Porous silicon microelectronic devices (with CHAN, Philip C H; KWOK, Hoi Sing)

DAG DAG96/97.EG28 HK$100,000 Dec 1996 - Dec 1998

Layer transfer wafer bonding technology (with SIN, Johnny K O)

CERG HKUST6017/97E HK$360,000 Dec 1997 - Dec 1999

Representative Recent Publications:


Huang, Q.A., Sin, J.K.O. and Poon, M.C. (1997) "Field emission from silicon including surface quantization and


LI QIU
Assistant Professor
(2358-7067; eeqiu@ust.hk)

PhD, University of Toronto (1990)
Research Associate, Institute for Mathematics and Its Applications, University of Minnesota (1992-93)
Postdoctoral Fellow, Dept of Electrical & Computer Engineering, University of Waterloo (1992)
Visiting Scientist, Canadian Space Agency (1991)

Current Research Activities:
General systems and control theory; robust control; digital control and signal processing; control of flexible structures; motion control.

Active Projects as Principal Investigator:
Robust control of discrete time systems with $l$-infinity gap uncertainties
RGC HKUST692/95E HK$257,000 Jan 1996 - Dec 1998
Development of MATLAB toolbox for multirate sample-data control (with GU, Jun; POTVIN, Andrew F.; CHEN, Tongwen)
SSRI SSRC95/96.EG17 HK$491,000 Jul 1996 - Jun 1997
General multirate building blocks and their application in nonuniform filter banks
DAG DAG97/98.EG05 HK$50,000 Jan 1998 - Dec 1998
Optimal and Robust Control of Multirate Sampled-Data Systems
CERG HKUST784/96E HK$416,000 Sep 1996 - Aug 1999

Representative Recent Publications:


**JIANAN QU**  
*Assistant Professor*  
(2358-8541; eequ@ust.hk)

*PhD, Shanghai Institute of Optics and Mechanics, Chinese Academy of Sciences (1991)*  
*Postdoctoral Fellow, University of California, Irvine (1991-92)*  
*Staff Scientists, Ontario Laser and Lightwave Research Centre (1995-97)*  
*Research Fellow, British Columbia Cancer Research Centre (1992-94)*

**Current Research Activities:**

Applications of optics in medicine; biomedical instrumentation; analytical laser spectroscopy; laser technology and optical design.

**Active Projects as Principal Investigator:**

Concentration measurements of biological analytes by laser raman spectroscopy  
DAG DAG97/98.EG16 HK$100,000 Feb 1998 - Jul 1999

**Representative Recent Publications:**


BERTRAM EMIL SHI
Assistant Professor
(2358-7079; eebert@ust.hk)

PhD, University of California, Berkeley (1994)

Current Research Activities:
Analog VLSI neural networks; image processing; computer vision; speech recognition.

Active Projects as Principal Investigator:
Dynamical neural networks: From wetware to hardware
RGC HKUST668/95E HK$257,000 Dec 1995 - Nov 1998
Analog VLSI cellular neural networks (with STIBER, Michael D.)
RGC HKUST675/95E HK$612,000 Nov 1995 - Oct 1998
Multilingual robust speech recognition (with LI, Zhaoping; AU, Oscar C. L.; WU, Dekai)
SSRI SSRC95/96.EG05 HK$191,000 Jan 1996 - Dec 1997
Active pixel input to CMOS smart vision sensors
DAG DAG97/98.EG06 HK$50,000 Jun 1998 - May 1999
Cellular Neural Networks for Image Motion Analysis
CERG HKUST782/96E HK$508,000 Jan 1997 - Dec 1999

Representative Recent Publications:


DANNY H. K. TSANG

Associate Professor
(2358-7045; eetsang@ust.hk)

PhD, University of Pennsylvania (1989)

Current Research Activities:
BISDN/ATM networks; congestion controls; VBR video modeling; routing in high-speed networks; broadband applications; wireless ATM; next-generation internet (Diff Serv, MPLS, IP VPN).

Active Projects as Principal Investigator:
Interconnection of mobile access networks of the 3rd generation and ATM backbones (with GU, Jun; KUHN, Paul J)
G-HK G-HK96/97.EG03 HK$30,000 Mar 1997 - Aug 1999
Measurement-based Congestion Control Algorithms for ATM Networks (with MISIC, Jelena; CHANSON, Samuel; CHEUNG, Kwan Fai)
CERG HKUST780/96E HK$416,000 Jan 1997 - Dec 1998

Representative Recent Publications:


CHI-YING TSUI

Assistant Professor
(2358-7071; eetsui@ust.hk)

PhD, University of Southern California (1994)

Current Research Activities:

VLSI design and CAD algorithms for energy efficient high-performance microprocessors; power analysis and optimization of CMOS circuits; hardware/software co-design for low-power embedded systems; VLSI design for multimedia systems; wireless communication systems and high-speed network.

Active Projects as Principal Investigator:

Low power algorithmic and architectural design for the video signal processor of a portable video-phone system
RGC DAG95/96.EG28 HK$36,933 Apr 1996 - Sep 1997
A methodology of designing low power video codec for portable applications
CERG HKUST6019/97E HK$644,600 Sep 1997 - Aug 1999
Power estimation framework for designing low power mobile multimedia applications (with LUONG, Howard C)
CERG HKUST779/96E HK$468,000 Sep 1996 - Feb 1999

Representative Recent Publications:


LI-XIN WANG
Assistant Professor
(2358-7068; eewang@ust.hk)

PhD, University of Southern California (1992)
Postdoctoral Fellow, University of California, Berkeley (1992-93)

Current Research Activities:
Intelligent control; fuzzy systems; industrial process control.

Active Projects as Principal Investigator:
Intelligent control using fuzzy systems, with application to integrated planning and control of mobile robots
RGC HKUST684/95E HK$257,000 Jan 1996 - Aug 1998
Fuzzy system compensators for backlash and deadzone
CERG HKUST6003/97E HK$621,900 Jan 1998 - Dec 2000
Analysis and Design of Hierarchical Fuzzy Systems
CERG HKUST778/96E HK$416,000 Jan 1997 - Dec 1999

Representative Recent Publications:


MAN WONG

Associate Professor

(2358-7057; eemwong@ust.hk)

PhD, Stanford University (1988)

Technical Staff, Semiconductor Process and Design Center, Texas Instruments (1989-92)

Current Research Activities:

Advanced device fabrication technology; thin-film transistors and general device physics; micro-electro-mechanical systems.

Active Projects as Principal Investigator:

Areas of Excellence in sensor and actuator

AOE AOE97/98.EG07 HK$200,000 Mar 1998 - Jun 2001

The use of shape memory alloys in micro-electro-mechanical systems (with SUN, Qingping; ZOHAR, Yitshak)

CERG HKUST6027/97E HK$964,700 Dec 1997 - Dec 2000

Micro-Structure Formation Technique Using Fusion Bonding of Deposited Thin Films.(with ZOHAR, Yitshak)

CERG HKUST777/96E HK$462,000 Jan 1997 - Dec 1999

Representative Recent Publications:


SZE-FONG MARK YAU
Associate Professor
(2358-7049; eeyau@ust.hk)

PhD, University of Illinois, Urbana (1991)

Current Research Activities:
Sensor array processing; medical signal and image processing; statistical signal processing and application to inverse problems.

Active Projects as Principal Investigator:
Development of blind deconvolution technique with applications to high quality voice communication using microphone array
RGC DAG96/97.EG48 HK$30,000 Apr 1997 - Mar 1998

Development of sinogram restoration techniques for resolution improvement and limited angle/hollow projection problems in computer-aided tomography
RGC HKUST678/95E HK$331,000 Aug 1995 - Jul 1997

Investigation of visible and near-infrared spectroscopy with photoplethysmography for non-invasive bilirubin determination (with SCHMITT, Joseph M)
CERG HKUST772/96P HK$531,000 Sep 1996 - Aug 1999

Development of Blind Deconvolution Technique with Applications to High Quality Voice Communication using Microphone Array
CERG HKUST776/96E HK$362,000 Aug 1996 - Jul 1998

Representative Recent Publications:


**BING ZENG**

*Assistant Professor*

(2358-7058; eezeng@ust.hk)

*PhD, Tampere University of Technology (1991)*

*Postdoctoral Fellow, University of Toronto (1991-93)*

**Current Research Activities:**

Digital signal and image processing; linear and nonlinear digital filter design; statistical and structural approaches to signal/image processing; neural networks; image/video coding and transmission.

**Active Projects as Principal Investigator:**

Towards building universal vector quantization codebooks for image compression

RGC HKUST696/95E HK$257,000 Sep 1995 - Aug 1998

Generalized boolean filters and their applications in communications

CERG HKUST6006/97E HK$651,900 Sep 1997 - Aug 2000

**Representative Recent Publications:**


**Zeng, B.** and Venetsanopoulos, A.N. (in press) "Image Interpolation Based on Median-Type Filters", *Optical Engineering*.

Department of Industrial Engineering and Engineering Management

Four guidelines are closely followed to identify our areas of research. (1) The Department will focus its research efforts on areas of greatest interest to meet the needs and challenges of the economic communities of Hong Kong and South China. (2) We will exploit the maturing technologies that will provide the best conditions for forefront IE research. (3) The research areas will be appropriate to the university environment, and likely to yield significant advances in both academic and practical values. (4) The research work must be compatible with concentrations in the postgraduate programs. With these four guidelines in mind, we have identified the following four focused areas:

Manufacturing Systems
Engineering Management
Systems Engineering
Human Factors Engineering

Facilities

Some fundamental building blocks of IE include manufacturing processes, material handling, quality control, ergonomics, flexible manufacturing and computer applications. Based on the focus of the Department, a host of laboratories have been designed to provide our students and faculty with state-of-the-art facilities to support their research needs. The labs include:

Information System Lab
Quality Lab
Rapid Response Assembly Systems Lab
Material Handling Lab
Manufacturing Process Lab
Industrial Automation lab
Human Factors Lab
System Design Lab
Virtual Teaming/Virtual Reality Lab

Research Profile

MITCHELL M. TSENG

Professor and Department Head

HAU LEE
Adjunct Professor
OTTO CHUI-CHAU LIN

Professor and Vice-President for Research and Development
DAVID YAO

Adjunct Professor
KWOK-LEUNG TSUI

Professor
HONG CHEN

Associate Professor
NEVILLE K. S. LEE

Associate Professor
RAYMOND CHEUNG

Assistant Professor
VINCENT DUFFY

Assistant Professor
RAVINDRA S. GOONETILLEKE

Assistant Professor
AJAY JONEJA

Assistant Professor
RICHARD J. LINN

Lecturer
JIYIN LIU

Assistant Professor
LIMING LIU

Assistant Professor
HELOISA HELENA O. MARTINS SHIH

Assistant Professor
RICHARD H. Y. SO
CHUAN-JUN SU
Assistant Professor

FUGEE TSUNG
Assistant Professor

YAT-WAH WAN
Assistant Professor

BENJAMIN YEN
Assistant Professor
Research Profile

MITCHELL M. TSENG

Professor and Department Head
(2358-7901; tseng@ust.hk)

PhD, Purdue University (1975)

US Area Engineering Manager, Digital Services (1990-93);
Group Manager, Applied Intelligent Systems Group (1982-90)

Digital Equipment Corporation Manager, Manufacturing Technology, Xerox Corp. (1977-82)

Current Research Activities:

Systems design; virtual teaming; mass customization; business process reengineering; systems integration.

Active Projects as Principal Investigator:

Prototype for Hong Kong clothing accessory information network systems (HKCAINS) (with CHENG, Herbert Lap Sang; SU, Chuan-Jun)
ITDC AF/206/95 HK$943,265 Jul 1995 - Oct 1997
Design for mass customization of power supply products
CPI CPI95/96.EG01 HK$266,500 Jan 1996 - Dec 1997
Design for mass customization of power supply products - phase II (with JIAO, Jianxin; DU, Xuehong)
CPI CPI96/97.EG01 HK$294,000 Jan 1997 - Dec 1999
Global Collaboration for Supply Chain Management
FIGL FIGL96/97.EG01 US$11,384 Jan 1997 - Dec 1998
Strategic decision framework for starting automotive manufacturing operations in China with design and manufacturing considerations (with GUO, Wei; WANG, Xianyun)
FMC FMC96/97.EG01 US$55,000 Aug 1996 - Dec 1999
A design approach for mass customization
RGC HKUST797/96E HK$382,000 Sep 1996 - Aug 1998
System design for world class manufacturing of electronic switching systems (with LIU,
Global collaboration for supply chain management and product development

Global collaboration for supply chain management and product development II

Communication infrastructure for Hong Kong textile and apparel industry global applications (HKTAIGA) (with CHENG, Herbert Lap Sang; SO, Richard H Y; YEN, Benjamin P C; SU, Chuan-Jun)

Development of a coordination system for mass customization assembly production (with SU, Chuan-Jun; LEI, Ming)

Global Collaboration for Supply Chain Management

Strategic decision framework for starting automotive manufacturing operations in China with design and manufacturing considerations (with GUO, Wei; WANG, Xianyun)

An IDEF3 based high level interface for building virtual environment from physical environment (with SU, Chuan-Jun)

Working Model for Intranet Commerce in Fabric Sourcing and Trading (with SU, Chuan-Jun; SO, Richard H Y; YEN, Benjamin P C)

A design approach for mass customization

Designing a wireless data communication system (with LAW, Yuk Kwong)

System integration engineering (with SU, Chuan-Jun; YEN, Benjamin P C)

The feasibility analysis on expanding HACTL's business to North America
Evaluation of market and distribution requirements to detering personal audio-cassette player positioning strategy for Yusan in the USA

YI SJP97/98.EG02 HK$150,000 Jan 1998 - Dec 2000

Global collaboration for supply chain management and product development II

SPL SPL96/97.EG01 HK$150,000 Jan 1997 - Dec 1998

Representative Recent Publications:


HAU LEE

*Adjunct Professor*

(2358-8230; haulee@ust.hk)


Supply Chain Project Leader, *Hewlett-Packard Company* (1989-90)

Asst and Assoc Professor, *Stanford University* (1983-91)

Lecturer, *The Wharton School, University of Pennsylvania* (1982-83)

Current Research Activities:

Investigation on how companies in different industries make use of information technologies and advances in the internet to create opportunities in supply chain management; how companies in a supply chain can be more integrated, with proper incentives alignment, to create values for the consumers and all the partners in a supply chain; how product designs can be a leverage to supply chain efficiency.
Representative Recent Publications:


OTTO CHUI-CHAU LIN

*PhD, Columbia University (1967)*

*Visiting Professor, National University of Singapore (1996-97)*

*Vice-President and General Director (1983-88) and President (1988-94), Industrial Technology Research Institute, Taiwan*

*Professor (1977-79) and Dean of Engineering (1983-95), National Tsing-Hua University, Taiwan*

Current Research Activities:

Management of R&D and innovation; science-technology and national competitiveness; technology transfer; polymers for electronics, rheology of polymer systems.

Representative Recent Publications:


DAVID YAO
Adjunct Professor

PhD, University of Toronto (1983)

Thomas Alva Edison Professor (1992- ) and Professor of Industrial Engineering and Operations Research (1988-), Columbia University

Assoc Professor, Harvard University (1986-88)

Current Research Activities:

Stochastic networks and queues; applied probability; discrete-event systems; optimal design, scheduling and control of stochastic systems; applications in computer and communication networks, production-inventory and manufacturing system.

Representative Recent Publications:


KWOK-LEUNG TSUI
Professor
(2358-7110; ktsui@ust.hk)

PhD, University of Wisconsin, Madison (1986)

Assoc Professor of Industrial and Systems Engineering, Georgia Institute of Technology (1990-95)

Member of Technical Staff, AT&T Bell Labs (1986-90)
Current Research Activities:
Robust design and Taguchi methods; design of experiments; design and modeling of CMM data; statistical process control; design and analysis of computer experiments.

Active Projects as Principal Investigator:
Optimization of dynamic systems through robust design
CF CF96/97.EG02 HK$616,000 Jan 1997 - Dec 1999

Representative Recent Publications:


HONG CHEN
Associate Professor
(2358-7118; hongchen@ust.hk)

PhD, Stanford University (1987)
Professor, Faculty of Commerce and Business Administration, UBC (1998-)
Assoc Professor, Faculty of Commerce, UBC (1993-1998)

Current Research Activities:
Applied probability; queueing network theory; economic systems and mathematical finance.

Active Projects as Principal Investigator:
Stability of multiclass queueing networks
CERG HKUST6056/97E HK$435,600 Jul 1997 - Jun 1999

Stability of multiclass queueing networks
DAG DAG96/97.EG39 HK$91,890 May 1997 - Apr 1999

Areas of Excellence in financial engineering
AOE AOE97/98.EG10 HK$200,000 Mar 1998 - Jun 2000

**Representative Recent Publications:**


**NEVILLE K. S. LEE**

Associate Professor

(2358-7104; nlee@ust.hk)

*PhD, Massachusetts Institute of Technology (1973)*

*Senior Consultant Engineering and Technical Program Manager, Digital Equipment Corp. (1989-94)*

**Current Research Activities:**

Manufacturing technology; precision manufacturing; non-traditional manufacturing processes; manufacturing equipment and instruments; management of change in manufacturing technology.

**Active Projects as Principal Investigator:**

Development of real time optical measurement device for manufacturing precision improvement

RGC DAG95/96.EG07 HK$36,933 Dec 1995 - Nov 1996

Development of thickness control system for air filled membrane product

RES RES95/96.EG01 HK$100,000 Jan 1996 - May 1998
Development of micro device systems and technologies for biomechanical applications (with HIRAOKA, Hiroyuki; ZOHAR, Yitshak; ZHANG, Tongyi; GOONETILLEKE, Ravindra S.; WONG, Man)

UGC RI95/96.EG07 HK$300,000 Sep 1996 - Aug 1997

Differential heating approach to the surface mount technology reflow process for better yield and throughput

Chiang Indus. Charity Found RH96107 HK$390,000 Dec 1996 - Nov 1999

Advanced motion control systems for microelectronics applications

RIG RI94/95.EG.09 HK$1,354,200 Dec 1995 - 1998

Representative Recent Publications:


RAYMOND CHEUNG
Assistant Professor
(2358-7111; rcheung@ust.hk)

PhD, Princeton University (1993)
Asst Professor of Industrial Engineering, Iowa State University (1993-96)
Asst Lecturer in Mathematics, Hong Kong Polytechnic (1985-87)

Current Research Activities:

Transportation and logistics systems management; network optimization; dynamic and stochastic optimization.

Active Projects as Principal Investigator:
Visualization tools for research on freight transportation systems planning
RGC DAG96/97.EG35 HK$91,890 Dec 1996 - Dec 1997
Machine management (with LIU, Jiyin; WAN, Yat Wah)
PAL PAL96/97.EG01 HK$166,400 Apr 1997 - Jan 1998
Dynamic resource allocation and planning for container transportation systems
CERG HKUST6047/97E HK$1,114,300 Oct 1997 - Sep 2000
Decision support infrastructure for the container transportation management in Hong Kong
(with YEN, Benjamin P C; WAN, Yat Wah; LIU, Jiyin)
ITDC SSF/066/96 HK$2,809,000 Apr 1997 - Mar 2000

Representative Recent Publications:

Methods for Dynamic Empty Container Allocation Problem", *Transportation Science*,
32(2):142-162.

*Naval Research Logistics*, 45:769-786.

Cheung, R.K. and Muralidharan, B. (in press) "Impact on Dynamic Decision Making to

for Air Freight Forwarders: A Challenge Created by the Airport Relocation", *Journal of Air
Transport Management*, 4:201-207.

Cheung, R.K. and Powell, W.B. (in press) "SHAPE - A Stochastic Hybrid Approximation
Procedure for Two-stage Stochastic Programs", *Operations Research.*

VINCENT DUFFY

Assistant Professor

(2358-7116; vduffy@ust.hk)

PhD, Purdue University (1996)

Research Assistant, Human Factors and Ergonomics Group, (1994-96), Institute for
Interdisciplinary Engineering Studies (1992-94), Purdue University

Current Research Activities:

Integration of people, organization, and technology for concurrent engineering;
organizational ergonomics;
Active Projects as Principal Investigator:

Development of a model for the successful integration of organization and people for successful JIT production in Hong Kong

RGC DAG95/96.EG27 HK$73,864 May 1996 - Oct 1997

A wants-and-needs assessment for electronic banking


Assessment of virtual teaming technology for remote integrated product development

DAG DAG97/98.EG08 HK$50,000 Jan 1998 - Jan 1999

Representative Recent Publications:


RAVINDRA S. GOONETILLEKE

Assistant Professor

(2358-7109; ravindra@ust.hk)

PhD, State University of New York at Buffalo (1990)

Human Factors Manager/Researcher, NIKE Sports Research Lab (1991-94)

Senior Ergonomist, Biomechanics Corporation of America (1990-91)

Current Research Activities:
Human-computer interaction; usability; development of "cultural-interfaces," footwear, seating.

**Active Projects as Principal Investigator:**

Investigation of an optimum seat surface for long-term use  
RGC HKUST700/95E HK$257,000 Dec 1995 - Dec 1997  
Foot modelling for improved fit and comfort (with TSUI, Kwok Leung)  
CERG HKUST798/96E HK$462,000 Jan 1997 - Dec 1999

**Representative Recent Publications:**


Goonetilleke, R.S. (in press) "Design to Minimize Discomfort", *Ergonomics in Design.*


**AJAY JONEJA**

*Assistant Professor*  
(2358-7119; joneja@ust.hk)

PhD, Purdue University (1993)  
Research Assistant, NSF Engineering Research Center for Intelligent Manufacturing Systems, Purdue University (1988-93)

**Current Research Activities:**

Computer-aided manufacturing; computer-aided process planning; industrial automation.

**Active Projects as Principal Investigator:**

OSCAP: A PDES-based open architecture process planning system (with SU, Chuan-Jun)
RGC HKUST701/95E HK$331,000 Sep 1995 - Apr 1998
A study of inter-course linkages via online tutors
ALP ALP96/97.EG01 HK$160,250 Jan 1998 - Sep 1998

Representative Recent Publications:


**RICHARD J. LINN**

*Lecturer*

(2358-7096; linn@ust.hk)

*PhD, Pennsylvania State University (1987)*

*Asst Professor of Industrial Engineering, Iowa State University (1987-93)*

*Technical Consultant, IBM Corp. (1990)*

*Project Engineer, E.I. Dupont (1976-81)*

**Current Research Activities:**

Assembly planning; concurrent engineering; electronic assembly; production planning and control, CAD/CAM.

**Active Projects as Principal Investigator:**

Process capability for registration control of multi-layer printed circuit board inner layer processes

DAG DAG97/98.EG37 HK$49,066 Jun 1998 - May 1999

Differential heating approach to the surface mount technology reflow process for better yield and throughput (with LEE, Neville K S)
Representative Recent Publications:


Port Bureau, National Sun YatSen University, Kaohsiung, Taiwan, Mar 26-29, p.11.


**Linn, R. and Liu, H. (in press) "An automatic assembly liaison extraction method and assembly liaison model", IIE Transactions on Design and Manufacturing.**


**JIYIN LIU**

Assistant Professor

(2358-7113; jyliu@ust.hk)

*PhD, Nottingham University (1993)*

*Lecturer, Northeastern University, China (1987-89)*

**Current Research Activities:**

Scheduling; production planning and control; flexible manufacturing systems; heuristic algorithms.

**Active Projects as Principal Investigator:**

Integrated production scheduling and shop floor control

RGC DAG95/96.EG08 HK$36,933 Jan 1996 - Dec 1996

An adaptive optimization approach to dynamic production scheduling

RIG DAG96/97.EG09 HK$100,000 Jan 1997 - Sep 1998

A comparison of planning and scheduling approaches and systems in manufacturing industry in the UK and Hong Kong: A pilot study (with MACCARTHY, B L)
Representative Recent Publications:


**LIMING LIU**

Assistant Professor

(2358-7099; liulim@ust.hk)

*PhD, University of Toronto (1990)*

*Lecturer, Huazhong University of Science and Technology (1990-91)*

*Research Associate, University of Toronto (1992)*

**Current Research Activities:**

Manufacturing systems modeling and logistics; supply chain management; inventory control; queuing.

**Active Projects as Principal Investigator:**

Studies on Networks of Inventory-Queues (with YAO, David D)

CERG HKUST6063/97E HK$760,000 Sep 1997 - Aug 1999

**Representative Recent Publications:**

Liu, L. and Lian, Z. (in press) "(s, S) Continuous Review Models for Inventory with Fixed
Lifetime", *Operations Research*.


**HELOISA HELENA O. MARTINS SHIH**

*Assistant Professor*

(2358-7117; iehhshih@ust.hk)

*PhD, Yokohama National University (1991)*

*Research Fellow, Information Systems Laboratory, Toshiba Co. (1992)*

*Asst Professor of Industrial Engineering, University of Sao Paulo, Brazil (1983-93)*

**Current Research Activities:**

Production and project management systems; applications of fuzzy inference, OR and Petri nets to industrial engineering problems; cultural issues in human-computer interface design.

**Active Projects as Principal Investigator:**

Fuzzy inference and beam search based production management (with LIU, Jiyin)

RGC HKUST699/95E HK$257,000 Sep 1995 - Feb 1999

Cultural human-computer interface for the Chinese population (with GOONETILLEKE, Ravindra S)

DAG DAG96/97.EG50 HK$30,000 Jun 1997 - Jun 1999

Cultural human-computer interface for Chinese population (with GOONETILLEKE, Ravindra S)

CERG HKUST800/96E HK$362,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


RICHARD H. Y. SO

Assistant Professor

(2358-7105; rhyso@ust.hk)

*PhD, University of Southampton (1995)*

*Research Fellow, Institute of Sound and Vibration Research, UK (1995)*

**Current Research Activities:**

User performance, sensory interfaces, and side-effects with virtual reality systems; spatial hearing and surround sound effects; usability with speech recognition systems; human performance modeling and applications to industrial designs.

**Active Projects as Principal Investigator:**

Ability to localize a secondary sound source while listening to a bone conducting device: A comparison with the use of earphone

RGC DAG95/96.EG06 HK$73,864 Jan 1996 - Aug 1996

Inter-continental tele-presence applications: A preliminary study of the effects of time lag (with GRIFFIN, Michael J.)

JRS JRS95/23 HK$29,760 Jan 1996 - Jun 1997

Effects of time lags in a virtual environment: Experimental studies of combined effects of lags and benefits of lag compensation with visual motor tasks

CERG HKUST6067/97E HK$630,300 Oct 1997 - Sep 2000

Motion sickness with virtual reality systems: Experimental studies of the effects of visual scene movement, head movement, and display parameters
Representative Recent Publications:


CHUAN-JUN SU

Assistant Professor

(2358-7881; cjsu@ust.hk)

PhD, Texas A&M University (1989)

Senior Lecturer in Industrial Engineering, Texas A&M University (1989-94)

Current Research Activities:

Geometric modeling; computer-aided design, manufacturing, and process planning; virtual reality; systems modeling; multimedia applications.

Active Projects as Principal Investigator:

Communication infrastructure for Hong Kong Textile and Apparel Industry Global Applications (HKTAIGA)

ITDC AF/114/96 HK$4,996,000 Jul 1996 - Jun 1999

The development of a feature-based concurrent engineering system

RIG DAG96/97.EG08 HK$100,000 Nov 1996 - Apr 1999

Representative Recent Publications:


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FUGEE TSUNG
Assistant Professor
(2358-7106; season@ust.hk)

PhD, University of Michigan, Ann Arbor (1997)

Quality Engineer/Researcher, Powertrain Quality Office, Ford Motor Company (1995-96)

Reliability Engineer/Researcher, R&D, Rockwell International (1994)

Current Research Activities:
Model-based quality improvement methodologies; integration of statistical process control (SPC) and automatic process control (APC); multivariate process capability improvement; robust design and Taguchi methods.

Active Projects as Principal Investigator:
Multivariate SPC techniques for automatic-controlled process quality improvement
DAG DAG97/98.EG17 HK$100,000 Apr 1998 - Sep 1999

Representative Recent Publications:


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**YAT-WAH WAN**

*Assistant Professor*

(2358-7097; ieywan@ust.hk)

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*PhD, University of California, Berkeley (1991)*

*Lecturer in Manufacturing Engineering, City Polytechnic of Hong Kong (1991-93)*

**Current Research Activities:**

Transportation logistics; applied stochastic processes; queuing theory; simulation; stochastic modeling and scheduling.

**Active Projects as Principal Investigator:**

To approximate the mean and the distribution of the makespan of stochastic projects

RGC HKUST707/95E HK$331,000 Sep 1995 - Aug 1998

A multi-grid dynamic programming approach for the solution of continuous-time, continuous-state markov decision processes


Research and collaboration with shipping industry in Hong Kong (with SHIH, Li Chung; LIU, Jiyin; CHEUNG, Raymond K M; MURTY, Katta)

RIG RI95/96.EG04 HK$1,420,296 Jul 1996 - Jun 1999

**Representative Recent Publications:**


**Cao, X.-R. and Wan, Y.** (in press) "Algorithms for Sensitivity Analysis of Markovian..."
Systems through Potential and Perturbation Realizations", *IEEE Transactions on Control System Technology*.


BENJAMIN YEN

*Assistant Professor*

(2358-7107; pcyen@ust.hk)

PhD, Columbia University (1995)

NSF Research Assistant, Center of Telecommunication Research, Columbia University (1992-95)

**Current Research Activities:**

Intelligent scheduling systems; simulation; information technology; interactive optimization systems; scheduling description languages.

**Active Projects as Principal Investigator:**

An interactive scheduling system

RGC DAG95/96.EG26 HK$73,864 Apr 1996 - Jun 1997

Interactive optimization in object-oriented scheduling systems

DAG DAG97/98.EG07 HK$50,000 Dec 1997 - Mar 1999

**Representative Recent Publications:**


Department of Mechanical Engineering

Mechanical engineering research has seven major research foci. These areas are described below:

**Design & Manufacturing:** Mechanical design and manufacturing are at the heart of mechanical engineering in which engineers conceive, design, build and test innovative solutions to "real world" problems. Research work is being conducted in the areas of electronic packaging, polymer processing, geometric modeling, intelligent design and manufacturing systems, manufacturing process modeling and optimization, in-process monitoring of manufacturing processes, rapid part manufacturing.

**Energy & Thermal Engineering:** Research in thermal and energy engineering includes the improved design of heat pipes and cryocoolers for electronic cooling, innovative design of advanced air-conditioning systems and dehumidifiers for indoor environmental control, the development of new thermally assisted methods for materials processing, waste heat management and effective use of energy in support of local manufacturing industries.

**Environmental & Fluid Engineering:** Research activities in this area include technical assessments of environmental pollution, computer modeling of air pollution, studies of thermal discharges into ocean, and development of new technologies to improve waste-treatment methods for the reduction of the discharge of pollutants, and to halt the degradation of and/or to rejuvenate already polluted surroundings. Field work is undertaken to collect critical data needed to evaluate systems, concepts and models.

**Materials Characterization & Processing:** Materials engineering focuses on characterizing and processing new materials, developing processes for controlling their properties and their economical production, generating engineering data necessary for design, and predicting the performance of products. Research topics include: smart materials; biomaterials; thin films; composites; fracture and fatigue; residual life assessment; materials issues in electronic packaging; materials recycling; plastics flow in injection molding; advanced powder processing and desktop manufacturing.

**Mechatronics & Control:** Research topics in this area include servosystem control, robotics, mechatronics, prime-mover system control, sensor technology and measurement techniques, control systems for manufacturing integration, in-process monitoring of manufacturing processes, inspection systems, and multi-media interfacing for automated mechanical systems.

**Microsystems Engineering:** Micro Electro Mechanical Systems (MEMS) is an emerging multi-disciplinary research field which promises to have a major impact on our daily life. Fundamental and applied research work is being conducted in this area. Basic micromechanics such as fluid and solid mechanics, heat transfer and materials problems unique to micromechanical systems are studied. New ideas to produce microsensors and micro actuators are explored. Technology issues related to the micro fabrication of these devices are being investigated.

**Solid Mechanics & Dynamics:** Research in this area entails the application of mathematics, theoretical mechanics and computational skills to the design and analysis of mechanical components and systems. Research activities include technical assessments, theoretical modelling and testing the behaviour of structures under static and dynamic loading, the
mechanical behaviour of both conventional and new engineering materials, computational mechanics for analyzing solids and structures, and the study and control of failure of mechanical components and systems.

Facilities

The Department of Mechanical Engineering has engineering workstations and graphic terminals in the computation laboratory and extensive stateoftheart facilities. The Department has the following laboratories available for instruction and research:

- Automation/Manufacturing Laboratory
- CAD Research Laboratory
- Controls & Robotics Laboratory
- Combustion and Fire Laboratory
- Energy and Environment Laboratory
- Materials Laboratory
- Materials Preparation/SEM
- Mechanical Fabrication Shop
- Mechanics and Materials Laboratory
- Micro Machines Laboratory
- Solid Mechanics Laboratory
- Structural Dynamics Laboratory
- Thermal Systems Laboratory
- UG Computer/Design Laboratory
- Undergraduate Laboratory

In addition to departmental facilities, students and staff have access to the University's central facilities which include: Electronic Support Shop, Instrumentation Pool, Machine Shop, CAD/CAM Facility, Advanced Engineering Materials Facility, and Materials Characterisation and Preparation Facility. The University also maintains stateoftheart academic computing facilities.

Research Profile

PING CHENG

Professor and Department Head

JAY-CHUNG CHEN

Professor and Director, Research Centre
YIU-WING MAI
Adjunct Professor

PIN TONG
Professor

TONGXI YU
Professor

CHIN-TSAU HSU
Senior Lecturer

JANG-KYO KIM
Associate Professor

SEE-CHUN KOT
Senior Lecturer

YANG LENG
Associate Professor

MATTHEW M. F. YUEN
Senior Lecturer and Director, CAD/CAM Facility
Assoc Dean, School of Engineering

TONG-YI ZHANG
Associate Professor

LILONG CAI
Assistant Professor

CHRISTOPHER YU HANG CHAO
Assistant Professor

SHIANG-FONG CHEN
Assistant Professor

YONGSHENG GAO
Assistant Professor

DAVID CHUEN CHUN LAM
Research Profile

PING CHENG

Professor and Department Head
(2358-7181; mepcheng@ust.hk)

PhD, Stanford University (1965)

Research Scientist, New York University (1965-67)

Professor of Mechanical Engineering (1974-94) and Chairman (1989-94), University of Hawaii

Visiting Professor of Petroleum Engineering, Stanford University (1976-77)

Current Research Activities:
Convection, boiling, and condensation in porous media; oscillatory flow and heat transfer.

Active Projects as Principal Investigator:
Optimization of the performance of a regenerator in an orifice pulse-tube refrigerator/cryocooler (with HSU, Chin Tsau)
RGC HKUST709/95E HK$381,000 Jan 1996 - Dec 1998
Energy technology lab
UGC TOO96/97.EG03 HK$200,000 Jan 1997 - Jun 1997
Areas of Excellence in energy and thermal systems
Heat transfer characteristics of bi-dispersed metal porous structure heat sinks for high heat flux applications (with ZHAO, Tianshou; LAM, David C C; HSU, Chin Tsau)
RGC HKUST6044/97E HK$810,700 Jan 1998 - Dec 2000
Studies of Multiphase/Multicomponent Transport in Porous media (with ZHAO, Tianshou)
RGC HKUST814/96E HK$423,000 Jan 1997 - Dec 1999

Representative Recent publications:


**JAY-CHUNG CHEN**

*Professor and Director, Research Centre*

(2358-8654; jcchen@ust.hk)

*PhD, California Institute of Technology (1972)*

*Technical Staff, Jet Propulsion Laboratory, California Institute of Technology (1966-89)*

**Current Research Activities:**

Coastal environment; atmospheric science application; large complex system technology.

**Active Projects as Principal Investigator:**

Development of novel non-toxic antifoulants and human interactions with the coastal environment: Improving basic knowledge and strategies for utilizing the marine resources of Hong Kong and the region

RGC AOE97/98 HK$390,520 Apr 1998 - Jun 1999

Coastal marine science facilities

UGC CA97/98.SC01 HK$2,300,000 Jul 1998 - Jun 2000

Ecosystem network for South China Sea and coastal regions (Hong Kong part)

CF CF96/97.RC02 HK$1,500,000 Jul 1997 - Jun 2000

97 Hao ran Seminar (with CH'I, Hsi-sheng; TING, Pang-Hsin)

HRF HRF96/97.RC01 HK$395,000 Jun 1997 - indefinite

**Representative Recent Publications:**


and Taiwan", *The 2nd World Conference on Structural Control*, Kyoto, Japan, Jun 28-Jul 1.


**YIU-WING MAI**

*Adjunct Professor*

*PhD, University of Hong Kong (1972)*

*Research Scholar, University of Michigan, Ann Arbor (1974-75)*

*Postdoctoral Research Assistant, Imperial College, London (1976)*

*Professor of Mechanical Engineering; Director, Graduate School of Engineering; and Associate Dean (Research and Development), University of Sydney (1995-)*

**Current Research Activities:**

Fracture and fatigue mechanics of materials and structures; advanced engineering materials; manufacturing and materials processing; tribology; smart materials and biomimetics; biomedical and dental materials; failure analysis.

**Active Projects as Principal Investigator:**

Fundamental studies on the interface fracture phenomena in advanced fiber composites (with KIM, Jang Kyo)

RGC HKUST719/95E HK$257,000 Oct 1995 - Sep 1998

**Representative Recent Publications:**


**PIN TONG**

*Professor*

(2358-7202; pintong@ust.hk)

PhD, *California Institute of Technology* (1966)

Research Fellow, *California Institute of Technology* (1966)

Senior Engineer, *Massachusetts Institute of Technology* (1966-67)

Chief, *Structures and Dynamics Division, Transportation Systems Center, US Department of Transportation* (1974-90)

Assoc Professor, *Massachusetts Institute of Technology* (1971-74)

**Current Research Activities:**

Finite-element and large-scale computation methods; structural integrity of airframes, machinery, and civil structures; microstructures of materials; fracture mechanics; biomechanics; failure analysis; electronics packaging.

**Active Projects as Principal Investigator:**

A damage mechanics approach to corrosion fatigue (with CHOW, Chi L.; ZHANG, Tongyi)

RGC DAG96/97.EG53 HK$30,000 Jun 1997 - Jun 1998

Nonlinear dynamics response of runway pavements (with CHANG, Paul T.Y.)

RGC HKUST715/95E HK$257,000 Dec 1995 - Nov 1998

Areas of Excellence in advanced material


Application of piezoelectric composites for linear and rotary actuators (with ZHANG, Tongyi; LEE, Ricky S W)

CERG HKUST6050/97E HK$799,700 Jan 1998 - Dec 2000

A Damage Mechanics approach to Corrosion Fatigue (with ZHANG, Tongyi; CHOW, Chi L.)
Developing a new production machinery (with TSAI, Stephen W.)

Design of hydroxyapatite-coated metal implants (with MAK, Fuk-Tat Arthur; LENG, Yang; CHAN, Chi Ming)

Third international conference of fracture strength of solids

Representative Recent Publications:


TONGXI YU

Professor

(2358-6962 / 2358-8652; metxyu@ust.hk)

PhD (1983), ScD (1995), Cambridge University

Research Associate, Brown University (1984)

Reader in Mechanical Engineering, University of Manchester Institute of Science and Technology (1992-95)

Professor and Head, Solid Mechanics Division, Peking University (1984-91)

Current Research Activities:
Impact mechanics; engineering plasticity; structural crashworthiness and failure; mechanics of metal forming; sandwich and laminate structures; energy-absorbing materials.

**Active Projects as Principal Investigator:**

Body measurement and fabric draping for the garment industry (with SHEN, Helen C.M. and YUEN, Matthew M.F.)

RIG RI95/96.EG18 HK$547,000 Jan 1997 - Dec 1998

Dynamic failure of imperfect and pre-loaded structures under impact or pulse loading (with YU, Jilin; HUA, Yunlong; CHEN, Yuze)

CERG HKUST811/96E HK$1,036,000 Nov 1996 - Oct 1999

Large elastic-plastic deformation associated with impact/collision between two deformable bodies/structures (with REID, Stephen Robert)

JRS JRS98/31 HK$61,900 Apr 1998 - Mar 1999

Improving safety in Hong Kong’s construction industry by proper selection and use of hard hats - study of head-neck injuries in respect to hard hat design and weathering effect (with WU, Jingshen)

OSHC OSHC96/97.EG01 HK$272,000 Mar 1998 - Mar 1999

Forming and fracture of bamboo-metal sheet and other laminates for structural applications (with LI, Zongjin; HE, Guanhu; SUI, Guo-Xin; ZHOU, Benlian; CHAN, Chi Ming; KIM, Jang Kyo)

RIG RI95/96.EG05 HK$872,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


CHIN-TSAU HSU

Senior Lecturer
(2358-7188; mecthsu@ust.hk)

PhD, Stanford University (1977)
Research Associate, Stanford University (1977-78)
Senior Research Scientist, Space and Technology Group, TRW Inc. (1978-91)

Current Research Activities:
Heat and mass transfer in porous media; sediment transport; air-sea interaction; thermal process in manufacturing; remote sensing.

Active Projects as Principal Investigator:
A study of bubble dynamics to optimize gas transfer in two-phase flows (with QIU, Huihe; HUANG, Howard J. C.)
RGC HKUST708/95E HK$361,000 Jan 1996 - Dec 1998
Areas of Excellence in coast science/engineering
AOE AOE97/98.EG12 HK$200,000 Mar 1998 - Dec 1999
Performance of cool storage systems with packed capsules encapsulating phase-change materials (with CHENG, Ping)
Thermal Performance of Pulsating Heat Pipes (with CHENG, Ping)
CERG HKUST815/96E HK$445,000 Jan 1997 - Dec 1999
Intelligent control of coastal/offshore structures subjected to wind and wave loads (with QIU, Huihe; CHANG, Paul T.Y.; CHANG, Chih-chen)
RIG RI95/96.EG15 HK$550,000 Jul 1997 - Jun 1998

Representative Recent Publications:


JANG-KYO KIM
Associate Professor
(2358-7207; mejkkim@ust.hk)

PhD, University of Sydney (1991)
Lecturer, Australian National University (1993-94)
Australian Postdoctoral Research Fellow, University of Sydney (1992-93)
Manufacturing Engineer, Korean Air (1979-83)

Current Research Activities:
Manufacturing, characterization, failure analysis and mechanics of composite materials for structural, constructional and biomedical applications; interface science, thin films and coatings; microstructure-property relationship; fracture, failure and damage of advanced materials and structures; reliability and failure analysis of microelectronic packages; electronic materials; sandwich and laminate materials.

Active Projects as Principal Investigator:
Fundamental studies on the interface fracture phenomena in advanced fiber composites (with MAI, Yiu Wing)
RGC HKUST719/95E HK$257,000 Oct 1995 - Sep 1998
Process control and interface optimization of high performance thermoplastic composites (with MAI, Yiu Wing)
RGC HKUST714/95E HK$257,000 Dec 1995 - Nov 1998
Computer-aided engineering based product qualification methodology for electronic packages (with YUEN, Matthew M. F.; CHAN, Chi Ming; CHAN, Philip C. H.; TONG, Pin; LEE, Ricky S. W.;ZHANG, Tongyi)
UGC RI95/96.EG22 HK$480,000 Oct 1996 - Sep 1997
Dynamic interlaminar fracture of advanced composites and adhesive joints (with YU, Tongxi)
DAG DAG97/98.EG10 HK$50,000 Feb 1998 - Jul 1999

Optimisation of interphase in glass fabric-vinyl ester composite laminates for printed circuit board (PCB) applications (with MAI, Yiu Wing)
CERG HKUST817/96E HK$451,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


**SEE-CHUN KOT**

*Senior Lecturer*

(2358-7187; mesckot@ust.hk)

**PhD, Cornell University (1971)**

**Research Assistant, Cornell University (1971-72)**

**Research Assistant, Warwick University (1972-74)**

**Lecturer and Senior Lecturer in Mechanical Engineering, University of Hong Kong (1974-90)**

**Current Research Activities:**

Computational fluid dynamics; environmental fluid dynamics; atmospheric dispersion; wind-tunnel modeling; airport wind shear.

**Representative Recent Publications:**


**YANG LENG**

*Associate Professor*

(2358-7185; meleng@ust.hk)

*PhD, University of Virginia (1989)*

*Research Associate, University of Virginia (1989-91)*

*Research Engineer, Mechanical Engineering Research Institute, Chongqing (1982-84)*

**Current Research Activities:**

Mechanical behavior of engineering materials; composite technology; novel materials processing.

**Active Projects as Principal Investigator:**

Fabrication and mechanical behavior of in situ polymer composites

RCL RCL95/96.EG01 HK$300,000 Apr 1996 - Mar 1998

Injection modeling LCP reinforced thermoplastics (with GAO, Furong; WU, Jingshen)

CERG HKUST6052/97E HK$479,600 Jan 1998 - Dec 1999

Fatigue failure study of hydroxyapitate coated metal implants (with CHEN, Jiyong; ZHANG, Xingdong; TONG, Pin)

CERG HKUST799/96E HK$610,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**

Kang, F. Y., Leng, Y., Zhang, T.-Y. and Li, B. S. (1998) "Electrochemical synthesis and characterization of ferric chloride-graphite intercalation compounds in aqueous solution", 


MATTHEW M. F. YUEN

Senior Lecturer and Director, CAD/CAM Facility
Assoc Dean, School of Engineering
(2358-7914 / 2358-7189; meymf@ust.hk)

PhD, University of Bristol (1977)
Senior Lecturer, University of Hong Kong (1979-91)
Senior Design Engineer, Babcock & Wilcox (1978-79)
Senior Research Technologist, GEC (1975-78)

Current Research Activities:

CAD/CAM; deformable object modeling; Electronic packaging; polymer processing.

Active Projects as Principal Investigator:

Development of a three-dimensional computer-aided-design system for the garment industry
ITDC AF/122/96 HK$4,350,000 Sep 1996 - Feb 1998

Warpage analysis of integrated circuit packages (with CHAN, Chi Ming)
RGC HKUST711/95E HK$1,149,000 Dec 1995 - Nov 1999

Passivation cracking in plastic encapsulated integrated circuits under thermal cycling (with CHAN, Philip C.H.; ZHANG, Tongyi)
RIG DAG96/97.EG14 HK$100,000 May 1997 - Apr 1999

Effect of thermal cycling on interfacial cracking in electronic devices (with LAM, David C.C.)
Three-dimensional simulation and presentation system for the garment industry (with KUNG, Keung-lung Alexandre; TAYLOR, Gail; SHEN, Helen C.M.)

ITDC AF/183/97 HK$7,250,000 Nov 1997 - Oct 1999

Multi-media CD-ROM on the principles and data of three-dimensional concept (with KUNG, Keung-lung Alexandre; CHEN, Shiang-fong)

ITDC AF/239/97 HK$2,586,000 Nov 1997 - Feb 1999

Representative Recent Publications:


TONG-YI ZHANG
Associate Professor
(2358-7192; mezhangt@ust.hk)

PhD, University of Science & Technology, Beijing (1985)
Humboldt Foundation Research Fellow, University of Göttingen (1986-88)
Assoc Research Scientist, Yale University (1990-93)

Current Research Activities:
Materials science and engineering; fracture of piezoelectric materials; defects of crystals and microstructures of materials; environmental degradation of materials; hydrogen permeation and hydrogen diffusion; residual stressed and thin films.
Active Projects as Principal Investigator:

Hydrogen permeation and hydrogen diffusion in multilayered heterogeneous systems (with KIRCHHEIM, Reiner)

G-HK G-HK96/97.EG10 HK$20,000 Mar 1997 - Feb 1998

Residual stresses and fracture of thin films (with MAI, Yiu Wing)

RGC HKUST713/95E HK$977,000 Jan 1996 - Dec 1998

Study of failure mechanism of piezoelectric ceramics under combined mechanical-electrical loadings (with TONG, Pin)

CERG HKUST6051/97E HK$684,200 Jan 1998 - Dec 2000

Studies on hydrogen permeation and hydrogen diffusion

CERG HKUST805/96E HK$735,000 Jan 1997 - Dec 1999

Representative Recent Publications:


LILONG CAI

Assistant Professor

(2358-7209; melcai@ust.hk)

PhD, University of Toronto (1990)

Asst Professor of Mechanical Engineering, Columbia University (1990-93)

Current Research Activities:

Robotics; control of nonlinear systems; automation of manufacturing processes;
instrumentation and measurement.

**Active Projects as Principal Investigator:**

Control of nonlinear time-varying uncertain systems-theory and experiments  
RGC DAG96/97.EG51 HK$30,000 Jun 1997 - Jun 1998

A new approach to improve performance of servo systems via active inertia control  
RGC HKUST725/95E HK$381,000 Jan 1996 - Dec 1997

Advanced motion control systems for microelectronics applications (with LEE, Neville K. S.; YUEN, Matthew M. F.; QIU, Li)  
UGC RI94/95.EG09 HK$1,062,200 Dec 1995 - Nov 1997

Control of nonlinear time-varying uncertain systems-theory and experiments  
CERG HKUST806/96E HK$362,000 Jan 1997 - Dec 1999

**Representative Recent Publications:**


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**CHRISTOPHER YU HANG CHAO**

*Assistant Professor*

(2358-7210; meyhchao@ust.hk)

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*PhD, University of California, Berkeley (1994)*

*Asst Professor, Hong Kong Polytechni University (1995-97)*

**Current Research Activities:**

Indoor environmental quality in buildings; combustion and fire safety science.
Active Projects as Principal Investigator:

Flame spread over solid fuels in premixed flow
DAG DAG97/98.EG18 HK$100,000 Feb 1998 - Jan 1999

Development of a ventilation control strategy to minimize accumulation of Radon in commercial buildings using carbon dioxide for ventilation control (with CHENG, Ping)
HTC HTC97/98.EG01 US$52,500 Dec 1997 - Nov 1999

Representative Recent Publications:


SHIANG-FONG CHEN
Assistant Professor
(2358-8656; meschen@ust.hk)

PhD, Iowa State University (1997)

Current Research Activities:

Assembly and disassembly planning; life-cycle design; reverse engineering.

Active Projects as Principal Investigator:

Collision-free path planning for a car-like robot
DAG DAG97/98.EG19 HK$100,000 Mar 1998 - Feb 1999

Representative Recent Publications:


YONGSHENG GAO

Assistant Professor

(2358-8649; meygao@ust.hk)

PhD, University of Birmingham (1992)
Research Fellow, University of Birmingham (1992-94)
Lecturer, Huazhong University of Science & Technology (1987-88)

Current Research Activities:

Manufacturing process design and control; grinding technology; tolerance and measurement technology.

Active Projects as Principal Investigator:

A study of high speed workpiece actuators for surface grinding control
RGC DAG95/96.EG29 HK$36,933 Jun 1996 - Jun 1998
Surface profile measurement assisted by transparent fluid during grinding
CERG HKUST6100/97E HK$661,100 Jan 1998 - Dec 1999
Composite Active Control for the Surface Grinding Process
CERG HKUST818/96E HK$508,000 Jan 1997 - Dec 1999

Representative Recent Publications:

Gao, Y.S. (1998) "Experimental validation of a dynamic workpiece steady control method


**Gao, Y.S.** and Wang, Z. Y. (1998) "In-process surface measurement with vibration effect isolated", working paper.


**DAVID CHUEN CHUN LAM**

*Assistant Professor*

(2358-7208; medcclam@ust.hk)

*PhD, University of California (1991)*

*Research Staff, Hitachi Research Lab, Hitachi Ltd. (1991-94)*

**Current Research Activities:**

Advanced manufacturing technology; powder processing; microarchitecture design; mechanical properties; mechanics of processing; electronic interconnection technology.

**Active Projects as Principal Investigator:**

Areas of Excellence in rapid prototyping

AOE AOE97/98.EG13 HK$200,000 Mar 1998 - Dec 2000

Experiments and modelling of electro-mechanical failure in direct chip attach using anisotropic conductive film (ACF) (with TONG, Pin; KARIM, Zaheed S)

DAG DAG97/98.EG09 HK$50,000 Jan 1998 - Dec 1999

Selective hot compaction forming for rapid part manufacturing (with YUEN, Matthew M F; JONEJA, Ajay)

RIG RI95/96.EG11 HK$830,960 Jul 1996 - Jun 1998

**Representative Recent Publications:**
RICKY SHI-WEI LEE

Assistant Professor
(2358-7203; rickylee@ust.hk)

PhD, Purdue University (1992)
Postdoctoral Research Associate, Purdue University (1992-93)
Visiting Asst Professor, Purdue University (1993)

Current Research Activities:
Electronics packaging and surface mount technology; mechanics and smart materials for sensors and actuators; composite grid structures and patch repairs.

Active Projects as Principal Investigator:
Bonded repairs of damaged structures using composite patch (with TONG, P.; MAI, Y.-W.)
RGC HKUST569/94E HK$353,000 Jan 1995 - Dec 1997
Development of innovative design and processing of composite grid structures for infrastructural constructions and repairs (with TONG, Pin; LI, Zongjin; LEE, Stephen.)
UGC RI94/95.EG13 HK$1,677,025 Jan 1996 - Dec 1998
Innovative design and analysis of smart composites for piezoelectric actuators
RGC DAG96/97.EG16 HK$100,000 Oct 1996 - Sep 1997
Material/Process characterization for Wire-Bond Pad of PBGA substrate and dimensional stability of multi-layer PCB
ACL(HK) ACL(HK)96/97.EG0 HK$180,000 Oct 1997 - Jun 1999
Improvement of performance for a rotary motor driven by anisotropic piezoelectric composite laminate (with HAGEDORN, Peter)
G-HK G-HK97/98.EG01 HK$24,760 Apr 1998 - Mar 1999
Development of a rotary motor driven by anisotropic piezoelectric laminates
Representative Recent Publications:


STEVE HON-KEUNG LEE

Assistant Professor

(2358-7186; shklee@ust.hk)

*PhD, Rutgers University (1993)*

*Visiting Asst Professor, Rutgers University (1994)*

Current Research Activities:

Computational and experimental studies of the thermal-fluids transport during materials processing; fundamental heat transfer; optical fiber coating; powder processing; electronic packaging.

Active Projects as Principal Investigator:

The Thermal-Mechanical Stress in Electronic Packages (with TONG, Pin; LEE, Ricky S. W.)

ASAT ASAT96/97.EG01 HK$309,200 Jun 1997 - Sep 1999

Proposal to study the Thermal-Mechanical Stress in Electronic Packages (with TONG, Pin; LEE, Ricky S W; WU, Jingshen; WENG, Lutao)
ASAT ASAT96/97.EG01 HK$1,004,900 Jun 1997 - May 1999

Computational and experimental analyses of the heat and fluid transport during optical fiber coating

CERG HKUST6098/97E HK$435,600 Jul 1997 - Jun 2000

Fundamental study of the heat transfer issues during non-isothermal sintering

CERG HKUST807/96E HK$457,000 Sep 1996 - Aug 1999

Representative Recent Publications:


HUIHE QIU
Assistant Professor
(2358-7190; meqiu@ust.hk)

PhD, Erlangen-Nuremberg University (1994)

Researcher, LSTM-University-Erlangen (1990-94)

Current Research Activities:

Advanced laser technique and its applications in thermal physics and fluid mechanics; two-phase flow instrumentation; spray evaporation and electronic cooling.

Active Projects as Principal Investigator:

A new non-intrusive method for measurements of particle properties in multiphase flows
Development and application of Phase-Doppler Anemometry for studies in bubble columns (with HSU, Chin Tsau; SOMMERFELD, Martin)

Deformation, heat transfer and solidification in droplet impingement on substrates (with ZHAO, Tianshou; CHENG, Ping)

Representative Recent Publications:


QING-PING SUN

Assistant Professor

(2358-8655; meqpsun@ust.hk)

PhD, Tsinghua University (1989)

Postdoctoral Research Fellow, Tsinghua University (1989-91)

Visiting Professor, University of Metz (1996)

Professor of Engineering Mechanics (1994- ) and Assoc Professor (1991-93), Tsinghua University

Current Research Activities:
Fracture and toughening of ceramics; mechanics of phase transformations in solids; micro-mechanics constitutive theory of solids; microstructure design of smart composites; modeling and simulation of fabric materials; shape memory alloys; microstructure-property relationship of solids; propagating instability in solid materials and structures.

**Active Projects as Principal Investigator:**

Micromechanics constitutive study on the temperature dependence of material instability during stress-induced transformation in ceramics

RGC HKUST716/95E HK$257,000 Jan 1996 - Dec 1998

Development of a 3-dimensional CAD system for the garment industry (with YUEN, Matthew M.F.; TAYLOR, Gail.; SHEN, Helen C.M.)

Industry Dept. AF/122/96 HK$4,350,000 Sep 1996 - Feb 1998

Micromechanics study on the constitutive and fracture behavior of single crystal shape memory alloys

DAG DAG96/97.EG15 HK$125,000 Nov 1996 - Feb 1999

**Representative Recent Publications:**

Sun, Q.P., Xu, TERRY, Tong, PING and Zhang, X.Y. (1997) "On the full-field deformation of single crystal CuAlNi shape memory alloys—— stress-induced martensitic tranformation", *J.de Physique IV*, 7(C5)555-560.


**WAI MING TO**

Assistant Professor

(2358-7196; mewmto@ust.hk)

PhD, Imperial College of Science, Technology & Medicine, University of London (1991)
Current Research Activities:

Architectural and room acoustics; environmental noise; transportation noise; acoustic boundary element analysis; model updating; experimental model analysis; sensitivity analysis of mechanical structures.

Active Projects as Principal Investigator:

Characterization of traffic noise in open areas (with YUEN, Matthew M. F.)
ECWW ECWW95/96.EG02 HK$253,300 Jul 1996 - Dec 1997
Finite element model updating for bridges (with KATAFYGIOTIS, Lambros; CHANG, Paul T.Y.)
CERG HKUST6110/97E HK$490,600 Jan 1998 - Dec 1999

Representative Recent Publications:


JINGSHEN WU
Assistant Professor
(2358-7200; mejswu@ust.hk)

PhD, University of Sydney (1994)
Australian Postdoctoral Research Fellow (1995-96)
Research Associate, University of Sydney (1994-95)
Research Assistant, Technical University of Hamburg-Harburg (1987-89)
Current Research Activities:
Processing-morphology-property relationships of polymer blends; fracture and toughening of polymers and polymer composites; plastics recycling technology; characterization and failure analysis of materials for electronic packaging.

Active Projects as Principal Investigator:
Processing and characterization of poly(ethylene terephthalate)/polycarbonate/impact modifier (PET/PC/IM) blends
RGC DAG95/96.EG19 HK$73,864 Mar 1996 - Feb 1997

Toughening recycled Polyethylene Terephthalate (PET) by functionalized elastomers (with KARGER-KOCSIS, Jozsef)
G-HK G-HK97/98.EG06 HK$24,920 Apr 1998 - Mar 1999

Study on compatibilization mechanisms and developing technologies for recycling mixed plastic waste (with CHAN, Chi Ming; LEE, Stephen K L)
CERG HKUST6105/97E HK$523,600 Nov 1997 - Oct 1999

Development of tough rigid-rigid polymer blends by reactive blending technique (with MAI, Yiu Wing)
CERG HKUST810/96E HK$474,000 Sep 1996 - Aug 1999

Representative Recent Publications:


TIANSHOU ZHAO
Assistant Professor
(2358-8647; metzhao@ust.hk)

PhD, University of Hawaii (1995)
Lecturer, Tianjin University (1986-91)

Current Research Activities:
Boiling and condensation heat transfer in a confined space; phase-change flow and heat transfer in capillary structures; electronic cooling; heat pipes; advanced air conditioning and refrigeration systems.

Active Projects as Principal Investigator:
Investigations and development of a miniature capillary pumped loop
RGC DAG95/96.EG13 HK$73,864 Apr 1996 - Sep 1997
Boiling rheology and heat transfer characteristics in micro-channels (with QIU, Huihe; CHENG, Ping)
CERG HKUST6045/97E HK$722,700 Jan 1998 - Dec 2000
Investigations of fluid flow and heat transfer characteristics of a miniature capillary evaporator (with CHENG, Ping)
CERG HKUST809/96E HK$752,000 Jan 1997 - Dec 1999

Representative Recent Publications:


YITSHAK ZOHAR

Assistant Professor

(2358-7194; mezohar@ust.hk)

PhD, University of Southern California (1990)

Research Associate, University of California, Los Angeles (1991-92)

Current Research Activities:

Micro-electro-mechanical systems: micro-sensors, microactuators, micro-mechanics; electronic packaging; wind engineering: turbulent shear flows, unsteady aerodynamics.

Active Projects as Principal Investigator:

The fabrication and analysis of electromagnetic microspeakers and microphones (with WONG, Man; TO, Wai Ming)

RGC DAG96/97.EG52 HK$30,000 Jun 1997 - Jun 1998

Gaseous flow in microchannels (with WONG, Man)

RGC HKUST697/95E HK$257,000 Jan 1996 - Dec 1998

Micro electro mechanical machines

UGC TOO96/97.EG04 HK$200,000 Jan 1997 - Jun 1997

The fabrication and analysis of electromagnetic microspeakers and microphones (with TO, Wai Ming; WONG, Man)

CERG HKUST774/96E HK$362,000 Jan 1997 - Dec 1999

Representative Recent Publications:


The research mission of the School of Business and Management is to work on cutting edge issues of business and management and to extend the frontiers of knowledge through both theoretical and empirical research.

Faculty members in the School of Business and Management contribute to society by clarifying important business and economic issues and by raising the quality of policy deliberation. They also incorporate their research findings into their teaching materials, thereby enriching the contents of both postgraduate and undergraduate courses.

Currently, the School has three research centers: The Center for Economic Development, the Center for Asian Financial Markets and the Hang Lung Center for Organizational Research. These state-of-the-art research centers cultivate close ties with regional business, financial, and policy communities by organizing conferences and workshops. The establishment of the Shui On Center for China Business and Management promises to propel the School into prominence.

The Center for Economic Development coordinates and promotes research programs that focus on the transition of Asia-Pacific economies. Emphasis is given to the study of topics such as China's economic reform and open door policy; the economic integration of Hong Kong and the Pearl River Delta; the emergence of regional economies in China, in particular the region comprising the southern coastal provinces.

The Center for Asian Financial Markets studies the growth and development of financial markets in the region, along with issues relevant to regional business operations. It is formed to develop a data and knowledge base on Asian financial markets to facilitate research and to disseminate knowledge. It will also provide an academic interface with government and business. Regular activities include publication, provision of expertise, development of new data and teaching materials, a bi-annual newsletter, a working paper series, seminars and public lectures, executive education, consulting services and contract research.

The Hang Lung Center for Organizational Research aims to improve the practice of management in Chinese and multinational firms doing business in Greater China, by conducting rigorous research and using the results to improve management practices.

**Advanced Facilities**

Advanced laboratories of the School of Business and Management are available for learning and research. They include:

A Workstation Lab that houses 30 UNIX SPARC workstations with color monitors;
A Multi-media Lab consisting of advanced audio-visual equipment, 4 high performance SGI workstations and peripherals, high-end 586PCs and PowerMacs with large storage space, all housed in a specially designed acoustic room;

A Networking Lab, which provides students and researchers the opportunity to explore the realm of networking technology without disrupting the campus-wide network. It simulates a large networking environment with a mixture of 486PCs and 586PCs, 4 SUN SPARC stations, a HP 9000 Series 800 server, and a Cabletron Hub;

A Behavioral Lab, which includes a case study style classroom for business courses, a central control room which facilitates electronic interaction among the research rooms of the facility, and some small break-out rooms for seminars, study groups, and placement interviews. The Lab provides a state-of-the-art environment for teaching and research on human behavior. A second case study style classroom has recently been constructed. Facilities inside this classroom include both advanced audio-visual and video-conferencing equipment;

A Simulation Lab, which provides state-of-the-art computing facilities to students and faculty for analyzing problems in the operations of a firm. The Lab houses thirty-five 486PCs and 586PCs with 17” color displays, 1 HP LaserJet and 4 dot matrix printers;

A PC Lab consisting of sixty-five 586PCs and 2 high speed LaserJet printers devoted to lectures and tutorials. It also provides a venue for students' projects and presentations;

A Faculty Research Lab with financial, economic and accounting databases installed on 9 Sun workstations for use by both faculty and research staff. There are also 1 HP workstation and three 586PCs, all of which are attached with either single or dual CD-ROMs.

A Financial Markets Lab with thirty 486PCs and 586PCs networked together to simulate a real-time trading floor using the specially developed Financial Trading System software.
Department of Accounting

Accounting is fundamental to all business undertakings and has applications in many areas of business and management. Courses offered by the Department focus on concepts and theories, providing students with a solid basis on which they can adapt to changing techniques and practices when they enter the professional world. Students in Accounting complete a multidisciplinary curriculum in order to understand business in both the Hong Kong and international contexts. As a result, they are well prepared for careers in the new global economy and for the challenges and ever-changing needs of the accounting profession in the new millennium.

Both basic research and applied research are conducted. Applied research focuses on the business and organizational problems and issues of particular interest to Hong Kong and surrounding regions, in both public and private sectors. Basic research investigates the theoretical, technical, and conceptual issues related to the creation and use of financial information within firms and in financial markets. Interdisciplinary research in collaboration with other departments and schools is encouraged.

Research Profile

GARY C. BIDDLE
Professor and Department Head

CHI-WEN JEVONS LEE
Professor

LODE LI
Professor of Information and Systems Management and of Accounting

KEVIN C. W. CHEN
Associate Professor

BRIAN WALLACE SEMKOW
Associate Professor

ANDREW H. T. CHAN
Assistant Professor

DEREK KWOK-WING CHAN
Assistant Professor

YEW MING CHIA
Assistant Professor

KIM CHUNG KWEON
Assistant Professor
SABRINA KWAN
Assistant Professor
HYUN KOO LEE
Assistant Professor
FLETCHER O. LEE
Lecturer-in-Law
SUIL PAE
Assistant Professor
CHUL W. PARK
Assistant Professor
K. P. RAMASWAMY
Visiting Assistant Professor
EARL K. STICE
Assistant Professor
T. J. WONG
Assistant Professor
BING Xiang
Assistant Professor
DINGBO XU
Assistant Professor
ANDREW YIM
Assistant Professor
SEUNG WEON YOO
Assistant Professor
GUOCHANG ZHANG
Assistant Professor
Research Profile

GARY C. BIDDLE
Professor and Department Head
(2358-7552; biddle@ust.hk)

PhD, University of Chicago (1980)
Professor of Accounting, University of Washington (1984- )
Assistant Professor, University of Chicago (1980-84)

Current Research Activities:
Securities pricing; financial statement analysis; information content tests; economic value added; management performance measures; foreign stock listings; inventory accounting; audit sampling; cost allocations; auditor decision making.

Active Projects as Principal Investigator:
Toward a framework for financial statement analysis: A test of EBFO & the valuation-relevance of EVA?
DAG DAG96/97.BM14 HK$60,396 Nov 1996 - Apr 1999
Further evidence on the usefulness of EVA?
DAG DAG97/98.BM80 HK$58,839 Apr 1998-Mar 1999
Which accounting is best? A transnational comparison
CERG HKUST6209/97 HK$339,000 Jul 1997-Jun 1999

Representative Recent Publications:


**CHI-WEN JEVONS LEE**

*Professor*

(2358-7551; acjevons@ust.hk)

*PhD, University of Rochester (1977)*

*Freeman Chair and Assoc Dean, Tulane University (1988-)*

*Assoc Professor, Wharton School, University of Pennsylvania (1983-88)*

**Current Research Activities:**

Accounting and capital markets; organization and contract theory; restructuring Chinese enterprises; financial restructuring (mergers, acquisitions, management buyouts).

**Active Projects as Principal Investigator:**

Long-run associations between stock prices, dividends, and accounting earnings (with GU, Zhaoyang; NOREEN, Eric W.)

RGC DAG95/96.BM10 HK$40,000 Dec 1995 - Aug 1998

Fundamental valuation of takeover premium

CERG HKUST620/96H HK$416,000 Jun 1997 - May 1999

**Representative Recent Publications:**


LODE LI

Professor of Information and Systems Management and of Accounting
(acli@ust.hk)

PhD, Northwestern University (1984)
Research Fellow in Economics, California Institute of Technology (1984-85)
Asst Professor, Massachusetts Institute of Technology (1985-88)
Assoc Professor and Professor, Yale School of Management (1989-)

Current Research Activities:
Operations management and strategy; economics of operations; game theory; stochastic processes and control; industrial organization; managerial accounting.

Active Projects as Principal Investigator:
Integration and coordination of management decisions (with LEDERER, Phillip)
CERG HKUST617/96H HK$222,000 Nov 1996 - Nov 1998

Representative Recent Publications:


KEVIN C. W. CHEN

Associate Professor
(2358-7585; acchen@ust.hk)
PhD, University of Illinois, Urbana-Champaign (1985)

Asst and Assoc Professor, Rutgers University, New Brunswick (1989-)

**Current Research Activities:**

Relationship between accounting information and securities pricing; the role of accounting information in contract enforcement and stock market regulation.

**Active Projects as Principal Investigator:**

A comparison of the executive compensation structure of firms managed by founders and hired managers

DAG DAG96/97.BM03 HK$45,000 Nov 1996-Feb 1999

The informational value of financial statements based on International Accounting Standards (IAS): The case of China's A- and B-share experiment

DAG DAG97/98.BM11 HK$65,532 Jun 1998-May 1999

**Representative Recent Publications:**


**BRIAN WALLACE SEMKOW**

Associate Professor

(2358-7560; acbanzai@ust.hk)
PhD, Queen's University (1982)

LLB, University of Toronto (1983)

Admitted to California and New York Bars (1990, 1991)

Visiting Professor, Faculty of Management, University of Calgary (1989-94)

Adjunct Professor, USC Law Center (1988) and McGill Law School (1987)

Current Research Activities:

Law and economics; Asian financial markets.

Active Projects as Principal Investigator:

Chinese corporate governance and finance: The domestic, regional and international implications

Chinese financial markets and institutions: The legal issues of the liberalization and internationalization of the financial regulatory regime
DAG DAG96/97.BM16 HK$72,000 Nov 1996 - Oct 1998

The law of Chinese financial markets and institutions-the legal issues of the liberalization and internationalization of the financial regulatory regime
CERG HKUST6210/97H HK$278,200 Dec 1997 - Apr 2000

ANDREW H. T. CHAN

Assistant Professor

(2358-7570; acandrew@ust.hk)

PhD, Purdue University (1994)

Current Research Activities:

Role of accrual- versus cash-based accounting information; financial statement analysis.

Active Projects as Principal Investigator:

Equity valuation indicators for Hong Kong companies
RGC DAG95/96.BM03 HK$35,000 Dec 1995-Dec 1997

Representative Recent Publications:


Chan, A. (1997) "Equity Valuation Indicators of HK Companies", working paper.


DEREK KWOK-WING CHAN

Assistant Professor

(2358-7571; acdkchan@ust.hk)

PhD, University of British Columbia (1995)

Instructor, University of British Columbia (1994)

Current Research Activities:

Economic analysis of audit markets; equilibrium models of regulation of auditors; information economics.

Active Projects as Principal Investigator:

"Low-balling" and efficiency in a two-period specialization model of auditing competition
RGC DAG95/96.BM02 HK$35,000 Dec 1995-Aug 1996
The effects of proportionate liability rule on audit quality and capital investment
DAG DAG96/97.BM06 HK$40,000 Dec 1996-Aug 1998
Auditor mergers and public interests
DAG DAG97/98.BM01 HK$30,000 Jan 1998-Feb 1999

Representative Recent Publications:


Economic Letters, 42:391-397.

YEW MING CHIA

Assistant Professor

(2358-7559; acymchia@ust.hk)

PhD, Griffith University (1992)

Current Research Activities:

Financial controls; management accounting systems design for organizations; behavioral accounting research; accounting education.

Active Projects as Principal Investigator:

What drives the accounting students?
RGC DAG95/96.BM04 HK$35,000 Dec 1995-Aug 1997
Profiling the career drivers of public accountants in the Big Six accounting firms
DAG DAG96/97.BM02 HK$40,000 Jan 1997-Sep 1999
A regional comparison of the career drivers of accounting students in HK SAR and Shanghai
DAG DAG97/98.BM73 HK$30,000 Apr 1998-Oct 1999

Representative Recent Publications:


KIM CHUNG KWEON  
Assistant Professor  
(2358-7568; acckim@ust.hk)  

PhD, University of Pittsburgh (1994)  
Lecturer, University of Pittsburgh (1990-94)  

Current Research Activities:  
Income tax reporting behavior; empirical analysis of incentive-related issues; information issues in experimental economics.  

Active Projects as Principal Investigator:  
Curse of knowledge in ultimatum games: An experimental evidence  
DAG DAG96/97.BM05 HK$40,000 Dec 1996-May 1999  
The interaction of culture and equity in tax compliance: Experimental investigation in Hong Kong and the U. S.  
DAG DAG97/98.BM10 HK$30,000 Apr 1998-Mar 1999  

Representative Recent Publications:  

SABRINA KWAN  
Assistant Professor  
(2358-7566; acskwan@ust.hk)  

PhD, London Business School (1996)  
Auditor, Deloitte, Haskins and Sells (1985-88)  

Current Research Activities:  
Accounting and capital markets; taxation.
Active Projects as Principal Investigator:

An examination of equity carve-outs in Hong Kong
DAG DAG96/97.BM01 HK$45,000 Jan 1997 - Jun 1999

Tax-motivated earnings management in a transitional economy: The case of Foreign Investment Enterprises in China
DAG DAG97/98.BM12 HK$30,000 Feb 1998 - Jan 2000

Tax-motivated earning management in a transitional economy: The case of the "Double Holiday Triple Reduction" Policy in China
RGC CERG HKUST6170/98H HK$436,000 Oct 1998-Sep 2000

Representative Recent Publications:


HYUN KOO LEE
Assistant Professor
(2358-7584; aclee@ust.hk)

Current Research Activities:
Empirical research on compensation and contracts.

Active Projects as Principal Investigator:

Inside performance information and compensation: A case of employee stock options
DAG DAG98/99.BM02 HK$45,000 Jan 1998 - Dec 1999

FLETCHER O. LEE
Lecturer-in-Law
(2358-7557; acfolee@ust.hk)
PhD, University of Freiburg (Germany)
LLM, University of Virginia
JD, University of Pennsylvania
Carnegie Study of New Nations Fellow, University of Chicago
Associate, Brown and Wood, New York
Assoc Professor and Asst Director, East Asian Center, Washington University

Current Research Activities:
The impact of legal, political, and economic developments on international trade, business, investment, and finance.

Active Projects as Principal Investigator:
China law and business practice
UGC HIA96/97.BM07 HK$40,000 Jan 1997 - Jun 1997
China and the law merchant
RGC DAG96/97.BM74 HK$25,000 Feb 1997 - Feb 1998
Capital markets law: Structuring debt and equity financing-including micromodels for Hong Kong business and industry, and macromodels for privatization of PRC state enterprises
RGC DAG95/96.BM09 HK$40,000 Dec 1995 - Aug 1997
Firm strategies and economic performance in China
DAG DAG97/98.BM69 HK$38,000 Jul 1997 - Dec 1998
RGC HKUST6174/98H HK$208,000 Jul 1998 - Jul 1999

Representative Recent Publications:
Lee, O. (in press) "I Want To See Not To Be Seen! Teaching `Moot Court' Debating Skills through Interactive Multimedia", The 1st Conference to Promote Teaching and Hearing Quality in Teaching and Hearing, a Celebration of Best Practices in Hong Kong Higher Education, University Grants Committee of Hong Kong and Higher Education Institutions in Hong Kong, Dec 10-11.

Lee, O. (1998) "Accountability' and `Quality': in the Research Assessment Policy of the University Grants Committee (Hong Kong)". The Times Higher Education Supplement, Aug 14, Commonwealth Section:xiii, as "Scrutineers Perpetuate Reign of Error."

Lee, O. (1998) "What is Teaching and Learning Quality? The `TLQPR' in Hong Kong: Toward Balancing the Roles of Peer Review and Student Evaluation", International Conference on the Application of Psychology to Quality of Learning and Teaching,
SUIL PAE

Assistant Professor

(2358-7576; acpae@ust.hk)

PhD, University of British Columbia (1996)

Current Research Activities:

Economic analysis of auditors' legal liability; welfare implications of disclosure policy regulation; role of accounting information in organizations and markets.

Active Projects as Principal Investigator:

- Firm value, audit quality, and social welfare in the presence of costly litigation against auditors
  DAG DAG96/97.BM08 HK$45,000 Oct 1996 - Sep 1998
- Endogenous assurance and optimal legal liability in a sequential audit process
  DAG DAG97/98.BM03 HK$30,000 Oct 1997 - Sep 1999

Representative Recent Publications:


CHUL W. PARK
Assistant Professor
(2358-7575; acparkc@ust.hk)

PhD, Washington University (1994)

Current Research Activities:

Earnings management; capital market and investment analysis; CEO turnover and performance measures.

Active Projects as Principal Investigator:

A theory of accounting changes and its test using depreciation method switches
RGC HKUST525/95H HK$150,000 Aug 1995 - Jul 1998

Abnormal profitability and investment, and their links to return-earnings relations
DAG DAG96/97.BM12 HK$65,000 Sep 1996 - Aug 1999

The effect of competition on CEO turnover with DEFOND, Mark L
DAG DAG97/98.BM02 HK$30,000 Oct 1997 - Sep 1999

Representative Recent Publications:


K. P. RAMASWAMY

Visiting Assistant Professor
(2358-7556; acramasw@ust.hk)

PhD, University of Kansas (1993)

Visiting Asst Professor, University of New Hampshire (1993-94)

Current Research Activities:

Management accounting; international accounting; financial accounting; mergers and acquisitions.

Active Projects as Principal Investigator:

Long-term performance issues in mergers & acquisitions and accounting control systems in East Asia

RGC DAG95/96.BM80 HK$20,000 Mar 1996 - Mar 1998
(1) Comparative research on management accounting (2) Long-term performance issues of mergers & acquisitions

DAG DAG96/97.BM04 HK$30,000 Jan 1997 - Aug 1999
Determinants of post-merger performance and comparison of tender offers v/s mergers; cash buy-outs v/s stock swago

DAG DAG97/98.BM84 HK$20,000 Jun 1998 - Jun 1999

Representative Recent Publications:


EARL K. STICE
Assistant Professor

PhD, Cornell University (1988)
Asst Professor, Rice University (1990-95)
Asst Professor, University of Arizona (1987-90)

Current Research Activities:
Financial market-based accounting research.

Active Projects as Principal Investigator:
Stock splits and stock dividends: The importance of identifying the actual accounting treatment
CERG HKUST6202/97H HK$257,600 Jul 1997 - Jun 1998

Representative Recent Publications:


T. J. WONG
Assistant Professor
(2358-7574; actjwong@ust.hk)
PhD, University of California, Los Angeles (1990)

Asst Professor of Accounting, University of Maryland (1990-94)

Current Research Activities:

Information disclosure issues in accounting and auditing, including capital markets; agency theory; audit quality and auditor switches.

Active Projects as Principal Investigator:

Accounting choices and valuation of initial public offerings of Chinese common shares (with LEE, Jevons C. W.)

RGC HKUST524/95H HK$445,000 Oct 1995 - Sep 1998

The effect of audit fees on auditor independence: Evidence from earnings management among Hong Kong listed companies

CERG HKUST619/96H HK$392,000 Aug 1996 - Aug 1999

Representative Recent Publications:


BING XIANG

Assistant Professor

(2358-7565; acbxiang@ust.hk)

PhD, University of Alberta (1991)

Assoc Professor, University of Calgary (1990-93)

Current Research Activities:
Restructuring state-owned enterprises; corporate governance; stock prices and accounting information; China-related accounting issues.

**Active Projects as Principal Investigator:**

Restructuring the PRC's state-owned enterprises: The case of Shanghai petrochemical.
RGC DAG95/96.BM12 HK$35,000 Dec 1995 - Jun 1997

Accounting practice of Chinese enterprises
UGC HIA96/97.BM06 HK$50,000 Jan 1997 - Jun 1997

Managerial corruption and owner-manager firms
DAG DAG96/97.BM09 HK$40,000 Jan 1997 - Dec 1998

Development of teaching cases on the accounting practice of Chinese enterprises
DAG DAG97/98.BM04 HK$38,000 Dec 1997 - May 1999

**Representative Recent Publications:**


Xiang, B. (in press) "Listing the large SOEs: The only road to success", China Reform.


**DINGBO XU**

Assistant Professor
(2358-7563; acdingbo@ust.hk)

PhD, University of Minnesota (1996)

**Current Research Activities:**

Coordination of communication in a decentralized system; the role of financial disclosure to capital markets.
Active Projects as Principal Investigator:

The costs and benefits of sharing the buyer's private information
DAG DAG96/97.BM15 HK$45,000 Oct 1996 - Dec 1998
Long term commitment and information sharing
DAG DAG97/98.BM09 HK$30,000 Dec 1997- May 1999

Representative Recent Publications:


ANDREW YIM

Assistant Professor
(2358-7558; acatyim@ust.hk)

PhD, Yale University (1995)
Lecturer, University of Hong Kong (1992-95)

Current Research Activities:

Analytical accounting theory; managerial accounting.

Active Projects as Principal Investigator:

Division controllership reporting arrangements and renegotiable contracts: Will the principal ever prefer wider asymmetry of information?
RGC DAG95/96.BM13 HK$40,000 Dec 1995 - Aug 1997
Variance investigation in a renegotiable contract framework (with ANTLE, Rick)
DAG DAG96/97.BM18 HK$50,000 Jan 1997 - Dec 1999
Tax compliance game with uncertainty-sensitive taxpayers: an application and refinement of the Choquet expected utility theory

DAG DAG97/98.BM13 HK$30,000 Jan 1998 - Dec 1999

**Representative Recent Publications:**


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**SEUNG WEON YOO**

*Assistant Professor*

(2358-7564; acyoo@ust.hk)

*Ph.D, University of Wisconsin, Madison (1997)*

**Current Research Activities:**

Roles of managerial accounting information in the changing manufacturing environment; Strategic interactions between managers, auditors, and investors.

**Active Projects as Principal Investigator:**

Cooperation and incentives in teams

DAG DAG97/98.BM70 HK$40,000 Dec 1997 - Dec 1999

**Representative Recent Publications:**


GUOCHANG ZHANG
Assistant Professor
(2358-7569; acgzhang@ust.hk)

PhD, University of British Columbia (1992)
Asst Professor, University of Waterloo (1991-93)

Current Research Activities:
Accounting-based equity valuation; corporate disclosure and capital markets; Agency-based research on finance and accounting issues.

Active Projects as Principal Investigator:
Insider trading and corporate investment decisions
RGC DAG95/96.BM14 HK$35,000 Dec 1995 - Dec 1997
Large shareholder expropriation, control mechanisms, and corporate ownership structure
RGC DAG96/97.BM13 HK$40,000 Jan 1997 - Dec 1998
The costing system and managerial uses of cost information in the Shanghai petrochemical company: A field study
CERG HKUST6207/97H HK$223,100 Jan 1998 - Dec 1999

Representative Recent Publications:


Department of Economics

The mission of the Department of Economics is to become one of the best economics departments in East Asia by the turn of the century. It aims to attain international recognition through the quality of its teaching programs, research output, and public service.

The Department emphasizes frontier academic research, as well as the application of rigorous and systematic analysis to important economic issues of the day. It plans to build core research groups in: (1) econometrics, (2) economic growth and development, (3) industrial organization and theory of the firm, and (4) international economics. In addition, researchers in applied and theoretical microeconomics and macroeconomics will focus on topics of particular interest to the Asia-Pacific region, especially China.

The faculty will provide public service based on their expertise and research findings.

Research Profile

LEONARD K. CHENG
Professor and Department Head

LUNG-FEI LEE
Professor

JUSTIN YIFU LIN
Professor

SOO HONG CHEW
Reader

SIU FAI LEUNG
Associate Professor

FRANCIS T. LUI
Associate Professor

GUOFU TAN
Visiting Associate Professor

SONGNIAN CHEN
Assistant Professor

WOON GYU CHOI
Assistant Professor

DAVID COOK
Assistant Professor
EMILY T. CREMERS

Visiting Assistant Professor
JAE YOUNG KIM

Assistant Professor
SON KU KIM

Assistant Professor
YUM KEUNG KWAN

Visiting Assistant Professor
HUAGANG LI

Visiting Assistant Professor
ZHIQIANG LIU

Assistant Professor
LARRY D. QIU

Assistant Professor
ZHIGANG TAO

Assistant Professor
GRANT A. TAYLOR

Assistant Professor
SUSHENG WANG

Assistant Professor
YI WEN

Assistant Professor
CHANGQI WU

Assistant Professor
DANYANG XIE

Assistant Professor
WEI ZHANG

Visiting Assistant Professor
LIJING ZHU

Assistant Professor
LEONARD K. CHENG
Professor and Department Head
(2358-7621; leonard@ust.hk)

PhD, University of California, Berkeley (1980)
Reader in Economics, HKUST (1992-94)
Assoc Professor of Economics, University of Florida (1985-92)
Visiting Professor, Fudan University (1988)
Adjunct Professor, Shantou University (1994- )

Current Research Activities:
International trade and investment; market structure and applied game theory; economics of innovation and imitation.

Active Projects as Principal Investigator:
The Nansha IT community as a magnet for technology transfer: A case study
DAG DAG97/98.BM85 HK$45,830 Jun 1998 - Jun 1999
An economic analysis of Hong Kong's container handling industry (with QIU, Larry D)
CERG HKUST6211/97H HK$200,000 Jan 1998 - Dec 1999

Representative Recent Publications:
LUNG-FEI LEE

Professor

(2358-7600; lflee@ust.hk)

PhD, University of Rochester (1977)

Professor of Economics, University of Michigan (1991-94) Department of Economics
Professor of Economics, University of Minnesota (1984-91)

Current Research Activities:

Econometrics; microeconomics; statistics; general economics.

Active Projects as Principal Investigator:

Hypothesis tests with simulation estimation
RGC DAG95/96.BM20 HK$30,000 Dec 1995 - May 1997
Accelerated monte carlo simulation estimation of dynamic discrete choice models (with ZHANG, Wei)
DAG DAG97/98.BM14 HK$50,000 Oct 1997 - Apr 2000
Monte Carlo studies on simulation estimation of dynamic and panel econometric models
CERG HKUST595/96H HK$499,000 Sep 1996 - Aug 1999

Representative Recent Publications:


JUSTIN YIFU LIN

Professor
(2358-7608; jylin@ust.hk)

PhD, University of Chicago (1986)

Postdoctoral Fellow, Economic Growth Center, Yale University (1987)

Professor of Economics (1993- ) and Director, China Center for Economic Research (1994-), Peking University

Current Research Activities:

Chinese economy; economic development; economic history; agricultural economics.

Active Projects as Principal Investigator:

Growth and inflation in transitional economies
RGC DAG95/96.BM17 HK$30,000 Nov 1995 - Feb 1996
Development policy and economic growth: A theoretical and empirical study (with LI, Zhou; CAI, Fang; XU, Dianqing)
DAG DAG96/97.BM27 HK$80,000 Jan 1997 - Aug 1998
Price changes and supply response in Chinese agriculture
DAG DAG97/98.BM18 HK$54,000 May 1998 - Apr 1999

Representative Recent Publications:


SOO HONG CHEW

Reader
(2358-7603; shchew@ust.hk)

Professor, University of California, Irvine (1995-)

Current Research Activities:
Economics of uncertainty.

Active Projects as Principal Investigator:
Attitude toward uncertainty: The discovery process
RGC DAG95/96.BM26 HK$50,000 Dec 1995 - Nov 1996
Judgment and decision under ill defined uncertainty
RGC DAG96/97.BM33 HK$40,000 Nov 1996 - Aug 1997
Decision making under ill-defined uncertainty
CERG HKUST6234/97H HK$434,420 Jul 1997 - Jun 1999

Representative Recent Publications:


SIU FAI LEUNG

Associate Professor
(2358-7618; sfleung@ust.hk)

PhD, University of Chicago (1987)
Assoc Professor of Economics, University of Rochester (1994-1998)

Current Research Activities:
Microeconomics; economics of human behavior; labor economics; econometrics.

Active Projects as Principal Investigator:
An empirical analysis of crime in Hong Kong
RGC DAG95/96.BM15 HK$55,000 Dec 1995 - Jul 1997
Measures of crime: Official records versus self reports
DAG DAG96/97.BM19 HK$30,000 Jan 1997 - Sep 1998
A hazard analysis of drug use
DAG DAG97/98.BM21 HK$52,600 Jan 1998 - Dec 1998

Representative Recent Publications:


FRANCIS T. LUI

Associate Professor
(2358-7606; fnfnlui@ust.hk)

PhD, University of Minnesota (1985)
Assoc Professor of Economics, State University of New York at Buffalo (1991-93)

Current Research Activities:
Economic growth; social security; corruption; Chinese economy; macroeconomics.

Active Projects as Principal Investigator:
Hong Kong's currency board and its macroeconomic implications (with KWAN, Yum Keung)
RGC DAG96/97.BM25 HK$77,000 Dec 1996 - Nov 1997
Macroeconomic implications and stability of Hong Kong's currency board (with KWAN, Yum Keung)
CERG HKUST6217/97H HK$428,000 Dec 1997 - Nov 1999

Representative Recent Publications:


GUOFU TAN

Visiting Associate Professor
(2358-7597; guofutan@ust.hk)

PhD, California Institute of Technology (1990)
Asst and Assoc Professor of Economics (1990 - ), University of British Columbia

Current Research Activities:
Auction and contract theory; economics of information and incentives; industrial organization.

Active Projects as Principal Investigator:
A theory of collective competition
DAG DAG96/97.BM32 HK$43,000 Sep 1996 - Jun 1998
Pricing strategies of new residential properties in Hong Kong
DAG DAG97/98.BM52 HK$59,000 Nov 1997 - Apr 1999

Representative Recent Publications:

SONGNIAN CHEN

Assistant Professor
(2358-7602; snchen@ust.hk)
**PhD, Princeton University (1994)**

**Current Research Activities:**

Econometrics.

**Active Projects as Principal Investigator:**

Semiparametric estimation of conditional expectation (with LEE, Lung-fei)

RGC DAG95/96.BM25 HK$30,000 Dec 1995 - Dec 1997

Estimation of a location parameter for a binary choice model

DAG DAG97/98.BM17 HK$42,000 Jun 1998 - Jun 1999

**Representative Recent Publications:**


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**WOON GYU CHOI**

**Assistant Professor**

(2358-7607; wgchoi@ust.hk)

**PhD, University of California, Los Angeles (1995)**

**Current Research Activities:**

Macro and monetary economics; applied econometrics; international finance.

**Active Projects as Principal Investigator:**

Monetary policy and money demand asymmetry

DAG DAG95/96.BM18 HK$55,000 Dec 1995 - Mar 1998

Monetary policy and business cycle durations

DAG DAG96/97.BM24 HK$40,000 Dec 1996 - Jun 1998

Measuring the liquidity effect using a consumption-and-production-based asset pricing model

DAG DAG97/98.BM20 HK$53,000 Dec 1997 - Feb 1999

Inverted Fisher Hypothesis. Inflation Forecastability, and Asset Substitutions
Representative Recent Publications:

**Choi, W.G.** (in press) "Asymmetric Liquidity Effects Across Monetary Policy Stances", *Journal of Money, Credit and Banking*.


**DAVID COOK**

Assistant Professor

(2358-7614; davcook@ust.hk)

*PhD, University of Wisconsin, Madison (1996)*

**Current Research Activities:**

Macroeconomics and monetary economics; economic growth.

**Active Projects as Principal Investigator:**

Research on business cycles

DAG DAG96/97.BM28 HK$43,000 Nov 1996 - Sep 1999

Representative Recent Publications:

**Cook, D.** (1997) "Demographics of Demand", working paper.

**Cook, D.** (1998) "Time to Enter and Business Cycles", working paper.

**Cook, D.** (1998) "The Demographics of Demand", working paper.


EMILY T. CREMERS
Visiting Assistant Professor
(2358-7598; cremerse@ust.hk)

PhD, University of Minnesota (1991)
Asst Professor, St. Louis University (1991- )

Current Research Activities:
Dynamic trade theory; open macroeconomics.

Active Projects as Principal Investigator:
Commodity arbitrage and real interest rate parity
DAG DAG96/97.BM30 HK$28,000 Nov 1996 - Jul 1999
Neoclassical growth with trade: An overlapping generations approach
DAG DAG97/98.BM22 HK$30,000 Jan 1998 - Aug 1999

Representative Recent Publications:


JAE YOUNG KIM

Assistant Professor
(2358-7629; jykim@ust.hk)

PhD, University of Minnesota (1994)
Research Fellow, Yale University (1990-93)
Asst Professor, State University of New York at Albany (1994-97)

Current Research Activities:
Econometrics; macroeconomics; international finance.

Active Projects as Principal Investigator:
Testing for and estimation of cointegration when the cointegration relation prevails only during one or more disconnected intervals of sample period
DAG DAG97/98.BM53 HK$59,000 Nov 1997 - Jan 1999

Representative Recent Publications:


Kim, J.Y. (in press) "Detection of Structural Change When the Form and the Date of the Change are Unknown", Journal of Economic Theory and Econometrics.

SON KU KIM

Assistant Professor
(skkim@ust.hk)

PhD, University of California, Los Angeles (1991)
Lecturer, University of California, Los Angeles (1991-92)

Current Research Activities:
Microeconomics; uncertainty and information; game theory; industrial organization.

**Representative Recent Publications:**


**YUM KEUNG KWAN**

*Visiting Assistant Professor*

*PhD, University of Minnesota (1991)*

*Asst Professor of Econometrics, University of Chicago (1989-93)*

**Current Research Activities:**

Bayesian inference; econometrics; macroeconomics; numerical solution of rational expectation models; Hong Kong's economy.

**Representative Recent Publications:**


Kwan, Y.K. (in press) "Asymptotic Baysian Analysis Based on a Limited Information
HUAGANG LI
Visiting Assistant Professor
(2358-7596; hughli@ust.hk)

PhD, University of California, Los Angeles (1996)

Current Research Activities:
Development economics; Chinese economy; Applied Microeconomics (Productivity, Auction).

Active Projects as Principal Investigator:
Economic development and international openness - measurement issues
DAG DAG96/97.BM26 HK$54,000 Jan 1997 - Jun 1998
Chinese industrial productivity change
CERG HKUST6213/97H HK$280,340 Nov 1997 - Oct 1999

Representative Recent Publications:

ZHIQIANG LIU
Assistant Professor
(2358-7616; zhiqinag@ust.hk)

PhD, State University of New York at Buffalo (1992)

Research Fellow, Institute for the Study of Free Enterprise Systems, State University of New York at Buffalo (1988-92)

Current Research Activities:
Applied microeconomics; applied econometrics; productivity and economic growth.

Active Projects as Principal Investigator:
Fiscal decentralisation and economic development and growth in China (with LIN, Justin Y.)
Representative Recent Publications:


LARRY D. QIU

Assistant Professor

(2358-7628; larryqiu@ust.hk)

PhD, *University of British Columbia* (1993)

Current Research Activities:

International trade and investment; industrial organization.

Active Projects as Principal Investigator:

An analysis of voluntary import expansions

RGC DAG95/96.BM21 HK$30,000 Dec 1995 - May 1997

China's foreign trade and investment

UGC UGC96/97.BM02 HK$90,000 Jan 1997 - Jun 1997

Industrial reform in transitional economies: The Chinese airlines industry (with ZHANG, Anming)

CERG HKUST598/96H HK$345,000 Sep 1996 - Aug 1999

Representative Recent Publications:


ZHIGANG TAO

*Assistant Professor*

*PhD, Princeton University (1992)*

**Current Research Activities:**

Economics of organization; management and strategy.

**Active Projects as Principal Investigator:**

Analysis of governance structure of joint ventures in the framework of incomplete contract: Theory and evidence (with WU, Changqi)

RGC HKUST545/95H HK$361,000 Jul 1995 - Jun 1998

**Representative Recent Publications:**


GRANT A. TAYLOR
Assistant Professor
(2358-7615; taylor@ust.hk)

PhD, University of Southern California (1992)
Lecturer, University of Southern California (1991-92)

Current Research Activities:
Econometrics; applied microeconomics; dynamic optimization.

Representative Recent Publications:

SUSHENG WANG
Assistant Professor
(2358-7630; sswang@ust.hk)

PhD, University of Toronto (1991)
Asst Professor of Economics, Concordia University (1991-93)
Lecturer, Nankai University (1985)

Current Research Activities:
Information Economics.

Active Projects as Principal Investigator:
Aggregate wealth
RGC DAG95/96.BM22 HK$30,000 Jan 1996 - Jun 1998
The rationality of fiscal policies
CERG HKUST593/96H HK$199,000 Oct 1996 - Sep 1999

Representative Recent Publications:


**YI WEN**

*Assistant Professor*

(2358-7613; yiwen@ust.hk)

*PhD, University of Iowa (1996)*

**Current Research Activities:**

Business cycle modeling; monetary policy.

**Active Projects as Principal Investigator:**

Residential investment and economic growth


The propagation mechanism of investment cycles

DAG DAG97/98.BM19 HK$50,000 Nov 1997 - Jun 1999

**Representative Recent Publications:**


CHANGQI WU
Assistant Professor
(2358-7609; fnchqiwu@ust.hk)

PhD, University of Leuven (1990)
Research Fellow, University of Leuven (1990-91)

Current Research Activities:
Industrial organization; economics of R&D; industry studies and competitive strategy; China's industries.

Active Projects as Principal Investigator:
Enterprise groups and market structure in China's industry
RGC DAG96/97.BM21 HK$40,000 Oct 1996 - Apr 1998

Representative Recent Publications:


DANYANG XIE
Assistant Professor
(2358-7604; dxie@ust.hk)
PhD, University of Chicago (1992)

Asst Professor, University of Montreal (1991-93)

Current Research Activities:
Economic growth; general equilibrium theory.

Active Projects as Principal Investigator:
Superneutrality and optimum quantity of money in a model with production externality
RGC DAG95/96.BM19 HK$30,000 Nov 1995 - Jun 1997
Superneutrality and optimum quantity of money in a model with production externality/real
business cycle analysis in an endogenous growth framework
DAG DAG96/97.BM31 HK$80,000 Jan 1997 - Dec 1998

Representative Recent Publications:
Provided?" Journal of Monetary Economics, 41:319-331.
Xie, D. (in press) "An Endogenous Growth Model with Expanding Range of Consumer
Xie, D., Zou, H.F. and Davoodi, H (in press) "Fiscal Decentralization and Economic Growth
Rebelo, S and Xie, D. (in press) "On the Optimality of Interest Rate Smoothing", Journal of
Monetary Economics.

WEI ZHANG
Visiting Assistant Professor

PhD, University of Pittsburgh (1996)

Current Research Activities:
Econometrics; labor economics; applied microeconomics.

Active Projects as Principal Investigator:
Gender gaps in China's labor market
Gender gaps in China's labor market

Representative Recent Publications:


LIJING ZHU

*Assistant Professor*

*(fnlijing@ust.hk)*

*PhD, University of Western Ontario (1991)*

*Asst Professor of Economics, University of Windsor (1990-91)*

**Current Research Activities:**

Theory of organizations; auction theory; non-pricing resource allocation mechanisms; comparative economic systems; Chinese economy.

**Active Projects as Principal Investigator:**

The impact of China's joining the GATT on the Chinese economy and the repercussions for Hong Kong and Taiwan (with ZENG, Jinli; FUNG, Ka Hing Samuel)

RGC HKUST548/95H HK$543,000 Jul 1995 - Jul 1998

**Representative Recent Publications:**


Establishment of a Market-Oriented Social Security System in China, Chinese Academy of Social Science, Beijing, PRC.


The mission of the Department of Finance is to teach and conduct research on the financial markets and the investment and financial decisions faced by individuals and corporations. While striving to be one of the top finance programmes in the world, the Department places special emphasis on developing expertise on Asian financial markets. The Department has established a Centre for Asian Financial Markets to develop data and knowledge bases and attract the necessary people to build a research center on Asian financial markets similar to those that currently exist for Europe, Japan, and the United States.

Research Profile

K. C. Chan
Professor and Department Head

Yuk-Shee Chan
Professor and Dean of Business and Management

Nai-Fu Chen
Professor

Sheridan Titman
Adjunct Professor

Ronald W. Anderson
Visiting Professor

Kalok Chan
Associate Professor

Jin-Chuan Duan
Professor

Chuan-Yang Hwang
Associate Professor

K. C. John Wei
Associate Professor

Tim R. Adam
Assistant Professor

Jess Beltz
Visiting Assistant Professor
Research Profile

K. C. CHAN

Professor and Department Head

(2358-7669; kcchan@ust.hk)

PhD, University of Chicago (1985)

Assoc Professor, Ohio State University (1991-94)

Current Research Activities:

Stock market pricing model and testing; market microstructure; portfolio management.

Active Projects as Principal Investigator:

Areas of Excellence in financial services (with BIDDLE, Gary C)

AOE AOE97/98.BM02 HK$300,000 May 1998 - Nov 1998

Investigation of the behavior of the Hong Kong Stock Market and Stock Index Futures Market around the 1997 October financial crisis (with HWANG, Chuan Yang; CHAN, Ka Lok)

DAG DAG97/98.BM81 HK$65,320 Jun 1998 - Jun 1999

Representative Recent Publications:


YUK-SHEE CHAN

Professor and Dean of Business and Management
(2358-7549; fnychan@ust.hk)

PhD, University of California, Berkeley (1982)
Justin Dart Term Professor of Finance, University of Southern California (1990-93)
Assoc/Full Professor of Finance, University of Southern California (1986-90)
Asst/Assoc Professor of Finance, Northwestern University (1982-1986)

Current Research Activities:
Corporate finance; financial institutions; contract and agency theory; bank regulation.

Active Projects as Principal Investigator:
Deposit insurance and banking regulation
DAG DAG97/98.BM75 HK$50,000 Jun 1998 - Jun 1999
Initiation of high impact area of China business and management
HIA HIA96/97.BM01 HK$2,260,000 Jan 1997 - Jun 1998

Representative Recent Publications:
NAI-FU CHEN

Professor
(2358-7670; fnnchen@ust.hk)

PhD, University of California, Berkeley (1975)
PhD, University of California, Los Angeles (1981)
Professor of Finance, University of California, Irvine (1989-)
Asst and Assoc Professor of Finance, University of Chicago (1981-89)

Current Research Activities:
Financial investments and macro-economic factors; contingent claims-options and futures; financial restructuring; developing economies and their financial markets; cross-countries hedged investments; exchange rate stabilization mechanism.

Active Projects as Principal Investigator:
Ownership structure and security returns in Japan
RGC DAG95/96.BM32 HK$20,000 Nov 1995 - Nov 1996

Representative Recent Publications:


SHERIDAN TITMAN

Adjunct Professor
PhD, Carnegie Mellon University (1981)

Collins Professor of Finance, Boston College (1994- )

Professor of Finance (1989-94) and Vice Chairman (1990-92), Anderson Graduate School of Management, University of California, Los Angeles

Current Research Activities:
Corporate finance; investments; accounting; real estate.

Representative Recent Publications:


RONALD W. ANDERSON
Visiting Professor

PhD, University of Michigan (1976)

Professeur Ordinaire, Université Catholique de Louvain, Belgium (1990- )

Professor of Economics, City University of New York, Graduate Center (1984-90)

Associate Professor Graduate School of Business, Columbia University (1980-84)

Current Research Activities:

Representative Recent Publications:


**KALOK CHAN**

Associate Professor

(2358-7669; kachan@ust.hk)

*PhD, Ohio State University (1990)*

*Asst and Assoc Professor, Arizona State University (1990- )*

**Current Research Activities:**

Dynamics of asset prices; market microstructure; derivatives; international financial markets.

**Active Projects as Principal Investigator:**

The role of futures trading and its impact on the state bond market in China

RGC DAG95/96.BM31 HK$45,000 Jan 1996 - Jun 1997

The role of futures trading and its impact on the state bond market in China (with CHANG, Eric C.; WEI, Kuo-chiang)

RGC HKUST601/96H HK$460,000 Jan 1997 - Dec 1998

The role of futures trading and its impact on the state bond market in China (with WEI, Kuo-chiang; CHANG, Eric C.)

CERG HKUST601/96H HK$460,000 Jan 1997 - Dec 1999

**Representative Recent Publications:**


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**JIN-CHUAN DUAN**

*Professor*

(2358-7671; jcduan@ust.hk)

PhD, *University of Wisconsin, Madison* (1986)

Asst Professor, *McGill University* (1986-92)

Assoc Professor, *McGill University* (1992-96)

**Current Research Activities:**

Option pricing theory and numerical methods; financial time series modeling; Banking.

**Active Projects as Principal Investigator:**

Testing long-memory equilibrium interest rate models

RGC DAG96/97.BM35 HK$50,000 Nov 1996 - Mar 1998

American option pricing under GARCH: numerical method and empirical studies (with SIMONATO, Jean-Guy)

CERG HKUST6230/97H HK$460,100 Aug 1997 - Jul 1999

**Representative Recent Publications:**


**CHUAN-YANG HWANG**

Associate Professor

(2358-7682; cyhwang@ust.hk)

*PhD, University of California, Los Angeles (1988)*

*Asst Professor, University of Pittsburgh (1988-96)*

**Current Research Activities:**

Market microstructure; insider trading; futures and options contracts; signaling and asymmetric information; investment; corporate governance.

**Active Projects as Principal Investigator:**

Turn of year effect: an microstructure examination

DAG DAG96/97.BM39 HK$90,000 Jan 1997 - Jun 1998

The impact of tick-size changes on market liquidity

DAG DAG97/98.BM29 HK$52,250 Nov 1997 - Oct 1999

**Representative Recent Publications:**


K. C. JOHN WEI

Associate Professor
(2358-7676; johnwei@ust.hk)

PhD, University of Illinois, Urbana (1984)
Assoc Professor of Finance, Indiana University (1989-92)

Current Research Activities:

Asset pricing theories; options and futures; international finance; applications of econometrics in finance.

Active Projects as Principal Investigator:

Price behavior of China-related stocks listed in China, Hong Kong, and the US (with JAGANNATHAN, Ravi; CHANG, Eric C.)
RGC HKUST538/95H HK$383,000 Jan 1996 - Dec 1998

Corporate governance and financial contracting (with WONG, Tak-jun; HWANG, Chuan Yang; GOYAL, Vidhan K.)
UGC RI94/95.BM01 HK$923,000 Nov 1995 - Oct 1998

Firm characteristics and past return trading strategies (with DANIEL, Kent; TITMAN, Sheridan D)
CERG HKUST6233/97H HK$595,700 Jan 1998 - Dec 1999

Representative Recent Publications:


**TIM R. ADAM**  
*Assistant Professor*  
*(2358-7675; adam@ust.hk)*

**Current Research Activities:**  
Financial Risk Management; Capital Budgeting; Capital Structure Decision especially in Mining Industry.

**Active Projects as Principal Investigator:**  
Do firms use derivatives to reduce their dependence on external capital markets?  
DAG DAG97/98.BM24 HK$65,276 Jan 1998 - May 1999  
Do masked to book ratios measure growth opportunities? Evidence from the mining industry.  

**Representative Recent Publications:**  

**JESS BELTZ**  
*Visiting Assistant Professor*  
*(2358-7686; fnbeltz@ust.hk)*

*PhD, Indiana University (1993)*

**Current Research Activities:**  
Credit allocation and regulation; efficient markets and the information content of volume data.

**Active Projects as Principal Investigator:**
Corporate capital structure in Pacific Rim countries

RGC DAG95/96.BM29 HK$30,000 Dec 1995 - Sep 1997

**Representative Recent Publications:**


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**ANDREW CARVERHILL**

Assistant Professor

(2358-7672; fncarver@ust.hk)

PhD, *University of Warwick* (1983)

*Mathematics Research Fellow, University of Warwick* (1983-85)

*Senior Research Fellow, Warwick Business School* (1987-91)

*Visiting Asst Professor, University of North Carolina, Chapel Hill* (1986-87)

**Current Research Activities:**

Options on the term structure of interest rates; dynamic equilibrium in capital markets; efficient valuation of financial options; dynamic risk management.

**Active Projects as Principal Investigator:**

The term structure of interest rates: Full and partial equilibrium analysis (with CHAN, K. C.)

RGC DAG96/97.BM40 HK$100,000 Nov 1996 - Nov 1997

Storage, forward contracting, and price stabilization in commodity markets (with LU, Xiangqian Lewis)

RGC HKUST499/94H HK$145,000 Jul 1995 - Jun 1998

Poisson jump modeling of financial time series, and associated pricing problems (with JING, Bing Yi; TSOI, Allanus H M)

CERG HKUST6229/97H HK$813,200 Sep 1997 - Aug 2001

**Representative Recent Publications:**


Carverhill, A. (in press) "Modelling Long Forward Rates via the Kalman Filter", Recent Developments in Derivative Securities markets - an International Workshop, City University of Hong Kong, Hong Kong, Jun 6-8.


ALEX WING HO CHAN

Assistant Professor
(2358-7668; alexchan@ust.hk)

Active Projects as Principal Investigator:
Asian Euro-convertible bond pricing and exchange rate risk effect
DAG DAG97/98.BM28 HK$30,000 Nov 1997 - Aug 1998

Representative Recent Publications:

JOSEPH P. H. FAN

Assistant Professor
(2358-8016; pffan@ust.hk)

Ph.D, Finance, University of Pittsburgh(1996)

Current Research Activities:
The measurement and valuation of relatedness in corporate diversification; Diversification,
ownership structure, and group affiliation of East Asian corporations; Vertical integration in the petrochemical industry.

**Active Projects as Principal Investigator:**

Price uncertainty, ownership structures and contractual arrangements in the petrochemical industry

RGC HKUST7134/97H HK$364,870 Oct 1997 - Sep 1999

**Representative Recent Publications:**


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VIDHAN KRISHAN GOYAL

Assistant Professor

(2358-7678; goyal@ust.hk)

*PhD, University of Pittsburgh (1994)*

*Visiting Asst Professor of Finance, State University of New York at Buffalo (1994)*

**Current Research Activities:**

Corporate finance; debt contracts; corporate restructuring and governance; banking.

**Active Projects as Principal Investigator:**

Market discipline of bank risk: Evidence from subordinated debt contracts

DAG DAG96/97.BM36 HK$140,000 Jan 1997 - Jun 1999

Growth opportunities and investment policies in the U.S. defense industry

DAG DAG97/98.BM26 HK$55,000 Jun 1998 - May 1999

Studies in dynamic financial structure (with ANDERSON, Ronald)

DAG DAG97/98.BM30 HK$52,000 Nov 1997 - Oct 1998

**Representative Recent Publications:**


ANGELA L. P. NG
Assistant Professor
(2358-7664; angelang@ust.hk)

Active Projects as Principal Investigator:
Volatility spillover effects from Japan and the U.S. to the Pacific Basin
DAG DAG97/98.BM72 HK$50,000 Feb 1998 - Jan 1999
Return volatility and Trading Volume: The Case of the Pacific - Basin Equity Markets.
DAG DAG98/99.BM31 HK$40,000 Dec 1998 - Sep 1999

Representative Recent Publications:

CHEOL PARK
Assistant Professor
(2358-7689; cpark@ust.hk)

PhD, University of Chicago (1995)

Current Research Activities:
Corporate finance; financial markets and institutions; contract theory.

Active Projects as Principal Investigator:
Monitoring and the choice between bank loans and public debt
Representative Recent Publications:


ANN GUENTHER SHERMAN
Assistant Professor
(2358-7677; sherman@ust.hk)

PhD, University of Minnesota (1987)
Asst Professor of Finance, University of Wisconsin, Madison (1987-92)

Current Research Activities:
Investment banking; shelf registration of new security issues; initial public offerings; interaction of investment and financing decisions.

Representative Recent Publications:


JHINYOUNG SHIN
Assistant Professor
(2358-7683; fnshin@ust.hk)

PhD, Carnegie Mellon University (1993)

Current Research Activities:
Market microstructure; corporate finance; investment analysis; derivative securities.

**Active Projects as Principal Investigator:**

Strategic dissemination of information in financial market  
RGC DAG96/97.BM37 HK$26,120 Nov 1996 - Dec 1997  
Pricing and discount pattern of closed-end funds  
DAG DAG97/98.BM25 HK$25,000 Dec 1997 - Dec 1998

**Representative Recent Publications:**


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**WILSON H. S. TONG**

Assistant Professor  
(2358-7679; wilson@ust.hk)

**PhD, Arizona State University (1992)**

**Current Research Activities:**

Foreign currency market; Asian security markets; empirical market microstructure; empirical finance.

**Active Projects as Principal Investigator:**

Blue chips, red chips, and the impact of politics on the Hong Kong stock market (with BAILEY, Warren B)  
CERG HKUST605/96H HK$406,000 Sep 1996 - Aug 1999

**Representative Recent Publications:**


TAKESHI YAMADA
Assistant Professor
(2358-7687; tyamada@ust.hk)

PhD, University of California, Berkeley (1993)
Assoc Professor, Hosei University (1987-94)
Economist, Daiwa Securities Research Institute (1979-83)

Current Research Activities:
Empirical asset pricing; market microstructure; corporate finance.

Active Projects as Principal Investigator:
An analysis of mutual funds: Performance, incentives, and industry analysis (with CHAN, K C)
CERG HKUST6240/97H HK$464,380 Aug 1997 - Jul 1999

Representative Recent Publications:


STEVEN X. WEI
Assistant Professor
(2358-7661; weix@ust.hk)

PhD, University of Toronto (1997)

Current Research Activities:
Empirical finance; derivative securities; econometrics.

Active Projects as Principal Investigator:
Simulation-based inference for dynamic latent data models
DAG DAG97/98.BM27 HK$70,277 Dec 1997 - May 1999

Representative Recent Publications:
Wei, X (1997) "A Bayesian Approach to Dynamic Tobit Models", working paper.

CHU ZHANG
Assistant Professor
(2358-7684; czhang@ust.hk)

PhD, University of Chicago (1992)
Asst Professor, University of Alberta (1991-97)

Current Research Activities:
Theory and empirical study of investment.

Active Projects as Principal Investigator:
On the predicted returns explained by asset pricing models (with KAN, Raymond)
DAG DAG96/97.BM76 HK$50,000 May 1997 - Jan 1999
Representative Recent Publications:

Department of Information and Systems Management

There are two main streams of research in the Department of Information and Systems Management. They are Information Systems (IS) and Operations Management (OM). The discipline of Information Systems is concerned with the application of information technology to achieve the management objectives of profit-oriented and non-profit organizations. In modern society, a major portion of business activities involve the collection, analysis, processing, management, and distribution of information. Computer and telecommunication technologies, if properly applied, have proved to be instrumental in leveraging an organization’s effectiveness. As organizations are increasingly faced with challenges of rapid technology advances in the ever-changing marketplace, there is a strong demand for research in this field.

Operations Management provides the basis for undertaking the work of an organisation and controlling it to a successful completion by means of skills to break work down into tasks, and evaluate the time and resources needed. Included within this area of research are the identification of management problems, modelling and solution of the technical components, interpretation and use of the solution, and solution maintenance.

Research Profile

ALBERT Y. LO
Professor and Acting Department Head

LODE LI
Professor of Information and Systems Management and of Accounting

VIATCHESLAV V. SAZONOV
Visiting Professor

INCHI HU
Associate Professor

SHU MING NG
Associate Professor

KAR YAN TAM
Professor

JAMES CHRISTOPHER WESTLAND
Associate Professor

GRACE AU
Assistant Professor
CHRISTOPHER K. CARTER  
Assistant Professor

PATRICK Y. K. CHAU  
Associate Professor, Associate Dean of Business and Management, and Director of Undergraduate Programs.

KI LING CHEUNG  
Assistant Professor

THEODORE H. CLARK  
Assistant Professor

HARESH GURNANI  
Assistant Professor

RAMESH G. KINI  
Assistant Professor

JAMES KWOK  
Assistant Professor

KARL R. LANG  
Assistant Professor

HUGUES ALAIN LEVEQC  
Assistant Professor

BRUCE A. REINIG  
Assistant Professor

ROY C. SCHMIDT  
Assistant Professor

LI CHUNG SHIH  
Lecturer

MIKE KA PUI SO  
Assistant Professor

JACK TEH  
Visiting Assistant Professor
JAMES Y. L. THONG
Assistant Professor

CHI-MING DAVY WONG
Assistant Professor

SAMUEL P. WONG
Assistant Professor

YAN XU
Visiting Assistant Professor

HONGTAO ZHANG
Assistant Professor

J. LEON ZHAO
Assistant Professor

SHAO-HUI ZHENG
Assistant Professor
Research Profile

ALBERT Y. LO

Professor and Acting Department Head
(2358-7723; imaylo@ust.hk)

PhD, University of California, Berkeley (1978)
Assoc Professor of Statistics, State University of New York at Buffalo (1985-93)

Current Research Activities:
Bayesian statistics; curve estimations; resampling methods; missing data problems.

Active Projects as Principal Investigator:
Application of Markov chain models on solving actuarial problems
RGC DAG95/96.BM50 HK$15,000 Dec 1995 - May 1997
Confidence band of the CDF in the random truncation model
RGC DAG95/96.BM51 HK$15,000 Nov 1995 - Oct 1997
Bayesian estimation of monotone densities and hazard rates
RGC HKUST674/95P HK$331,000 Oct 1995 - Sep 1998

Representative Recent Publications:


LODE LI
Professor of Information and Systems Management and of Accounting
(2358-7580; acli@ust.hk)

PhD, Northwestern University (1984)
Research Fellow in Economics, California Institute of Technology (1984-85)
Asst Professor, Massachusetts Institute of Technology (1985-88)
Assoc Professor and Professor, Yale School of Management (1989- )

Current Research Activities:
Operations management and strategy; economics of operations; game theory; stochastic processes and control; industrial organization; managerial accounting.

Active Projects as Principal Investigator:
Integration and coordination of management decisions
RGC HKUST617/96H HK$222,000 Nov 1996 - Nov 1998

Representative Recent Publications:

Li, L. (1997) "Production with Dividends and Default Penalties", INFORMS, San Diego, 5-8 May.


VIATCHESLAV V. SAZONOV
Visiting Professor
(2358-7733)
PhD and DSc, Steklov Mathematical Institute, Moscow (1968)

Professor, Moscow State University (1971-98)

Leading Research Scientist, Steklov Mathematical Institute, Moscow (1968-)

Current Research Activities:

Bayes consistency; nonparametric statistics; approximation methods in statistics; limit theorems of probability theory; measure theory; foundations of probability theory.

Active Projects as Principal Investigator:

Consistency of Bayes procedures for general invariant models

RGC DAG97/98.BM60 HK$16,000 Sep 1997 - Feb 1998

Representative Recent Publications:


INCHI HU

Associate Professor

(2358-7734; imichu@ust.hk)

PhD, Stanford University (1985)

Asst Professor of Statistics, University of Pennsylvania (1986-92)

Current Research Activities:

Sequential analysis; stochastic control; stochastic process; statistical inference.

Active Projects as Principal Investigator:

PhD, Stanford University (1985)

Asst Professor of Statistics, University of Pennsylvania (1986-92)

Current Research Activities:

Sequential analysis; stochastic control; stochastic process; statistical inference.

Active Projects as Principal Investigator:
Bayesian Sequential analysis and adaptive control

RGC HKUST492/94H HK$348,000 Sep 1994 - Aug 1998

Representative Recent Publications:


**SHU MING NG**

Associate Professor

(2358-7725; imsmng@ust.hk)

*PhD, Carnegie Mellon University* (1986)

*Postdoctoral Fellow, Carnegie Mellon University* (1987)

*Asst Professor of Industrial & Systems Engineering, University of Southern California* (1987-92)

**Current Research Activities:**

Modeling and improvement of manufacturing and management systems; discrete optimization; mathematical programming; supply chain management.

**Active Projects as Principal Investigator:**

Supply chain management and its current development in Hong Kong

DAG DAG97/98.BM67 HK$29,981 Jun 1998 - Jun 1999

**Representative Recent Publications:**


**Ng, S.M.** (1996) "On the Characterization and Measure of Machine Cells in Group..."


**KAR YAN TAM**

*Professor*

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*PhD, Purdue University (1988)*

*Asst Professor of Information Systems, University of Texas, Austin (1987-92)*

*Research Scientist, Electronic Data Systems (1991)*

**Current Research Activities:**

Electronic commerce; investment impact of information technologies; information technology management.

**Active Projects as Principal Investigator:**

An empirical study on online shopping behavior

RGC DAG96/97.BM79 HK$35,000 Jun 1997 - Oct 1997

**Representative Recent Publications:**


JAMES CHRISTOPHER WESTLAND

Associate Professor

(2358-7643; westland@ust.hk)

PhD, University of Michigan (1987)

Assoc Professor of Information and Operations Management, University of Southern California (1987-96)

Current Research Activities:

Electronic markets structure performance and design; microeconomics/Industrial Organization of Information Technology; software cost forecasting.

Active Projects as Principal Investigator:

A comparison of cumulative excess returns to corporate investments in information technology in Malaysia, Taiwan, Singapore and Hong Kong

RGC DAG95/96.BM43 HK$13,000 Dec 1995 - Sep 1996

Cost-benefit accounting and success measures for Hong Kong/China information technology investments

RGC DAG96/97.BM68 HK$35,000 Jun 1997 - Jun 1998

Electronic commerce

UGC HIA96/97.BM05 HK$50,000 Jan 1997 - Jun 1997

Cost-benefit accounting and success measures for Hong Kong/China information technology investments

CERG HKUST6223/97H HK$484,000 Aug 1997 - Aug 2000

Representative Recent Publications:


GRACE AU

Assistant Professor

(2358-6304; graceau@ust.hk)

PhD, London School of Economics and Political Science (1990)
Postdoctoral Research Assistant, London School of Economics and Political Science 7 (1990-91)
Systems Consultant, Callhaven Plc (1990-92)

Current Research Activities:

Distributed multimedia systems; work-flow modeling; visual interactive modeling; human-computer interaction.

Active Projects as Principal Investigator:

A user interface evaluation study on electronic retail store design
RGC DAG96/97.BM69 HK$35,000 Jan 1997 - Oct 1997
Telemedicine: Remote health care system in Hong Kong
RGC HKUST542/95H HK$331,000 Sep 1995 - Aug 1997
Global telemedicine for Hong Kong: A requirement and effectiveness analysis (with HIGA, Kunihiko; TSE, S. Y. John; PETRAZZINI, Ben A.)
RGC HKUST728/96E HK$362,000 Sep 1996 - Aug 1998

Representative Recent Publications:


CHRISTOPHER K. CARTER
Assistant Professor
(2358-7758; imchrisc@ust.hk)

PhD, University of New South Wales (1994)
Asst Professor, University of New South Wales (1995)

Current Research Activities:
Bayesian statistics; Markov chain Monte Carlo methods; nonparametric regression; time series analysis.

Active Projects as Principal Investigator:
Nonparametric spectral density estimation
RGC DAG95/96.BM46 HK$50,000 Jan 1996 - Dec 1997 Bayesian estimation for Markov random fields
DAG DAG96/97.BM65 HK$30,000 Jan 1997 - Dec 1998 Efficient Markov chain Monte Carlo methods for dynamic mixture models
DAG DAG97/98.BM61 HK$29,000 Jan 1998 - Jun 1999

Representative Recent Publications:


PATRICK Y. K. CHAU

Associate Professor, Associate Dean of Business and Management, and Director of Undergraduate Programs.
(2358-7638; pchau@ust.hk)

PhD, University of Western Ontario (1992)

Current Research Activities:
Decision support systems; information presentation and model visualization; issues related to IS/IT adoption and implementation.

Active Projects as Principal Investigator:
Design and implementation of SME-NET
HKPC HKPC97/98.IS01 HK$50,000 Oct 1996 - Aug 1998
An integrated issue-based decision support system - A case study of Sino-British negotiation (with BUI, Tung Xuan)
CERG HKUST582/96H HK$380,000 Jul 1996 - Dec 1998
Information technology diffusion among small and medium size enterprises in Hong Kong (with MUELLER, Milton L)
CERG HKUST583/96H HK$310,000 Oct 1996 - Feb 1999
Effective visual representations of concepts in interactive multimedia information systems: An empirical study of displaying semantic relevance (with MA, Pai Chun; HU, Jen Hwa Paul)
CERG HKUST6224/97H HK$200,000 Sep 1997 - Feb 1999

Representative Recent Publications:


KI LING CHEUNG

Assistant Professor
(2358-7737; imcheung@ust.hk)

PhD, Stanford University (1990)
Management Consultant, Teknekron Corporation (1990-92)
Material Analyst, Sun Microsystems Inc. (1990)

Current Research Activities:
Total quality management; supply chain management; production and operations management.

Active Projects as Principal Investigator:
A study of time discount incentives in periodic/continuous review inventory models
RGC HKUST544/95H HK$271,000 Oct 1995 - Nov 1997
The impacts of shipment coordination in a supply chain
DAG DAG97/98.BM62 HK$29,000 May 1998 - Apr 1999

Representative Recent Publications:


THEODORE H. CLARK

Assistant Professor

(2358-7634; tclark@ust.hk)

DBA, Harvard Graduate School of Business Administration (1994)


Electrical Engineer, IBM (1982-84)

Current Research Activities:

Telecommunications policy and strategy; EDI; inter-organizational systems; process redesign; Electronic commerce.

Active Projects as Principal Investigator:

- Internet-based electronic commerce between Hong Kong and China: An empirical study of barriers, opportunities, and issues (with LEE, Ho Geun)
  CERG HKUST581/96H HK$320,000 Sep 1996 - Aug 1999

- The impact of e-mail usage on the distribution of power within organisations: A cross cultural study (with HUO, Paul Y)
  CERG HKUST584/96H HK$322,000 Aug 1996 - Aug 1999

Representative Recent Publications:


HARESH GURNANI
Assistant Professor
(2358-7724; mnharesh@ust.hk)

PhD, Carnegie Mellon University (1992)
Technical Staff, AT&T Bell Laboratories (1989)

Current Research Activities:
Logistics management; supply chain inventory and operations management; manufacturing/marketing interface; total quality management.

Active Projects as Principal Investigator:
A realistic quantity discount model
RGC DAG95/96.BM54 HK$26,500 Dec 1995 - Nov 1996
An analytical study of product line design issues
RGC DAG96/97.BM63 HK$30,000 Dec 1996 - Nov 1997
The role of cooperative information systems in a supply chain

Representative Recent Publications:


RAMESH G. KINI
Assistant Professor
(2358-7749; imkini@ust.hk)

PhD, Carnegie Mellon University (1994)
Instructor, Carnegie Mellon University (1994)

Current Research Activities:
Economics of design and conformance quality; manufacturing/marketing/accounting interface issues; momentum accounting; differential game theory; supply-chain management.

Active Projects as Principal Investigator:
Design quality, conformance quality and momentum accounting
RGC DAG96/97.BM62 HK$75,000 Nov 1996 - Oct 1997
The multiple dimensions of design quality
DAG DAG97/98.BM59 HK$20,000 Nov 1997 - Jun 1998

Representative Recent Publications:

JAMES KWOK
Assistant Professor
(2358-7652; jkwok@ust.hk)

PhD, Imperial College of Science, Technology and Medicine, University of London (1997)

Current Research Activities:
Image segmentation; segmented video coding and image database system.

**Active Projects as Principal Investigator:**

Image representation for image database management systems

DAG DAG97/98.BM54 HK$55,000 Dec 1997 - Jun 1999

**Representative Recent Publications:**


**KARL R. LANG**

*Assistant Professor*

(2358-7651; klang@ust.hk)

*PhD, University of Texas, Austin (1993)*

*Asst Professor, Free University of Berlin (1994-95)*

*Visiting Scholar, New York University (1993)*

**Current Research Activities:**

DSS/AI; qualitative modeling and qualitative reasoning; distributed organizational computing, workflow management systems; computer supported distance learning.

**Active Projects as Principal Investigator:**

Modeling organizational decision scenarios using QSIM

RGC DAG96/97.BM81 HK$27,000 Apr 1997 - Dec 1997
Representative Recent Publications:

**Lang, K.R. and Zhao, J.L. (1998)** "The Role of Information Technology in Distributed Distance Education", working paper.


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**HUGUES ALAIN LEVECQ**

*Assistant Professor*

(2358-7649; hugues@ust.hk)

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**PhD, New York University (1998)**

**Instructor, New York University (1994-96)**

**Current Research Activities:**

Impact of information technology on the financial services industry; electronic auctions and their desirability for primary financial markets; investigation of standard adoption using experimental economics to characterize the strategic decision-making process of standard developers.

**Active Projects as Principal Investigator:**

Information technology and market design innovations: The effects of electronic hybrid trading institutions on market competition

DAG DAG97/98.BM82 HK$54,335 Apr 1998 - Mar 1999

**Representative Recent Publications:**


**BRUCE A. REINIG**

*Assistant Professor*

(2358-7653; reinig@ust.hk)

*PhD, University of Arizona (1996)*

**Current Research Activities:**

Collaborative work technologies and group support systems.

**Active Projects as Principal Investigator:**

Investigating the use of the electronic classroom in Hong Kong

DAG DAG96/97.BM66 HK$77,730 Dec 1996 - Aug 1998

A cross-cultural study of group support systems

DAG DAG97/98.BM55 HK$40,400 Apr 1998 - Mar 1999

**Representative Recent Publications:**


ROY C. SCHMIDT
Assistant Professor
(2358-7637; schmidt@ust.hk)

PhD, Indiana University (1992)
Special Projects Director (1985-89); Telecomm R&D Project Manager (1982-85)
Chief, Airborne Reconnaissance (1979-82), US Air Force

Current Research Activities:
Executive use of information technology; information systems application development productivity; information systems project risk management.

Active Projects as Principal Investigator:
A cross-national study of software project risk countermeasures: Hong Kong portion
CERG HKUST6225/97H HK$200,000 Jul 1997 - Jun 1998

Representative Recent Publications:


Lee, S. and Schmidt, R. (1997) "Improving Application Development Productivity", in Information Technology and the Challenge for Hong Kong (eds. Burn, J. and Martinsons, M.), Hong Kong University Press, Hong Kong.


LI CHUNG SHIH
Lecturer
(2358-7744; mnshih@ust.hk)
PhD, Tokyo Institute of Technology (1991)

Senior Researcher, Technological Research Institute of Sao Paulo (1981-93)

Current Research Activities:
Strategy and operations management; total quality and productivity management; application of heuristic methods to operations management; product development management; motivation systems.

Active Projects as Principal Investigator:
Combining generalized search procedures with local optima perturbation schemes
RGC DAG95/96.BM48 HK$26,500 Dec 1995 - Jun 1998
Quality management in Chinese enterprises: Concepts and practices
CERG HKUST579/96H HK$297,000 Dec 1996 - Dec 1999

Representative Recent Publications:


MIKE KA PUI SO
Assistant Professor
(2358-7726; immkps@ust.hk)

PhD, The University of Hong Kong (1996)
Asst Lecturer, The University of Hong Kong (1994-96)
Current Research Activities:
Nonlinear time series analysis and its applications; modeling and forecasting of financial time series; market volatility study; prediction and profit evaluation; modeling the dynamic structure of economic data; chaos study in financial markets.

Active Projects as Principal Investigator:
Modeling stochastic volatility in financial markets
RGC DAG96/97.BM41 HK$71,660 Dec 1996 - Oct 1997
Statistical analysis of long memory stochastic volatility
DAG DAG97/98.BM64 HK$41,915 Nov 1997 - Oct 1998

Representative Recent Publications:

JACK TEH
Visiting Assistant Professor
(2358-6359; jteh@ust.hk)

PhD, University of Nebraska (1990)
Asst Professor, Utah State University (1990-93)

Current Research Activities:
Decision support technologies; information systems development; electronic commerce.

Active Projects as Principal Investigator:
Java and the shifting software development paradigm

DAG DAG97/98.BM58 HK$55,000 Dec 1997 - May 1999

Process Redesign and Decision Support

RGC DAG98/99.BM47 HK$46,000 Jan 1999 - Dec 1999

**Representative Recent Publications:**


**JAMES Y. L. THONG**

Assistant Professor

(2358-7631; jthong@ust.hk)

*PhD, National University of Singapore*(1997)

**Current Research Activities:**

IT in small business; IT personnel management; IT adoption, diffusion and implementation success.

**Active Projects as Principal Investigator:**

A study on ethical decision-making among IT professionals

DAG DAG97/98.BM56 HK$55,000 Apr 1998 - Mar 1999

**Representative Recent Publications:**


**CHI-MING DAVY WONG**  
Assistant Professor  
(2358-7750; imdavy@ust.hk)

*PhD, University of New South Wales (1995)*

*Asst Building Services Engineer, Electrical & Mechanical Services Department, Hong Kong (1986-88)*

**Current Research Activities:**

Nonparametric regression; Markov chain Monte Carlo algorithms; statistical computing; modeling and forecasting electricity load.

**Active Projects as Principal Investigator:**

Additive model with autoregressive errors  
RGC DAG95/96.BM53 HK$26,500 Dec 1995 - Jun 1997  
An efficient algorithm to generate from reduced conditionals  
RGC DAG97/98.BM63 HK$29,000 Mar 1998 - Feb 1999

**Representative Recent Publications:**


SAMUEL P. WONG  
Assistant Professor  
(2358-7731; imsam@ust.hk)

PhD, Stanford University (1996)

Current Research Activities:

Financial time series analysis and forecasting; nonparametric regression and classification; business applications of neural networks and other artificial intelligence techniques.

Active Projects as Principal Investigator:

Local linear neural networks and their business applications  
DAG DAG96/97.BM78 HK$75,869 Mar 1997 - Sep 1998
Bayesian non-parametric regression  
DAG DAG97/98.BM65 HK$92,198 Dec 1997 - Jun 1999

Representative Recent Publications:


YAN XU  
Visiting Assistant Professor  
(2358-7640; xuyan@ust.hk)

Ph.D, Strathclyde University (UK) 1997

Current Research Activities:

A comparative study of telecommunications policy and regulation in Hong Kong and China; IT development policy and strategy; competitive behavior of telecommunications operators; universal service.
Active Projects as Principal Investigator:
The re-shaping of telecommunication regulatory framework in Hong Kong and China
DAG DAG97/98.BM57 HK$55,000 Dec 1997 - Jul 1999

Representative Recent Publications:


HONGTAO ZHANG
Assistant Professor
(2358-7755; imhzhang@ust.hk)

PhD, Massachusetts Institute of Technology (1990)
Senior Management Consultant, CSC Consulting (1990-94)

Current Research Activities:
Coordination in production and service systems; Inventory and supply chain management; Analysis and control of queuing systems; Vehicle routing and scheduling; Optimization heuristics.

Active Projects as Principal Investigator:
Decision coordination in two-stage service operations
Representative Recent Publications:


J. LEON ZHAO
Assistant Professor
(2358-7644; zhao@ust.hk)

PhD, University of California, Berkeley (1992)
Asst Professor Information Systems, College of William and Mary (1992-95)

Current Research Activities:

Workflow technologies and management; intelligent and multimedia database systems; applications and implications of electronic commerce; business process reengineering.

Active Projects as Principal Investigator:

Coordination-based metadata management in a multi-organizational information system
SSRC SSRC95/96.BM01 HK$304,980 Jul 1996 - Jun 1998

Management of business policies in a complaint-handling workflow system
DAG DAG97/98.BM86 HK$45,830 Jun 1998 - Jun 1999

Intranet-based workflow management systems for virtual organizations in Hong Kong (with KONG, Steven S M; SHENG, Olivia R H LIU; TAM, Kar Yan)
CERG HKUST6222/97H HK$200,000 Sep 1997 - Aug 1999

Coordination-based query processing in a multi-organizational information system
SSRI SSRI96/97.BM01 HK$159,990 Jul 1997 - Mar 1999

Representative Recent Publications:


**Lang, K.R.** and **Zhao, J.L.** (1998) "The Role of Information Technology in Distributed Distance Education", working paper.


**Zhao, J.L.** and Kumar, A. (in press) "Data Management Issues for Large Scale, Distributed Workflow Systems on the Internet", *Data Base*.

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**SHAO-HUI ZHENG**

Assistant Professor

(2358-7751; imzheng@ust.hk)

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**PhD, Columbia University (1994)**

**Instructor, Columbia University, New York (1994)**

**Current Research Activities:**

Quality control; production management; inventory management; applied stochastic processes; Markov decision programming; queuing systems.

**Active Projects as Principal Investigator:**

Dynamic quality control for machine processes with multiple states

RGC DAG95/96.BM52 HK$26,500 Jan 1996 - Sep 1997

TUGCgered concurrent batch additions and deletions in queuing networks

RGC DAG96/97.BM64 HK$30,000 Jan 1997 - Jun 1998

Triggered concurrent batch additions and deletions in a queueing networks

DAG DAG96/97.BM64 HK$30,000 Jan 1997 - Jun 1998

Dynamic approaches to quality control in batch manufacturing

CERG HKUST6220/97H HK$200,000 Jul 1997 - Jul 1999

**Representative Recent Publications:**


Department of Management of Organisations

The responsibility of managers is the effective and efficient management of individuals and groups in business firms and non-profit organizations. Management of Organizations, therefore, deals with the many aspects of the administration of an organization such as the formulation of goals including long- and short-term planning, the establishment of decision-making processes, the design of organizational structures, the understanding of human motivations, and the development of human resources. Research in the Department includes analysis of organizational behavior, negotiation, management in Chinese contexts, human resources management, strategic management, and international management.

Research Profile

ANNE S. TSUI
Professor and Department Head

LARRY J. L. FARH
Professor and Deputy Department Head

JOHN E. BUTLER
Visiting Associate Professor

KENNETH SHING-KEUNG LAW
Associate Professor

RICHARD L. PRIEM
Visiting Associate Professor

ELIZABETH WELDON
Associate Professor

XIAO-PING CHEN
Assistant Professor

CHUN HUI
Assistant Professor

PETER J. HWANG
Assistant Professor

GARY J. KATZENSTEIN
Assistant Professor

JIA TAO LI
Assistant Professor
ANNE L. LYTLE

Assistant Professor
STEPHEN NASON

Assistant Professor
DOUGLAS Y. PARK

Assistant Professor
MADAN M. PILLUTLA

Assistant Professor
DOUGLAS J. SEGO

Assistant Professor
GEOFFREY WARIN

Visiting Assistant Professor
STEVEN WHITE

Visiting Assistant Professor
KATHERINE R. XIN
Research Profile

ANNE S. TSUI

Professor and Department Head
(2358-7752; mnastsui@ust.hk)

PhD, University of California, Los Angeles (1981)
Asst Professor of Management, Duke University (1981-88)
Assoc Professor of Management, University of California, Irvine (1988-95)

Current Research Activities:
Leadership and managerial effectiveness; managerial performance evaluation; self-regulation and feedback processes; strategic human resource management; demographic diversity; employee-organization relationships; joint venture leadership teams.

Active Projects as Principal Investigator:
A longitudinal investigation of the development of supervisor-subordinate exchange relationships in the United States and Hong Kong (with XIN, Katherine R.)
RGC HKUST537/95H HK$550,000 Sep 1995 - Aug 1999
Center for research on Chinese management
UGC TOO96/97.BM01 HK$200,000 Jan 1997 - Jun 1997
Areas of Excellence in China business & management (with CHENG, Leonard K H)
AOE AOE97/98.BM01 HK$525,000 May 1998 - Jun 2001
Where Guanxi matters: Guanxi and relational demography in the Chinese context (with FARH, Larry J L)
CERG HKUST588/96H HK$474,000 Sep 1996 - Aug 1999
Initiation of designated opportunity areas of center for research on Chinese management
DAG TOO96/97.BM01-1 HK$261,085 Jun 1997 - Jun 1999

Representative Recent Publications:


LARRY J. L. FARH

*Professor and Deputy Department Head*

(2358-7735; mnlfarh@ust.hk)

*PhD, Indiana University (1983)*

*Assoc Professor of Management, Louisiana State University (1988-93)*

**Current Research Activities:**

Managerial networking; organizational justice; organizational citizenship behavior; values and business ethics in Chinese societies.

**Active Projects as Principal Investigator:**

The nature and antecedents of organizational citizenship behavior in a collectivistic society: The case of the People's Republic of China (with ORGAN, Dennis W)

CERG HKUST6245/97H HK$410,500 Dec 1997 - Nov 1999

**Representative Recent Publications:**


JOHN E. BUTLER
Visiting Associate Professor
(2358-7743; mnjohn@ust.hk)

PhD, New York University (1985)
Assoc. Professor (1996- ) and Director of Southeast Asia Studies Center (1996- ), University of Washington

Current Research Activities:
Entreprenuerial research.

Active Projects as Principal Investigator:
Entrepreneurial succession, firm growth and performance
DAG DAG97/98.BM45 HK$30,000 Dec 1997 - Jul 1998

Representative Recent Publications:

KENNETH SHING-KEUNG LAW
Associate Professor
(2358-7740; mnlaw@ust.hk)

PhD, University of Iowa (1990)
Lecturer, Australian Graduate School of Management (1991-93)

Current Research Activities:
Research methodology; statistical methods; human resources management; organizational behaviors.

Active Projects as Principal Investigator:
Organizational commitment and turnover intention in Chinese context
RGC DAG95/96.BM59 HK$45,000 Jan 1996 - Dec 1997
Initiation of high impact area of human resources management in the PRC

UGC HIA96/97.BM04 HK$60,000 Jan 1997 - Jun 1997
A cross-cultural comparison of the nomological networks of organizational citizenship behaviors (with EARLEY, Christopher P; FARH, Larry J L)

DAG DAG96/97.BM53 HK$100,000 Jan 1997 - Jun 1999
Organizational justice perceptions and their impact on individual outcomes in Hong Kong and China (with LEE, Cynthia; PILLUTLA, Madan M)

CERG HKUST6244/97H HK$491,130 Jan 1998 - Dec 1999

Representative Recent Publications:


RICHARD L. PRIEM
Visiting Associate Professor
(2358-8064; mnpriem@ust.hk)

PhD, University of Texas (1990)
Assoc Professor, University of Texas, Arlington (1990)

Current Research Activities:
Strategic management and cross-cultural differences in moral judgement and values in business decision making.
Representative Recent Publications:


ELIZABETH WELDON

Associate Professor

(2358-7760; mnweldon@ust.hk)

PhD, Ohio State University (1981)

Current Research Activities:

Inter-cultural interaction; conflict management; US-Chinese joint ventures.

Active Projects as Principal Investigator:

Inter-cultural conflict in bi-cultural work teams: A study of US-Chinese joint ventures

RGC DAG96/97.BM59 HK$31,000 Aug 1996 - Nov 1997

Cross-cultural differences in conflict management behavior: A comparison of Chinese and American managers

DAG DAG97/98.BM44 HK$60,000 Nov 1997 - May 1999

Representative Recent Publications:


XIAO-PING CHEN

Assistant Professor

(2358-7753; mnchenxp@ust.hk)

PhD, *University of Illinois, Urbana* (1995)

**Current Research Activities:**

Individual and group decision making; social dilemmas; interpersonal relations; group dynamics.

**Active Projects as Principal Investigator:**

Tolerance of free-riding: The effects of social orientation, defection size, and defection pattern in a public goods dilemma

RGC DAG95/96.BM57 HK$60,000 Nov 1995 - Jul 1997

Toward a behavioral theory of group identity in solving free-rider problems of organizations: A cross-cultural study (with TRIANDIS, Harry C.)

CERG HKUST590/96H HK$268,000 Oct 1996 - Jun 1998

**Representative Recent Publications:**


CHUN HUI
Assistant Professor
(2358-7741; mnhui@ust.hk)

PhD, Indiana University (1994)

Current Research Activities:
Leadership; conflict management; cross-cultural management; selection; individual and team performance.

Active Projects as Principal Investigator:
A cross-cultural study of the effects of leader-member relationship on the evaluation of member performance (with GRAEN, George B.; LAW, Kenneth S. K.)
RGC HKUST534/95H HK$150,000 Sep 1995 - Aug 1997
Reducing organizational citizenship behavior and turnover: A China study
DAG DAG97/98.BM41 HK$40,000 Nov 1997 - Oct 1999

Representative Recent Publications:


PETER J. HWANG
Assistant Professor
(2358-7738; mnphwang@ust.hk)

PhD, Michigan State University (1988)
Assoc Professor, National Taiwan University (1992-93)
Asst Professor, Baruch College, City University of New York (1988-92)

Current Research Activities:
International diversification strategy; international market entry strategy; international joint venture and cooperation.

Active Projects as Principal Investigator:
The multi-party prisoners' dilemma and co-operation verses defection in alliances
RGC DAG95/96.BM64 HK$32,000 Dec 1995 - May 1997

Representative Recent Publications:


GARY J. KATZENSTEIN
Assistant Professor
(2358-7746; mngary@ust.hk)

PhD, Carnegie Mellon University (1997)
Current Research Activities:
Managerial and organization cognition; International management; Chinese management; Organizational learning; Organization knowledge creation, storage, and transfer; Innovation and Creativity; Organizational theory; Organizational processes and process redesign.

Active Projects as Principal Investigator:
(1) Breaking organizational rules: The roles of expectations and observability in process emergence (2) Making connections: The use of Hypertext to support associative learning
DAG DAG97/98.BM83 HK$80,000 Apr 1998 - Mar 1999

Representative Recent Publications:

JIA TAO LI
Assistant Professor
(2358-7757; mnjtli@ust.hk)

PhD, University of Texas, Dallas (1992)
Co-Director, Hang Lang Center for Organizational Research
Assoc and Asst Professor, University of Hawaii (1992-1994)

Current Research Activities:
International strategy; competitive strategy; organization theory; alliances/joint venture success in China; international and comparative management.

Active Projects as Principal Investigator:
International joint venture leadership teams in China (with Tsui, Anne S.Y.)
RCC Competitive Earmarked Research Grant HKUST6198/98H July 1998 - June 2000
Formation of international cooperative ventures in China
DAG DAG96/97.BM55 HK$80,000 Jan 1997 - Jun 1998
Building Effective Joint Venture Teams in China (with TSUI, Anne S Y)
PDI Global Research Consortia JVC2/97 US$80,000 Jun 1997 - Oct 1999
Representative Recent Publications:


ANNE L. LYTLE

Assistant Professor

(2358-7748; mnlytle@ust.hk)

PhD, Northwestern University (1994)

Current Research Activities:

Negotiation; intercultural negotiation and communication; intercultural conflict and dispute resolution; comparative management; Creativity and Independent thought in organizations.

Active Projects as Principal Investigator:

Negotiation processes in the Asia Pacific Region: Building a common understanding


Creativity and Independent Thought in Asia

TDG F0110 HK$100,000 July 1998 - July 1999

Representative Recent Publications:


STEPHEN NASON

Assistant Professor
(2358-7759; mnsnason@ust.hk)

PhD, University of Southern California (1994)

Current Research Activities:

International management and culture; domestic and international human resources management; organizational learning and behavior.

Active Projects as Principal Investigator:

Organizational learning in hyper-dynamic environments: Hong Kong and PRC
RGC DAG95/96.BM58 HK$60,000 Dec 1995 - Nov 1997

Organizational learning in hyper-dynamic environments: Hong Kong and the PRC (with TINSLEY, Catherine H; LINOW, Mary Ann Von)
DAG DAG96/97.BM54 HK$100,000 Jan 1997 - Nov 1999

Organizational learning in hyper-dynamic environments: Hong Kong and the PRC (with LI, Jiatao; GLINOW, Mary Ann Von)
CERG HKUST6243/97H HK$474,800 Nov 1997 - Nov 1999

Representative Recent Publications:


Nason, S (1997) "Theoretical and methodological issues with international research teams", Academy of Management Conference, Boston, August.

**DOUGLAS Y. PARK**

*Assistant Professor*

(2358-7739; mndpark@ust.hk)

*PhD, Stanford University (1997)*

**Active Projects as Principal Investigator:**

The strategic management of social capital: Professional services firms in Hong Kong and China

DAG DAG97/98.BM42 HK$80,000 Jan 1998 - Feb 1999

**Representative Recent Publications:**


**MADAN M. PILLUTLA**

*Assistant Professor*

(2358-7736; mnmadan@ust.hk)

*PhD, University of British Columbia (1995)*

**Current Research Activities:**

Negotiations and bargaining; reputation building and management; sociology of knowledge.

**Active Projects as Principal Investigator:**

Restoring broken trust in relationships

RGC DAG95/96.BM63 HK$60,000 Dec 1995 - Jun 1997

Injunctive and descriptive norms in social dilemmas (with CHEN, Xiaoping)

DAG DAG96/97.BM56 HK$47,000 Dec 1996 - Jun 1999

Do mutual funds managed by groups outperform mutual funds managed by individuals?

DAG DAG97/98.BM43 HK$30,000 Jan 1998 - Jun 1999
Representative Recent Publications:


Tinsley, C., & **Pillutla, M.** (in press) "The influence of culture on business negotiations in the U.S. and Hong Kong.", *Journal of International Business Studies*


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**DOUGLAS J. SEGO**

Assistant Professor

(2358-7747; mnsego@ust.hk)

PhD, Michigan State University (1994)


Current Research Activities:

Training evaluation; training transfer to job performance; turnover in Chinese organizations.

Active Projects as Principal Investigator:

An examination of the impact of transfer of technology into China on existing training systems (with CHEN, Xiaoping; WANG, Zhong-Ming)

CPDG CPDG94/95.BM08 HK$20,000 Aug 1995 - Jul 1996

An examination of the determinants of turnover in China: Adapting current turnover models to the Chinese context

RGC DAG95/96.BM61 HK$35,000 Jan 1996 - Dec 1997

An examination of the determinants of turnover in China: Adapting current turnover models to the Chinese context (with WANG, Zhong-Ming; MOBLEY, William H.; LAW, Kenneth S. K.; CHEN, Xiaoping; HUI, Chun)

RGC HKUST591/96H HK$292,000 Sep 1996 - Aug 1998

An examination of the determinants of turnover in China: Adapting current turnover models
Representative Recent Publications:


GEOFFREY WARIN
Visiting Assistant Professor

PhD, University of California, Los Angeles (1993)

Current Research Activities:
Explaining the persistence of economic profit in business firms; international competition.

Active Projects as Principal Investigator:
Strategy and national environment: The case of Hong Kong and China


Representative Recent Publications:


STEVEN WHITE
Visiting Assistant Professor
(2358-7732; mnsw@ust.hk)

PhD, Massachusetts Institute of Technology (1997)

Current Research Activities:
Strategy; organizational and technological innovation; firm and industry change in China.

Active Projects as Principal Investigator:
A resource-based analysis of firm response to foreign direct investment
DAG DAG97/98.BM79 HK$45,000 Jun 1998 - May 1999

KATHERINE R. XIN
Visiting Assistant Professor
(2358-8062; mnkxin@ust.hk)

PhD, University of California (1994)

Current Research Activities:
Leadership; relational demography and relationship management in the US and in China; international joint-venture management.

Active Projects as Principal Investigator:
Guanxi and entrepreneurial sucess: Evidence from Chinese private enterprises
DAG DAG97/98.BM49 HK$87,388 Nov 1997 - Jul 1999

Representative Recent Publications:


USA, 264-286.


Department of Marketing

The mission of the Marketing Department is to create a center of academic excellence focusing on the creation and dissemination of knowledge in the crucial field of marketing, and provide intellectual leadership in research and stimulate open discussion of basic research questions. Academic quality and excellence is emphasized in every endeavor.

Marketing is an activity that facilitates exchange. As such, the success of an organization (whether for-profit or not-for-profit) often depends on the effectiveness of its marketing efforts. Therefore, marketing includes strategy decisions about the product or service to offer, advertising and promotional methods for communication, prices to charge, and the distribution system to utilize for delivery. Central to marketing is consumer behavior and marketing research.

Research Profile

WILFRIED R. VANHONACKER
Professor and Department Head

GERALD J. GORN
Professor

JEONGWEN CHIANG
Associate Professor

KRISTIAAN HElsen
Associate Professor

AMNON RAPOPORT
Visiting Professor

RAMI ZWICK
Associate Professor

DONNEL A. BRILEY
Assistant Professor

JIN KYUNG HAN
Assistant Professor

NAMWOON KIM
Assistant Professor

ROBERT E. KRIDER
Assistant Professor
A. V. MUTHUKRISHNAN
Assistant Professor
LYDIA J. PRICE
Assistant Professor
SESHAN RAMASWAMI
Assistant Professor
JAIDEEP SENGUPTA
Assistant Professor
MENGZE SHI
Assistant Professor
PASCHALINA (LILIA) ZIAMOU
Visiting Assistant Professor
Research Profile

WILFRIED R. VANHONACKER
Professor and Department Head
(2358-7691; mkwvan@ust.hk)

PhD, Purdue University (1979)
Professor of Marketing, INSEAD, Fontainebleau (1990- )

Current Research Activities:
Dynamic choice modeling; data transferability; comprehensive modeling of purchase timing, purchase quantity and brand choice (including cross-national comparisons); choice set/consideration set formation process modeling; brand loyalty development and customer satisfaction measurement.

Active Projects as Principal Investigator:
Measuring brand clout and vulnerability: An approach which recognizes unequal consideration and asymmetric dominance
RGC DAG95/96.BM71 HK$91,536 Dec 1995 - Nov 1997
Individual purchase behavior and brand choice cycles
DAG DAG96/97.BM52 HK$79,889 Nov 1996 - Apr 1999
Brand choice as a sequential optimal option search
CERG HKUST6236/97H HK$717,000 Oct 1997 - Sep 2000

Representative Recent Publications:


GERALD J. GORN

Professor
(2358-7693; mkgorn@ust.hk)

PhD, Penn State University (1971)

Advisory Council Professor of Consumer Behavior, University of British Columbia (1985-)

Current Research Activities:

Effects of commercials and public service announcements on consumer attitudes and behavior; social marketing; children's advertising.

Active Projects as Principal Investigator:

A survey of condom acquisition
RGC DAG96/97.BM43 HK$65,000 Oct 1996 - Sep 1997
Use of visual mental imagery in new product design (with CHATTOPADHYAY, Amitava)
CERG HKUST6241/97H HK$200,000 Aug 1997 - Jul 1999

Representative Recent Publications:


JEONGWEN CHIANG

Associate Professor

(2358-7699; mkchiang@ust.hk)

PhD, University of Minnesota (1988)
Asst Professor, Washington University (1992-97)
Asst Professor, University of Rochester (1988-92)

Current Research Activities:
Measuring promotional effects on consumer choice; shopping basket studies; new product
development; customer satisfaction.

Active Projects as Principal Investigator:
Customer Satisfaction, Retention, and Recovery: An Integration Approach to customers
Relationship Management (with Tang, T. and Robinson, W.)
RGC HKUST6202/98H HK$585,000 Jan 1999 - Dec 2000
Impact of Hong Kong's hand-over to China on Hong Kong's international agricultural trade
and marketing strategy (with SALVACRUZ, Joseph)
DAG DAG97/98.BM33 HK$48,904 Dec 1997 - Jun 1999
Externalities with differentiated products: The case of the cellular phone industry in Hong
Kong
DAG DAG97/98.BM35 HK$66,547 Feb 1998 - Jan 1999

Representative Recent Publications:

Chiang, J., Chib S., and Narasimhan, C. (1998) "Market Chain Monte Carlo and Models of


Russell, G., Bell, D., Botapati, A., Brown, C., Chiang, J., Gaeth, G., Manchanda, P. and
Gupta, S. (1997) "Perspective on Multiple-Category Choice", Marketing Letters,
8(3):297-306.

Pioneers and Later Entrants", working paper.

Bell, D., Chiang, J. and Padmanabhan, V. (1997) "The 84/14/2 Rule Revisited: What Drives
Choice, Incidence and Quantity Elasticities?" working paper.
KRIStIAAN HELSEn

Associate Professor
(2358-7720; mkhel@ust.hk)

PhD, Wharton School, University of Pennsylvania (1990)
Asst Professor of Marketing, University of Chicago (1990-95)

Current Research Activities:
New products; international marketing; promotions; marketing strategy.

Active Projects as Principal Investigator:
An analysis of the competitive pricing interplay between incumbents and new entrants
RGC DAG95/96.BM55 HK$50,000 Dec 1995 - Sep 1996
Bonus pack or price-off: Does it matter? (with CHIANG, Jeongwen)
RGC DAG96/97.BM44 HK$35,000 Jan 1997 - Dec 1997
Are there market share rewards for pan-regional brands? An empirical study
DAG DAG97/98.BM37 HK$56,548 Dec 1997 - Dec 1998

Representative Recent Publications:
Helsen, K. and Jedidi, K. (1997) "Robust Outlier Diagnostic Based on Least Median Squares with Applications in Marketing", working paper.
AMNON RAPOPORT
Visiting Professor
(2358-7719; mkamnon@ust.hk)

PhD, University of North Carolina at Chapel Hill (1965)
Karl Eller Professor of Management and Policy, University of Arisona (1989-)

Current Research Activities:
Interactive decision making (conflict and cooperation in the dyad, bargaining, adaptive learning, coalition formation, social dilemmas, equity); individual decision making (optimal stopping, sequential search; herding behavior).

Active Projects as Principal Investigator:
Sequential consumer search with relative ranks (with MUTHUKRISHNAN, Anaimalai V; ZWICK, Rami)
DAG DAG97/98.BM32 HK$66,000 Dec 1997 - Feb 1999

Representative Recent Publications:


Journal of Mathematical Psychology, 42:133-166.

RAMI ZWICK
Associate Professor
(2358-7695; mkzwick@ust.hk)
PhD, University of North Carolina at Chapel Hill (1987)
Asst Professor of Marketing, Penn State University (1988-93)
Senior Lecturer, Auckland University, New Zealand (1994-95)

Current Research Activities:
Negotiation; Consumers and managerial judgment and decision making; Experimental business research.

Active Projects as Principal Investigator:
Areas of Excellence in experimental business research
AOE AOE97/98.BM03 HK$325,000 May 1998 - Feb 2000
Retailing methods and buyer behavior in cyberspace GOLDMAN, Arieh
CERG HKUST6239/97H HK$200,000 Aug 1997 - Jul 1999
Auction on the Internet. (with Chui, K.)

Representative Recent Publications:

DONNEL A. BRILEY
Assistant Professor
(2358-7698; mkbriley@ust.hk)

PhD, Stanford University (1997)
Current Research Activities:
Cultural and consumer decision making; behavioral decision theory; international marketing.

Active Projects as Principal Investigator:
A culture-oriented model of behavior
DAG DAG97/98.BM34 HK$69,024 Nov 1997 - Jan 1999

Representative Recent Publications:


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**JIN KYUNG HAN**

*Assistant Professor*

(2358-7703; mkjin@ust.hk)

*PhD, Columbia University (1993)*

*Senior Associate, Inter-national Security Council, Washington, DC (1994-95)*

Current Research Activities:
Brand equity; comparative advertising; categorization; context effects; advertisement effects; information processing; corporate identity.

Active Projects as Principal Investigator:
Order-of-entry effects in brand extension decision
RGC DAG95/96.BM72 HK$50,000 Dec 1995 - Dec 1996

Undoing the wrong-doings of brand extensions
RGC DAG96/97.BM45 HK$55,000 Dec 1996 - Nov 1997

Business strategies for the market- and the "less" market-oriented
Representative Recent Publications:


NAMWOON KIM

Assistant Professor

(2358-7702; mknam@ust.hk)

*PhD, University of Texas, Austin (1993)*

*Asst Professor of Marketing, National University of Singapore (1993)*

Current Research Activities:

Use of quantitative methods and modeling techniques in marketing decision making; new product diffusion models; organizational buying behavior.

Active Projects as Principal Investigator:

Dynamic market growth of the competing product categories and successive generations
RGC DAG95/96.BM74 HK$50,000 Jan 1996 - Dec 1996

Facilitating sales processes in industrial markets: Antecedents and consequences
RGC DAG96/97.BM47 HK$52,000 Jan 1997 - Dec 1997

Analyzing cross-price effects for multi-category multi-generation technological products

Representative Recent Publications:


ROBERT E. KRIDER

Assistant Professor

(2358-7701; mkkrider@ust.hk)

PhD, University of British Columbia (1993)

Current Research Activities:

Competition dynamics; consumer perceptions and biases; retailing; entertainment industries.

Active Projects as Principal Investigator:

Limitations on supermarket growth: The Hong Kong case (with GOLDMAN, Arieh)
RGC DAG95/96.BM70 HK$50,000 Dec 1995 - Feb 1998
Biases in consumers' area judgements
DAG DAG96/97.BM48 HK$35,000 Jan 1997 - Jun 1999
Food retail modernization: a process model and a multi-country evaluation (with RAMASWAMI, Seshan; GOLDMAN, Arieh)
CERG HKUST6235/97H HK$502,900 Oct 1997 - Sep 1999

Representative Recent Publications:


A. V. MUTHUKRISHNAN

Assistant Professor

(2358-7715; mkmuthu@ust.hk)

*PhD, University of Florida (1993)*

*Asst Professor, Fairleigh Dickinson University (1993-95)*

**Current Research Activities:**

Consumer decision making.

**Active Projects as Principal Investigator:**

Piecemeal comparisons in advertising (with ALBA, Joseph and WARLOP, Luk)

RGC DAG95/96.BM56 HK$50,000 Jan 1996 - Mar 1998

The "Illusion of Control" bias in brand choice decisions (with RAMASWAMI, Seshan)

DAG DAG96/97.BM49 HK$35,000 Jan 1997 - Jun 1999

Amount of information, elaboration, and attitudinal resistance (with VANHONACKER, Wilfried R R; MUNGALE, R Amitabh; PHAM, Tuan Michel)

CERG HKUST6238/97H HK$242,890 Jul 1997 - Jun 2000

**Representative Recent Publications:**


**LYDIA J. PRICE**

*Assistant Professor*

(2358-7712; mkprice@ust.hk)

*PhD, Columbia University (1988)*

*Asst Professor of Marketing, INSEAD (1988-93)*

*Visiting Asst Professor of Marketing, New York University (1993-94)*

**Current Research Activities:**

Multivariate statistics/applied marketing research; consumer psychology; consumer judgments of product quality; Cross cultural consumer behaviour.

**Active Projects as Principal Investigator:**

Warranty signals and bond credibility: Can credibility hurt more than it helps?

RGC DAG95/96.BM76 HK$52,000 Jan 1996 - Jun 1997

Chinese culture and consumer cognition: A review and discussion

DAG DAG97/98.BM38 HK$52,000 Feb 1998 - Jul 1999

**Representative Recent Publications:**


SESHAN RAMASWAMI

Assistant Professor
(2358-7694; seshrama@ust.hk)

PhD, University of Florida (1992)

Research Executive, MARG Marketing & Research Group (1987-88)

Current Research Activities:
Consumer response to marketing activities; consumer's choice process; analysis of market and retail structure;

Active Projects as Principal Investigator:
An experimental investigation of the behavioral effects of product lining strategies
RGC DAG95/96.BM78 HK$50,000 Jan 1996 - Dec 1997

The impact of display characteristics on the encoding of brand prices in the supermarket (with SAWYER, Alan G; MUNGALE, Amitabh R)
DAG DAG96/97.BM51 HK$75,000 Jan 1997 - Dec 1998

Context effects on consumer choice (with MUTHUKRISHNAN, Anaimalai V)
DAG DAG97/98.BM40 HK$56,547 Jan 1998 - Dec 1999

Representative Recent Publications:


JAIDEEP SENGUPTA
Assistant Professor
(2358-7718; mkjaisen@ust.hk)

PhD, University of California, Los Angeles (1996)
Marketing Executive, ANZ Grindlays Bank (1991)

Current Research Activities:
Attitude strength; low involvement persuasion; negative and comparative advertising; celebrity endorsements.

Active Projects as Principal Investigator:
A busy mind is the devil's workshop: Why marketers of new products may not want consumers to think too much
RGC DAG96/97.BM50 HK$45,000 Oct 1996 - Oct 1997
Attributes vs. social norms: examining the impact of culture on the formation of purchase intentions (with AAKER, Jennifer)
CERG HKUST6237/97H HK$246,100 Sep 1997 - Sep 2000

Representative Recent Publications:


MENGZE SHI
Assistant Professor
(2358-7706; mkshi@ust.hk)

Ph.D., Carnegie Mellon University (1997)

Current Research Activities:
Sales force compensation; Consumer Reward Programs; Database Marketing.

Active Projects as Principal Investigator:
Quality signaling and salesforce compensation schemes (with SRINIVASAN, Kannan)

Representative Recent Publications:

PASCHALINA (LILIA) ZIAMOU
Visiting Assistant Professor
(2358-7700)

PhD, University of Rhode Island (1997)

Current Research Activities:
Really new products; adoption of innovations; consumer response to high-technology products; new product design; categorization.

Active Projects as Principal Investigator:
The effect on the degree of newness of a really new product on consumers' judgments

DAG DAG97/98.BM77 HK$10,000 Sep 1997 - Jul 1998

**Representative Recent Publications:**


Division of Humanities

Unlike the single-discipline departments in the University, the Division of Humanities focuses on a range of fields including literature, history, art history, linguistics, philosophy, religion, and cultural anthropology. A significant focus of interest is on studies relating to Hong Kong, China and the wider Asia-Pacific region.

The Division of Humanities is interdisciplinary and comparative in orientation for both teaching and research. Asia is approached not in isolation as a region but from a cosmopolitan perspective which promotes critical self-awareness in a global context. It is also noteworthy that the Humanities Division stands as an institutional locus for creative dialogue and interaction between faculty and students with different disciplinary interests.

Facilities

The University Library constitutes the primary resource for faculty, staff, and students in Humanities. Presently, the Library has about 500,000 volumes of printed materials, more than 20,000 titles in audio-visual collection, 40,000 titles in microform, and over 150 electronic databases. Approximately 55% of the library collections of books, media, and microforms are in the subject areas of Humanities and Social Sciences. The Library Online System provides effective unified access to Library collections as well as remote access to other resources world-wide via the Internet.

The Division of Humanities itself is home of the South China Research Center, which has started a collection of folk documents relating to South China. The collection has been growing steadily and, recently, it has also been enhanced by loaned databases. The Center has also sponsored annual conferences and workshops, the results of which have been published as a series of occasional papers.

The Humanities Audio-visual Room has been an important site for many of the Division's teaching and research activities. The room boasts sophisticated equipment, including two video-editing systems, one non-linear video-editing system, and various handy and visual equipment. The facilities are of crucial importance to faculty and students, especially for anthropological field research, drama presentation, film showing, and many other AV events.

Research Profile

SAMUEL HUNG-NIN CHEUNG

Department Head

CHANG-TAI HUNG

Professor

PANG-HSIN TING

Professor and Dean of Humanities and Social Science

LEONARD K. K. CHAN

Senior Lecturer
CHI-CHEUNG CHOI
Associate Professor and Director of South China Research Centre

YIU-MING FUNG
Associate Professor

KARL S. Y. KAO
Associate Professor

ANGELINA CHUN-CHU YEE
Associate Professor and Associate Dean of Humanities and Social Science

CHARLES WING-HOI CHAN
Assistant Professor

LI-FEN CHEN
Assistant Professor

SIU-WOO CHEUNG
Assistant Professor

CECILIA LEE-FANG CHIEN
Assistant Professor

LI-TSUI FU
Assistant Professor

VIRGIL K. Y. HO
Lecturer

KAM TAK SING
Assistant Professor

BOCKJA KIM
Assistant Professor

DAVID PETER LAWRENCE
Assistant Professor

TIK-SANG LIU
Lecturer
Research Profile

SAMUEL HUNG-NIN CHEUNG

Department Head
(2358-7764; hmhschng@ust.hk)

Active Projects as Principal Investigator:
Cantonese of the 19th Century
DAG DAG97/98.HSS20 HK$68,284 Jun 1998 - Jun 1999

CHANG-TAI HUNG

Professor
(2358-7805; hmhung@ust.hk)

PhD, Harvard University (1981)
Jane and Raphael Bernstein Professor of Asian Studies (1993-98) and Professor of History (1992-98), Carleton College

Current Research Activities:
Twentieth-century Chinese cultural history; Chinese popular and folk culture; ritual and politics in contemporary China.

Representative Recent Publications:


PANG-HSIN TING

Professor and Dean of Humanities and Social Science
(2358-7777; shphting@ust.hk)

PhD, University of Washington (1972)

Professor (1989-94) and Agassiz Professor of Chinese Linguistics (1994-98), University of California, Berkeley

Research Fellow (1975-89) and Director (1985-89), Institute of History and Philology, Academia Sinica

Current Research Activities:
Chinese linguistics; Chinese phonology; Chinese dialectology; Sino-Tibetan linguistics

Representative Recent Publications:


LEONARD K. K. CHAN

Senior Lecturer
(2358-7796; hmkkchan@ust.hk)

PhD, University of Hong Kong (1988)

Head, Department of Chinese, Hong Kong Baptist University (1991-93)

Current Research Activities:
Chinese literary theories and criticism; theories of literary history; Chinese poetry, in particular anthologies of Tang poetry in late Ming period.
Representative Recent Publications:


CHI-CHEUNG CHOI

Associate Professor and Director of South China Research Centre
(2358-7766; hmccchoi@ust.hk)

DLitt, Tokyo University (1989)
Lecturer, Hong Kong University of Science and Technology (1991-97)
Asst Professor, University of Macau (1989-91)
Asst Archivist, Public Records Office, Hong Kong (1988-89)

Current Research Activities:

Family and lineage in Hong Kong, South China and overseas Chinese settlements; Chinese festivals and customs; modern Chinese business history.

Active Projects as Principal Investigator:

A tale of two cities: History of Sheung Wan district, Hong Kong (with CHUNG, Stephanie)
Lord Wilson Heritage Trust, Research Grant HK$310,000 Dec 1996 - Dec 1998
Survey of historical buildings; Wong Tai Sin and Sai Kung districts
Culture, Recreation and Sports Branch, HK Government HK$498,000 Dec 1996 - Dec 1998
South China Research Center
AOE AOE97/98.HSS02 HK$200,000 Jun 1998 - Aug 1999
Chaozhou rice merchants and their hometown connections, 1850-1950
DAG DAG97/98.HSS04 HK$76,000 Dec 1997 - May 1999

Representative Recent Publications:


YIU-MING FUNG
Associate Professor
(2358-7792; hmymfung@ust.hk)

PhD, Chinese University of Hong Kong (1984)
Assoc Professor, Chinese University of Hong Kong (1995-97)
Research Fellow, Institute of East Asian Philosophies, Singapore (1985-87)

Current Research Activities:
Neo-Confucianism; the logic of Chinese language; comparative philosophy; philosophical problems of cognitive science.

Representative Recent Publications:


KARL S. Y. KAO
Associate Professor
(2358-7768; hmkkao@ust.hk)

PhD, University of Wisconsin, Madison (1979)
Assoc Professor, University of Alberta (1989- )
Asst Professor, Yale University (1979-86)

Current Research Activities:
Traditional Chinese fiction; rhetoric East and West; comparative literature; literary theory.

Active Projects as Principal Investigator:
Rhetorical figures in Chinese: The content of the form
RGC DAG95/96.HSS06 HK$56,000 Feb 1996 - Sep 1997

Representative Recent Publications:


ANGELINA CHUN-CHU YEE

Associate Professor and Associate Dean of Humanities and Social Science

(2358-7825; hmacyee@ust.hk)

PhD, Harvard University (1986)

Mellon Postdoctoral Fellow, Cornell University (1989-90)

Asst and Assoc Professor, University of Maryland (1990- )

Current Research Activities:

Chinese and Western fiction and drama; cultural criticism; colonial and post-colonial studies; gender studies.

Active Projects as Principal Investigator:

Writing the (anti-)colonial selves: Taiwan writers during the Japanese occupation
RGC DAG95/96.HSS09 HK$52,000 Mar 1996 - Aug 1997
Writing the (anti-)colonial selves: Taiwan writers during the Japanese occupation
RGC DAG95/96.HSS20 HK$40,800 Apr 1996 - Dec 1997
Writing the (anti-)colonial selves: Taiwan writers during the Japanese occupation
CERG HKUST623/96H HK$529,000 Sep 1996 - Aug 1999

Representative Recent Publications:


Yee, A. (in press) "Writing the Colonial Self", in War, Reconstruction and Creativity in East Asia, University of Hawaii, Honolulu, p.300.
CHARLES WING-HOI CHAN
Assistant Professor
(2358-7765; hmwhchan@ust.hk)

PhD, Toronto University (1994)
Lecturer, Huron College, University of Western Ontario (1993-94)

Current Research Activities:
Classical Confucianism; Taoism; Sung and Ming Neo-Confucianism; Japanese Confucianism; Sino-Japanese intellectual and cultural relations.

Active Projects as Principal Investigator:
In search of the way of the early kings and Confucius: Ogyu Sorai's reassertion of his cultural identity
RGC DAG96/97.HSS10 HK$41,200 Jun 1997 - Dec 1997
Ogyu Sorai's critique of the Chu Hsi orthodoxy revisited
DAG DAG97/98.HSS11 HK$85,000 Apr 1998 - Mar 1999

Representative Recent Publications:

LI-FEN CHEN
Assistant Professor
(2358-7813; hmlfchen@ust.hk)
PhD, University of Washington (1990)
Instructor, Tamkang University (1984-85)
Lecturer, University of Delaware (1982-83)

Current Research Activities:
Literary theories and criticism; fiction; modern literature.

Active Projects as Principal Investigator:
Literary theory and the discourse of postcolonialism in Taiwan
DAG DAG96/97.HSS13 HK$20,000 Jun 1997 - Mar 1999

Representative Recent Publications:

SIU-WOO CHEUNG
Assistant Professor
(2358-7763; hmcheung@ust.hk)

PhD, University of Washington (1996)

Current Research Activities:
Ethnicity and ethno-historical processes in Southern and Southwestern China; subject-identity constitution and representation; anthropology of tourism.

Active Projects as Principal Investigator:
Ethnic marginality, regional development, and transnational politics: Identity change among
the Jing People in Fengcheng, Guangxi Province

RGC DAG95/96.HSS01 HK$91,300 Mar 1996 - Feb 1997

Transnational enterprise and Chinese transnationalism: Hong Kong investment and the ethnic Chinese community in Vietnam

DAG DAG97/98.HSS07 HK$87,500 Dec 1997 - Nov 1998

Representative Recent Publications:


CECILIA LEE-FANG CHIEN

Assistant Professor

(2358-7806; hmcchien@ust.hk)

PhD, Harvard University (1994)

Current Research Activities:
Pre-modern Chinese political economy; Song Dynasty government monopoly and bureaucracy; pre-modern Chinese cities and urbanization; merchants and trade under a Confucian bureaucratic government.

Active Projects as Principal Investigator:
The government monopoly of salt in the Song Dynasty (960-1279)
Representative Recent Publications:

**Chien, C.L.** (in press) *The State Monopoly of Salt in the Song Dynasty (960-1279): An Annotated Translation of the Treatise on the Government Salt Monopoly in the Song Dynastic History*, University of Michigan Center for Chinese Studies, Ann Arbor, Michigan, USA.

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**LI-TSUI FU**

*Assistant Professor*

(2358-8024; hmltfu@ust.hk)

**Active Projects as Principal Investigator:**

Landscape discourse and formation of cultural identity: Paintings representing specific places in China, Hong Kong and Taiwan since 1949

DAG DAG97/98.HSS15 HK$84,289 Jun 1998 - May 1999

Representative Recent Publications:


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**VIRGIL K. Y. HO**

*Lecturer*

(2358-7802; hmvihoky@ust.hk)

*DPhil, Oxford University (1995)*

*Research Fellow, IASSA, Gothenburg University (1989-94)*

**Current Research Activities:**

Socio-cultural history of China; urban history of China; cultural changes in contemporary South China.

**Active Projects as Principal Investigator:**

Socio-cultural meanings of revolutionary monuments in modern China
RGC DAG

Visualizing history: Revolutionary monuments and their socio-cultural meanings

DAG DAG97/98.HSS09 HK$50,000 Jan 1998 - Jul 1999

Representative Recent Publications:


KAM TAK SING

Assistant Professor

(2358-7797; hmkts@ust.hk)

PhD, Harvard University (1994)

Instructor, Harvard University (1990)

Teaching Fellow, Harvard University (1986-93)

Current Research Activities:

Ming-Ch'ing history; Inner Asian history; Altaic philology.

Representative Recent Publications:


BOCKJA KIM
Assistant Professor
(2358-7801; hmkim@ust.hk)

PhD, Boston University (1993)
Lecturer, Boston University Cosmopolitan College (1992-93)

Current Research Activities:
Comparative philosophy of religion; Christianity and Far East Asian Buddhism; Global Peace by virtue of mysticism and ethics situated in religious pluralism.

Active Projects as Principal Investigator:
Zen Buddhism and social ethics
RGC DAG95/96.HSS02 HK$48,000 Jan 1996 - Dec 1996
A Western axiological hermeneutics of Zen Buddhist ontology
DAG DAG97/98.HSS10 HK$45,000 Dec 1997 - Dec 1998

Representative Recent Publications:


DAVID PETER LAWRENCE
Assistant Professor
(2358-7794; hmdplawr@ust.hk)

PhD, University of Chicago (1992)

Current Research Activities:
Comparative philosophy and philosophy of religion; problems of cross-cultural interpretation and relativism; monistic Kashmiri Saivism; Indian linguistic theory; Buddhist logic.

Representative Recent Publications:


Lawrence, D.P. (in press) "The Dialectic of Transcendence and Immanence in Contemporary Western and Indian Theories of God", in Transcendence and Immanence—Comparative and Multi-Dimentional Perspectives (eds. Liu, S. et al.), Hong Kong, New Asia College, The Chinese University of Hong Kong.

TIK-SANG LIU
Lecturer
(2358-7799; hmtsliu@ust.hk)

PhD, University of Pittsburgh (1995)

Current Research Activities:
Family and kinship; Chinese popular religion and shamanism; ethnicity; visual
anthropology.

**Active Projects as Principal Investigator:**

Creation and revitalization: Popular religion in the Pearl River Delta in south China

DAG DAG97/98.HSS18 HK$70,000 Jun 1998 - May 1999

**Representative Recent Publications:**


**ZONGLI LU**

Assistant Professor

(2358-7761; hmzongli@ust.hk)

PhD, University of Wisconsin, Madison (1995)

Lecturer, University of Wisconsin, Madison (1990-95)

Assoc Professor and Section Vice-director, Chinese Academy of Social Sciences (1988-89)

**Current Research Activities:**

Chinese political, intellectual and cultural history from early to medieval; imperial political institutions and systems; classical textual studies; Chinese popular beliefs and religions.
Active Projects as Principal Investigator:
Folk deities in China (with LUAN, Bao Qun)
RGC DAG95/96.HSS03 HK$90,526 Jan 1996 - Oct 1996

Representative Recent Publications:


LING-TUN NGAI
Assistant Professor
(2358-7807; hmltngai@ust.hk)

PhD, University of Wisconsin, Madison (1994)

Current Research Activities:
Modern Chinese fiction; comparative literature; literature of Hong Kong and Macau.

Representative Recent Publications:


Ngai, L.T. (in press) "Xiandaishi de jiao yu xue (Teaching and Learning Modern Poetry)", Hu Xi (Fresh Air).
JOWEN TUNG
Assistant Professor
(2358-7795; hmrvtung@ust.hk)

PhD, Columbia University (1994)

Current Research Activities:
Gender studies; cultural criticism; classical Chinese literature; modern poetry; philosophical anthropology.

Representative Recent Publications:

XINYANG WANG
Assistant Professor
(2358-7767; hmxwang@ust.hk)

PhD, Yale University (1988)
Asst Professor, Washington State University (1991-95)
Research Fellow, Institute of East Asian Philosophies, Singapore (1988-90)

Current Research Activities:
Comparative immigration studies; history of overseas Chinese; history of Sino-foreign relations; US-China relations.

Active Projects as Principal Investigator:
Host societies' policies and Chinese immigrants' survival strategies: A comparative study of the Cantonese immigrants in pre-1965 Singapore and Vancouver, Canada 1900-1965
**Representative Recent Publications:**


**SIMON M. H. WONG**

*Assistant Professor*

(2358-7772; hmmhwong@ust.hk)

*PhD, University of Toronto (1996)*

*Instructor, Wilfrid Laurier University (1993)*

**Current Research Activities:**

Confucianism; Taoism; Chinese Buddhism.

**Active Projects as Principal Investigator:**

Liu Tsung-chou: His doctrine of "Vigilant Solitude"

DAG DAG96/97.HSS08 HK$23,270 Jun 1997 - Mar 1999

**Representative Recent Publications:**


**Wong, S.M.H.** (1997) "A Comparative Study of Confucianism and Buddhism from the Perspective of Liu Tsung-chou (in Chinese)", *Conference on Comparative Philosophy, Transcendence and Immanence-Heaven, Man and Beast*, The Chinese University of Hong Kong and The Hong Kong University of Science and Technology, Hong Kong, Dec 8-10.


KAM-MING YIP
Assistant Professor
(2358-7788; hmyming@ust.hk)

PhD, Chinese University of Hong Kong (1993)
Lecturer, Hong Kong Baptist University (1993-95)

Current Research Activities:
Comparative philosophy of language; Chinese logic; contemporary Chinese philosophy; methodology of thinking; analytic philosophy.

Representative Recent Publications:


Division of Social Science

The Division of Social Science seeks to create a center of excellence in academic research and scholarly productivity. Faculty members are expected to maintain a lively intellectual environment where new ideas are explored, frontiers are pushed, and a genuine commitment is made to contribute relevant, innovative, and significant scholarship to the social sciences.

The focus of the Division is interdisciplinary with areas of research in anthropology, economics, geography, political science, psychology and sociology. The Division has a strong faculty in the study of contemporary China and in the study of economic development and social change, broadly defined. Many of our faculty members are internationally well-known for their research on the sociological, political, and economic transformation of China. Other faculty colleagues are leaders in the study of Asian demography, geography, psychology, and the interactions among science, technology, and society in Asia.

Facilities

The Division of Social Science has established three separate research and teaching facilities:

The Archives of China's Socioeconomic and Political Data is funded through a university provided infrastructure grant. The Archives aim at acquiring major statistical data that pertain to economic development, political changes, and social science research.

The Social Science Laboratory houses 24 stations of computer assisted random digit dialing interview facilities known as CATI. It has so far been used in both teaching and in conducting political polls that were associated with the transition in 1997.

The Division also established a modest Geographical Information Systems Laboratory for teaching and research purposes. It is located next to the CATI system in the Social Science Laboratory.

The primary resource for staff in the School of Humanities and Social Science is the University Library. Planned for a total capacity of 1.2 million volumes, the Library opened in October 1991 with a collection of approximately 100,000 items of printed materials and more than 30 electronic databases. Approximately 40 percent of the book collection is in the subject areas of the humanities and social sciences. The library's on-line catalogue provides unified access to books, journals, media resources, electronic publications, and international telecommunication links throughout the world.

Research Profile

ALVIN SO
Department Head and Professor

JUDITH BANISTER
Professor

HSI-SHENG CH'I
Research Profile

ALVIN SO
Department Head and Professor
(2358-7782; soalvin@ust.hk)

PhD, UCLA (1982)
Assistant Professor, University of Hawaii (1984-88)
Associate Professor, University of Hawaii (1988-93)
Professor, University of Hawaii

Current Research Activities:
Hong Kong’s democratization; the integration of Chinese mainland-Taiwan-Hong Kong; the transformation of East Asia; social changes in South China.

Active Projects as Principal Investigator:
The Chinese Triangle of Mainland-Taiwan-Hong Kong: Comparative institutional analysis
DAG DAG97/98.HSS21 HK$68,284 Jun 1998 - Jun 1999

Representative Recent Publications:


**JUDITH BANISTER**

*Professor*

(2358-7830; sojb@ust.hk)

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**PhD, Stanford University (1978)**

**Chief, International Programs Center (1994-97)**

**Chief, Center for International Research (1992-94)**

**Chief, China Branch, US Bureau of the Census (1982-92)**

**Current Research Activities:**

Demography and related socio-economic topics; contemporary China and all Asia.

**Active Projects as Principal Investigator:**

Social and demographic analysis

AOE AOE97/98.HSS03 HK$200,000 Jun 1998 - Jun 2001

Migration in Hong Kong's current and future population (with MA, John Zhongdong)

DAG DAG97/98.HSS02 HK$94,000 Jan 1998 - Jun 1999

**Representative Recent Publications:**


HSI-SHENG CH'I

Professor
(2358-7780; sohsc@ust.hk)

PhD, University of Chicago (1969)
Professor of Political Science, University of North Carolina (1984-93)

Current Research Activities:
International politics; Chinese politics and foreign policies; democratization process.

Active Projects as Principal Investigator:
War, revolution, and nationalism: Sino-American relations: 1937-1945
RGC DAG96/97.HSS04 HK$95,825 Oct 1996 - Sep 1997

Representative Recent Publications:

JOW-CHING TU

Senior Lecturer
(2358-7776; soejctu@ust.hk)

PhD, University of Tennessee (1983)
Research Associate, Center for Social and Demographic Analysis, State University of New York
at Albany (1980-92)

Research Scientist, New York State Health Department (1977-92)

Current Research Activities:
Recent population changes and policy implications in Taiwan, China, Singapore and Hong Kong; family demography; population aging and its social and economic implications.

Representative Recent Publications:


ANDREW G. WALDER

Professor and Division Head

PhD, University of Michigan (1981)

Assoc Professor and Professor, Harvard University (1987-95)

Asst Professor, Columbia University (1981-87)

Current Research Activities:

Political sociology; economic sociology; sociological theory; contemporary China.

Active Projects as Principal Investigator:

Social stratification in China in a period of transition (with TREIMAN, D. and SZELENYI, I.)


Social stratification in China in a period of transition (with TREIMAN, D. and SZELENYI, I.)

National Science Foundation US$332,000 1995 - 1998

Representative Recent Publications:


ERIK BAARK
Associate Professor

(2358-7831; sobaark@ust.hk)

PhD, University of Lund (1986)

Dr phil, University of Copenhagen (1998)

Assoc Professor, Technical University of Denmark (1988-)

Director, Institute of Social Sciences, Technical University of Denmark (1992-94)

Current Research Activities:
Science and technology in society; technology assessment; science and technology policies in China.

Active Projects as Principal Investigator:
The engineering consultancy industry in Hong Kong: An explorative study
DAG DAG97/98.HSS03 HK$79,880 Mar 1998 - Sep 1999

Representative Recent Publications:


YANJIE BIAN
Associate Professor
(2358-7838; sobian@ust.hk)

PhD, State University of New York, Albany (1990)
Postdoctoral Research Associate, Duke University (1990-91)
Asst and Assoc Professor, University of Minnesota (1991-97)

Current Research Activities:
Social Stratification and mobility; social networks; methods and statistics; contemporary China.

Active Projects as Principal Investigator:
Social networks and job searches in Chinese cities: A pilot study
DAG DAG97/98.HSS01 HK$99,222 Jul 1997 - Sep 1998

Representative Recent Publications:


DAVID ZWEIG
Associate Professor
(2358-7832; sozweig@ust.hk)

PhD, University of Michigan (1983)
Postdoctoral Fellow, Harvard University (1984-85)
Assoc Professor of International Politics, Fletcher School, Tufts University (1986-96)
Asst Professor, University of Waterloo (1985-86)
Asst Professor, Florida International University (1982-84)

Current Research Activities:
Comparative politics; Chinese politics; Chinese foreign policy and transnational relations;
Chinese rural development; village democratization; environment and politics in China;
foreign aid in China; the role of returned overseas scholars in China's reforms;
Sino-American relations.

Active Projects as Principal Investigator:
A tale of two cities: Nantong and Zhangjiagang under China's open policy
DAG DAG96/97.HSS06 HK$73,116 Nov 1996 - Dec 1998
Democracy, conflict, and economic development in rural China
DAG DAG97/98.HSS19 HK$78,000 Jun 1998 - Jun 1999
China's `Reverse brain drain;' returned scholars in a transnational era (with CHEN, Changgui; ROSEN, Stanley)
CERG HKUST6249/97H HK$535,000 Jul 1997 - Jun 1999
Democracy, conflict and economic development in rural China
USIP USIP96/97.HSS01 US$49,500 Sep 1996 - Dec 1999

Representative Recent Publications:


KIMBERLY A. CHANG
Assistant Professor
(2358-7784; sokchang@ust.hk)

PhD, Syracuse University (1993)
Associate Faculty, Goddard College (1991-92)

Current Research Activities:
Globalization, migration and cultural identity; gender and development; feminist/critical theory; ethnographic/narrative/visual methodologies.

Active Projects as Principal Investigator:
Globalization and its intimate others: The hidden worlds of expatriate and migrant women in Hong Kong
DAG DAG97/98.HSS12 HK$73,700 Apr 1998 - Dec 1999

Representative Recent Publications:


Chang, K and Groves, J (in press) "Neither `Saints' Nor `Prostitutes': Sexual Discourse in the Filipina Domestic Worker Community in Hong Kong", Womens Studies International Forum.


CECILIA CHENG
Assistant Professor
(2358-7836; soccheng@ust.hk)

PhD, University of Hong Kong (1996)
Postdoctoral Research Fellow, University of Hong Kong (1996-97)

Current Research Activities:
Social competence and emotional intelligence; stress and coping; mental health of adults, adolescents, and psychosomatic patients.

Active Projects as Principal Investigator:
Exploring the "benefits" and "costs" of social relations: An alternative perspective on adolescent depression
DAG DAG97/98.HSS05 HK$99,920 Dec 1997 - Aug 1998

Representative Recent Publications:


IRENE ENG  
Assistant Professor  
(2358-7775; soirene@ust.hk)

PhD, University of California, Los Angeles (1992)  
Visiting Asst Professor, Oklahoma State University (1991-92)  
Lecturer, California State University, San Diego (1988-89)

Current Research Activities:  
Urban and regional development in East Asia; industrial growth and upgrading in East Asia.

Active Projects as Principal Investigator:  
What makes Chiu-chow (Chaozhou) a distinct culture region?  
RGC DAG95/96.HSS17 HK$39,000 Jun 1996 - Nov 1997  
Competing through creativity: The transformation of Hong Kong's urban economy (with PATCHELL, Gerald R)  
DAG DAG96/97.HSS14 HK$20,731 Jun 1997 - Dec 1998  
Tibet’s cashmere industry: Economic & social effects of internationalized indigenous development (with SAUTMAN, Barry V)  
DAG DAG97/98.HSS08 HK$64,000 Jun 1998 - May 1999

Representative Recent Publications:  


GREG B. FELKER
Assistant Professor
(2358-7826; sofeler@ust.hk)

PhD, Princeton University (1998)

Active Projects as Principal Investigator:
Upwardly global? The political economy of technology development in Malaysia and Thailand
DAG DAG97/98.HSS13 HK$55,000 Jun 1998 - May 1999

Representative Recent Publications:


ROBERT FERGUSON
Assistant Professor
(2358-7819; sorf@ust.hk)

PhD, University of Minnesota (1996)

Current Research Activities:
History of science and technology; business history; technological and organizational change in the aerospace industry.

Active Projects as Principal Investigator:
Assembling an industry: American aircraft manufacture and mobilization for World War II
RGC DAG96/97.HSS15 HK$45,000 Jun 1997 - Jan 1998

Beyond the factory: Institutional and regional contexts for aircraft production during World War II
DAG DAG97/98.HSS14 HK$70,000 Jun 1998 - Feb 2000

Representative Recent Publications:


JULIAN MCALLISTER GROVES

Lecturer
(2358-7815; sojulian@ust.hk)

PhD, University of North Carolina (1992)

Current Research Activities:
Sociological theory; social movements; science, technology and society.

Active Projects as Principal Investigator:
Paid domestic work: A solution for working couples in Hong Kong?
RGC DAG95/96.HSS18 HK$53,740 May 1996 - Apr 1997

Representative Recent Publications:


GAOCHAO HE
Assistant Professor
(2358-7823; sogche@ust.hk)

PhD, University of Chicago (1993)

Current Research Activities:
Chinese politics; political economy; applied rational choice and game theory; development and democracy; philosophy of explanation.

Active Projects as Principal Investigator:
The rise and settlement of labor disputes in China: The dynamic of remaking the Chinese working class in post-Mao era (with ZHU, Li Jing; LIN, Yimin)
RGC HKUST554/95H HK$581,000 Aug 1995 - Aug 1998
Politics of labor: Transition of industrial relations in China and Russia (with FAIRBROTHER, Peter David)
JRS JRS95/26 HK$76,910 Jan 1996 - Mar 1998
Crucial choice: Class analysis and radicalization of land reform in Northern China, 1946-1948
DAG DAG97/98.HSS16 HK$89,000 May 1998 - Apr 1999

Representative Recent Publications:
CARSTEN A. HOLZ
Assistant Professor
(2358-7835; socholz@ust.hk)

PhD, Cornell University (1995)

Current Research Activities:
Development economics; China's economy; applied macroeconomics and monetary economics.

Active Projects as Principal Investigator:
Financing and the growth of small- and medium-sized enterprises in China
RGC DAG95/96.HSS13 HK$82,000 Apr 1996 - Mar 1998

Representative Recent Publications:

YING YI HONG
Assistant Professor
(2358-7827; sohong@ust.hk)

PhD, Columbia University (1994)

Current Research Activities:
Social psychology of intergroup relations; person perception; culture and self; motivation and emotion; social competence and emotional intelligence.

Active Projects as Principal Investigator:
Group identification and intergroup dynamics during political transition: The case of 1997
(with CHIU, Chi Yue)

RGC HKUST551/95H HK$1,100,000 Sep 1995 - Aug 1998

The anatomy of social intelligence (with WONG, W K Eva)

DAG DAG96/97.HSS09 HK$45,000 Jun 1997 - Sep 1998

Emotional intelligence in academic settings: The role of implicit theory and self-confidence
(with CHIU, Chi Yue)

CERG HKUST6246/97H HK$200,000 Aug 1997 - Jul 1999

Representative Recent Publications:


Hong, Y., Abrams, D. and Ng, S.H. (in press) "Guest Editors' Introduction to the Special Issue", International Journal of Intercultural Relations.


YU HUNG HONG

Assistant Professor

(2358-7837; soyhhong@ust.hk)

PhD, Massachusetts Institute of Technology (1995)

Current Research Activities:

Urban land management and policy of Hong Kong; property rights; urban and regional development planning.

Active Projects as Principal Investigator:

Financing public infrastructure through land leasing: Hong Kong and Canberra

RGC DAG95/96.HSS15 HK$66,771 Jan 1996 - Dec 1996
Institutions and land contracting: Assigning urban land rights through negotiations in the People's Republic of China

DAG DAG96/97.HSS05 HK$62,571 Jan 1997 - Jun 1998

Representative Recent Publications:


Hong, Y.H. (1997) "Opinion Survey of the Public-Rental-Flat-Selling Scheme", report prepared for the Hong Kong Housing Bureau, Hong Kong SAR government.

ALFRED KO-WEI HU

Assistant Professor

*PhD, University of Chicago (1995)*

Current Research Activities:

Social change and development; social stratification and mobility; sociology of education; historical/political sociology; organization analysis; sociology of labor markets.

Active Projects as Principal Investigator:

Economic development and female labor force participation: Hong Kong as an illustrative case

DAG DAG96/97.HSS12 HK$45,000 Jun 1997 - Jun 1998

Representative Recent Publications:


JAMES KAI-SING KUNG

Assistant Professor
(2358-7824; sojk@ust.hk)

PhD, University of Cambridge (1991)
Postdoctoral Fellow and Visiting Asst Professor, Washington University (1990-1992)
Senior Lecturer in Economics, Hong Kong Polytechnic (1992-94)

Current Research Activities:
Economics of institutions and development; economics of reform and transition; China's agricultural development and reform.

Active Projects as Principal Investigator:
Economic development and institutional change in China's village economy: The case of Basdin prefecture in Hebei Province
RGC DAG95/96.HSS14 HK$93,063 Feb 1996 - Dec 1996
Land tenure in rural China: A study of peasants' perceptions of, and preference for, tenure security and organizations
DAG DAG96/97.HSS03 HK$86,107 Dec 1996 - Jul 1998
The cause(s) of China's 1958-61 famine revisited
DAG DAG97/98.HSS17 HK$62,000 Jun 1998 - Feb 1999
China's villages in transition: An empirical analysis of institutions and institutional change
(with LIN, Justin Y)
CERG HKUST6252/97H HK$428,000 Sep 1997 - Aug 1999

Representative Recent Publications:


Kung, K.S. and Lee, Y.F. (1998) "Non-farm Employment in Rural China: Myth and
YI-MIN LIN

Assistant Professor
(2358-7816; soyimin@ust.hk)

PhD, Yale University (1991)
Postdoctoral Fellow, University of California, Berkeley (1991-92)

Current Research Activities:
Organizational behavior; political economy; contemporary Chinese economies and societies.

Active Projects as Principal Investigator:
The origin and growth of "backyard economies": A case study of profit-making entities sponsored by state agencies in Shenhe District, Shenyang
RGC DAG95/96.HSS23 HK$44,000 Apr 1996 - May 1997
Regimes of Managerial Control in China's Reform Era
RGC DAG96/97.HSS07 HK$36,000 Jun 1997 - Feb 1998

Representative Recent Publications:


ZHONGDONG MA

Assistant Professor
(2358-7829; sojohnma@ust.hk)

PhD, McMaster University (1993)
Research Associate, University of Quebec (1993-94)

Research Affiliate, Yale University (1992)

Current Research Activities:
Migration and development in developing countries; application of geographic information systems to social science.

Active Projects as Principal Investigator:
Return migration and rural development
RGC DAG95/96.HSS11 HK$86,840 Feb 1996 - Sep 1997
Integrating primary and return migrations in developing countries: An integrated analysis
RGC DAG96/97.HSS11 HK$31,000 Jun 1997 - Jun 1998
Temporary labor migration: A catalyst to rural development (with TU, Jow Ching and ZENG, Yi)
CERG HKUST6113/97H HK$960,000 Aug 1997 - Jul 2000

Representative Recent Publications:


GOVINDAN PARAYIL
Assistant Professor
(2358-7828; sogp@ust.hk)

PhD, Virginia Tech (1990)

Rockefeller Fellow, Cornell University (1993-94)

Asst Professor, Illinois Institute of Technology (1991-92)
Asst Professor, Virginia Tech (1990-91)

**Current Research Activities:**

Science, technology, and society; technological change; history and philosophy of science and technology; environment and sustainable development.

**Representative Recent Publications:**


**GERALD R. PATCHELL**

*Assistant Professor*

(2358-7781; sopiggy@ust.hk)

PhD, Simon Frazer University (1991)

**Current Research Activities:**

Japanese interfirm relations, cooperative communities and the diffusion of organizations, environmental management.

**Active Projects as Principal Investigator:**

HKUST multimedia center: Exploring precedents and demand for a technological and creative growth pole (with ENG, Irene; ROH, Sung Joon; PARAYIL, Govindan)

TDC AF/145/96 HK$435,000 Jun 1996 - Aug 1997

**Representative Recent Publications:**

Patchell, G. (in press) "Creating the Japanese electric vehicle industry: The challenges of
uncertainty and cooperation", *Environment and Planning A*.


Hayter, R., **Patchell, G.** and Rees, K. (in press) "Business segmentation and location revisited: The terra incognita of large firms", *Regional Studies*.

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**BARRY SAUTMAN**

*Assistant Professor*

(2358-7821; sobarrys@ust.hk)

**PhD, Columbia University (1990)**

*Visiting Asst Professor, Johns Hopkins/Nanjing University Center (1991-92)*

*Adjunct Asst Professor, California State University, Northridge (1990-91)*

**Current Research Activities:**

Chinese politics; ethnicity and nationalism; authoritarian theory; international law; human rights.

**Active Projects as Principal Investigator:**

Preferential policies and autonomy in China's ethnic relations (with BILIK, Naran)

CERG HKUST6226/97H HK$501,400 Dec 1997 - Dec 1999

**Representative Recent Publications:**


DE-PIAO TANG
Assistant Professor
(2358-7785; sotang@ust.hk)

PhD, Columbia University (1994)
Visiting Scholar, University of California, Berkeley (1996)
Asst Professor, University of Missouri (1987-91)
Research Fellow, East-West Center (1989-90)

Current Research Activities:
Trade and development; international economic history; political economy.

Active Projects as Principal Investigator:
Migration and convergence in China, 1952-1994
RGC DAG95/96.HSS16 HK$7,000 Mar 1996 - Mar 1997
Convergence and migration in China, 1950-1995
RIG DAG96/97.HSS02 HK$100,000 Aug 1996 - Jul 1998
Economic growth and convergence in China
CERG HKUST6227/97H HK$400,700 Sep 1997 - Aug 1999

Representative Recent Publications:


TIM TIAN ZHU
Assistant Professor
(2358-7834; sotimzhu@ust.hk)
PhD, Northwestern University (1995)

Industry analyst, First Chicago Bank (1994-95)

Current Research Activities:

Chinese economic reform; corporate governance; economics of transition; contract theory; efficiency of Hong Kong's housing market.

Active Projects as Principal Investigator:

Corporate governance in China's corporatized enterprises. (with LIN, Yimin)

DAG DAG97/98.HSS06 HK$70,000 Jan 1998 - Dec 1998

Corporate governance in China's corporatized enterprises. (with LIN, Yimin)

CERG HKUST6053/98H HK$520,000 Aug 1998 - Jul 2000

Representative Recent Publications:


As an academic service unit, the Language Centre has no formal research commitments. Staff members in this unit have, however, successfully procured grant funding, undertaken pure and applied research, and produced publications. Listed below are the research projects and research output from staff members who have current research funding.

### Research Profile

**GREGORY C. A. JAMES**  
*Director of Language Centre*

**MICHAEL J. COURTNEY**  
*Senior Instructor*

**LYNNE J. FLOWERDEW**  
*Senior Instructor*

**JOHN C. MILTON**  
*Senior Instructor*

**RICHARD PEMBERTON**  
*Senior Instructor*

**IAN M. SMALLWOOD**  
*Senior Instructor*

**AMY M. L. CHI**  
*Instructor*
Research Profile

GREGORY C. A. JAMES

Director of Language Centre
(2358-7878; lcgjames@ust.hk)

PhD, University of Exeter

Vice-Principal, English Division, Institute of Language in Education, Hong Kong (1983-85)

Tutor to Overseas Students and Director, Testamur in English Language and Literature, University of Exeter (1985-89)

Senior Lecturer in Applied Linguistics, University of Exeter (1989)

Current Research Activities:

Applied linguistics; lexicography and lexicology; languages in education; South Asian languages.

Active Projects as Principal Investigator:

The development of a relational database for searching the words and phrases of the first bilingual dictionary of Chinese and a European language (with CHEN, Su-shing)

PCF SC7408 HK$34,785 Jan 1997 - Jun 1997

The collection of a corpus of textbook extracts in humanities and social science

DAG DAG97/98.LC01 HK$32,600 Nov 1997 - Oct 1998

The collection of a corpus of textbook extracts in engineering

DAG DAG97/98.LC02 HK$32,600 Dec 1997 - Jul 1998

Representative Recent Publications:


MICHAEL J. COURTNEY
Senior Instructor
(2358-7846; lccourt@ust.hk)

Head of English Dept, International College, Abu Dhabi, United Arab Emirates (1981-83)
Head of English Dept, Oman Higher Technical Industrial College, Muscat, Sultanate of Oman (1984-91)

Active Projects as Principal Investigator:
An investigation into communication task outcomes and classroom and language laboratory effectiveness

Representative Recent Publications:


Courtney, M. (1996b) "Preparing for interviews", in Tasks for Independent Language Learning (eds. Gardner, D. and Miller, L.), TESOL.


LYNNE J. FLOWERDEW
Senior Instructor
(2358-7855; lclyne@ust.hk)

MA, University of Birmingham (1984)
Coordinator, Language Centre, Sultan Oaboos University, Oman (1986-90)
Coordinator, English Division, Medical Faculty, Kuwait University (1984-86)
Coordinator, English Division, Science Faculty, Garyounis University, Libya (1981-82)

Current Research Activities:

Textlinguistic analysis of computerized corpora of technical writing; macro-organization and linguistic structures of academic and workplace reports with application to language teaching.

Active Projects as Principal Investigator:

Application of corpus linguistic techniques to identify and compare salient lexical phrases in student and professional workplace report writing

DAG DAG96/97.LC01 HK$31,000 Jan 1997 - Jan 1999

Representative Recent Publications:


JOHN C. MILTON

Senior Instructor
(2358-7849; lcjohn@ust.hk)

M.Ed., Brock University (1981)

Senior Lecturer, Acting Director and Assistant Director of English Centre, The University of Bahrain, Bahrain (1982-91)

"Foreign Expert", Wuhan University of Hydraulic and Electrical Engineering, Hubei, P.R.C. (1981-82)

Current Research Activities:

Analysis of the writing of non-native speakers of English; development of Information
Technology for language learning and instruction.

**Representative Recent Publications:**


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**RICHARD PEMBERTON**

*Senior Instructor, Manager of Self-Access Center*

(2358-7848; lcrpem@ust.hk)

*MA, Leicester University (1986)*

*Lecturer, Language and Communication Studies Dept., University of Technology, Lae, Papua New Guinea (1987-90)*

*Head of ESL, John Ellis Community College, Leicester, UK (1990-91)*

**Current research activities:**

Self-directed language learning; the role of listening in second language vocabulary acquisition.

**Active projects as Principal Investigator:**

Simulated environment for developing English communication skills in job interview situations (with MILTON, Philip; LEE, Joyce Y Y; NOAKES, Nick)

TDG HKUST/16 HK$1,031,000 May 1997-Jan 2000

Enhancing the quality of counsellor support for self-directed language-learning projects
Representative recent publications:


**IAN M. SMALLWOOD**

*Senior Instructor*

(2358-7874; lcian@ust.hk)

*M. Ed., University of Hong Kong*

**Current Research Activities:**

EFL vocabulary teaching/learning; EFL materials design.

**Active Projects as Principal Investigator:**

The collection and analysis of the English lexical syllabus used in Hong Kong secondary school textbooks and examination (with MILTON, John C; JAMES, Gregory C A; MCNEILL, Arthur)

DAG DAG96/97.LC02 HK$100,000 May 1997 - Jan 1999

**Representative Recent Publications:**


AMY M. L. CHI

Instructor

(2358-7857; lcamychi@ust.hk)


**Current Research Activities:**

Pedagogical lexicography; teacher and learner training.

**Active Projects as Principal Investigator:**

Writing materials and training students to use various dictionaries effectively and efficiently to assist their learning in English

ALP ALP96197.LC03 HK$147,729 Sep 1997 - Jun 1999

**Representative Recent Publications:**

