Department of Mechanical Engineering
The Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong

website: www.polyu.edu.hk/me

Annual Report 2021 / 2022

The Hong Kong Polytechnic University

Department of Mechanical Engineering

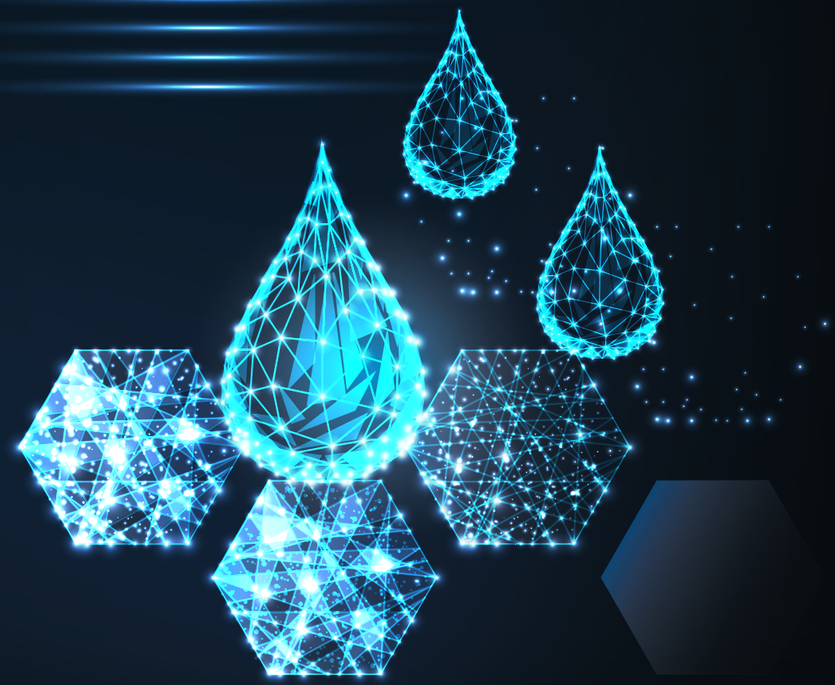
THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of
MECHANICAL ENGINEERING
機械工程學系

Department of

MECHANICAL ENGINEERING

Annual Report 2021-2022



ANNUAL REPORT 2021-2022

Department of Mechanical Engineering
The Hong Kong Polytechnic University

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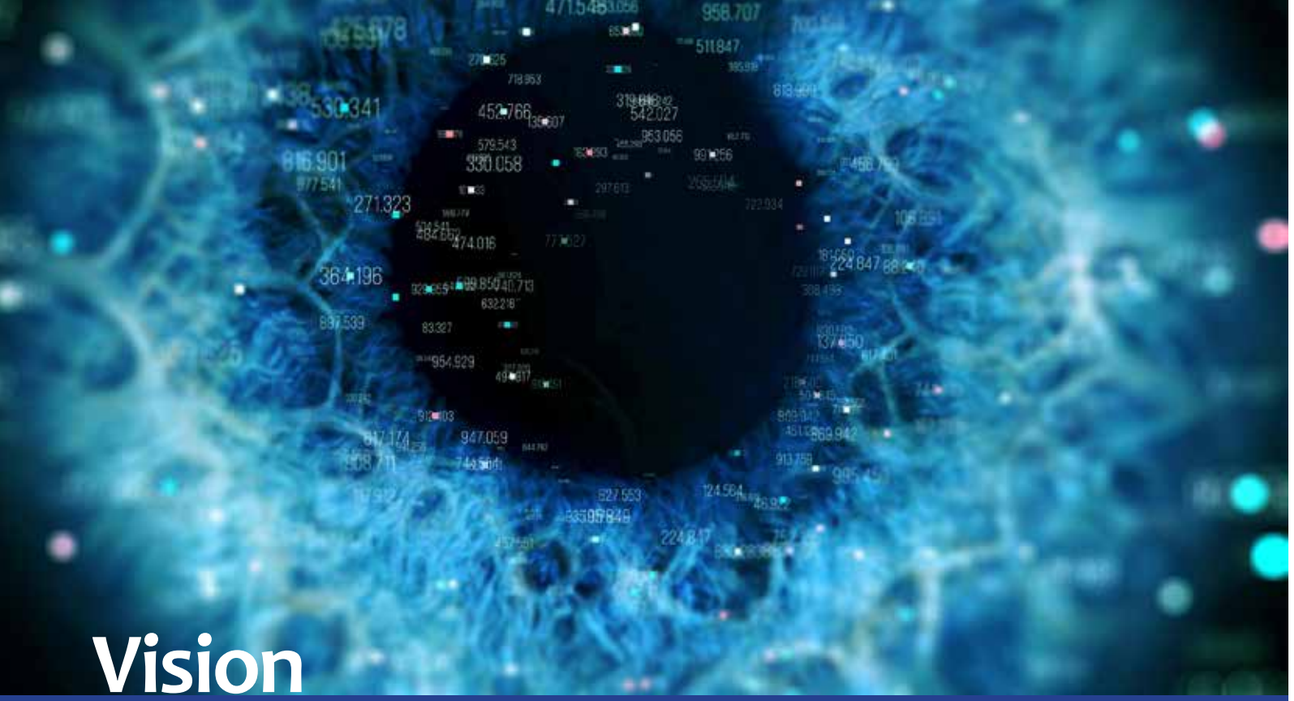


Vision

To achieve excellence in education and research in the discipline of mechanical engineering with global outreach and impact.

Mission

To train future leaders, with creativity, broad vision, global outlook, and professional ethics for industry, academia, government and communities, who have sound knowledge in mechanical engineering with effective communication, analytical, and problem-solving skills.

To create knowledge and technologies through fundamental research and its applications in mechanical engineering to serve societal needs.

Department of Mechanical Engineering

As one of the founding departments of The Hong Kong Polytechnic University since 1937, the Department of Mechanical Engineering has been the forerunner of the vast evolvement of its field. Over the years, the Department has pioneered the rapid development in the following research areas:

- Advanced Materials and Processing
- Aerospace Engineering
- Clean Energy and Energy Storage
- Robotics and Control
- Sound and Vibration
- Thermofluids and Combustion

Enhancing and maintaining excellent teaching quality has always been the major goal of the Department. With the elite teaching team, students will gain professionally recognized qualifications at different levels from the training of programmes offering by the Department, including Doctorates, Master Degrees, and Bachelor Degrees in Mechanical Engineering, and Product Analysis and Engineering Design.

Strategically emphasize on applied research, the Department firmly believes that research is an integral part of academic life. It informs teaching and advances the frontiers of knowledge and technology. The Department's efforts in research contribute to lifting the competitiveness of industry and to provide possible solutions towards a better living in Hong Kong and in the world.

The Department is famous for its international focus and actively encourages collaborations with overseas institutions. To foster international collaboration, the Department has been very active in inviting internationally well-known academic figures to participate as guest lecturers and in organizing international conferences. The Department has also published numerous research reports on world-renowned publications. The Department facilitates international exchange programmes for students through a strong network with various partner institutions all over the world and provides a platform for students to acquire global horizons and invaluable experiences in their university lives.

Major Laboratories

Acoustic Laboratory
Acoustic Wind Tunnel Laboratory
Advanced Materials for Energy Conversion and Storage Laboratory
Aeronautical Laboratory
Anechoic Chamber
Biological Mechanics and Materials Laboratory
Computational Aeroacoustics Structural Interaction Laboratory
Corrosion and Surface Technology Laboratory
Design Analysis Centre
Dynamics Laboratory
Fluid Mechanics Laboratory
Fundamental Combustion Research Laboratory
Heat Transfer and Combustion Laboratory
Materials and Mechanics Technology Laboratory
Measurement and Control Laboratory
Nano- and Micro-Mechanics Laboratory
Nanoscale Energy Conversion Devices and Physics Laboratory
Nano Fiber Fabrication Laboratory
Product Testing and Analysis Centre
Project Laboratory
Smart Structures and Products Laboratory
Thermal Science Laboratory
Thermodynamics Laboratory
Undergraduate Computing Laboratory
Water Tunnel Laboratory
Wind Tunnel Laboratory

Head's Message

The Department of Mechanical Engineering (ME) is committed to providing comprehensive and enjoyable learning experience to our students and a stimulating environment to our faculty members for excelling in their scientific discovery and innovation. Underlying this mission is our prolonged effort to engage in education and research. This report highlights the accomplishments of our faculty members in research and our students in learning over the academic year of 2021/22.

Teaching and Learning

ME has immensely engaged in teaching and learning enhancement activities and proactively urged its staff to propose and implement innovative teaching. Through the completion of the project entitled "Building a Digital Robotics Laboratory for Effective Online Engineering Education", Dr David Navarro-Alarcon developed a digital laboratory for effective online engineering education. This project was supported by the Quality Incentive Scheme on Online Teaching 2021.

To address the strong market needs and the department expertise, a new specialism (Green Energy) for MSc in Mechanical Engineering programme was proposed to add into the existing MSc in ME programme. This new specialism has been approved by the University, to be formally launched in 2023/24.

Research and Consultancy

The world-class research produced by ME scholars has been recognized in different ways. According to the recent "Updated science-wide author databases of standardized citation indicators", compiled by Stanford University and published in Oct 2021, 20 ME academics (12 of them is current ME members) have been ranked among the world's top 2% most-cited scientists in their main disciplines for career-long citation impact. In particular, Prof. Chen Guohua has been ranked No. 13 among the most-cited scientists in the world in the area of chemical engineering. Furthermore, Dr Zhang Xiao was listed as one of the eight academics from PolyU who have been acknowledged in the "2021 Highly Cited Researchers" list by Clarivate Analytics. The list identifies the most influential scholars around the world for their exceptional research performance, determined by the publication of multiple highly cited papers that rank in the top 1% by citations in each respective field.

ME colleagues have been active in pursuing research collaboration. During this reporting period, several collaborative research projects were secured, including Dr Ruan Haihui's industry collaborative project with Biel Crystal (HK) Manufacturing Limited (HK$5.5m). Dr Zheng Guangping's Green Tech project "A safe, efficient and facile approach for hydrogen storage and generation: catalytic hydrolysis of solid-state hydrogen storage materials" in 21/22 collaborating with Prof. Zheng Xincheng from Zhengzhou University (HK$3.3m). Three successful General Research Grants in 21/22 collaborating with University of Toronto, Tianjin University and Northwestern Polytechnical University respectively. Five successful Joint Postdoc Scheme with non-local Institutions in 21/22, three of them with Tsinghua University, one with Shanghai Jiaotong University and one with National University of Singapore. Two successful Joint Supervision with University of Science and Technology China and University of Science and Technology Beijing respectively. Dr An Liang's 深港澳科技計劃項目 (C 類項目）“直接醇类燃料电池关键基础问题研究” collaborating with Dr Xu Xinhua from Harbin Institute of Technology (HK$1.2m). Dr An Liang's NSFC/RGC Joint Research Scheme "Construction of Bismuth-based Nano/Micro-structures and their Applications in Photoelectrochemical Cells for Solar-driven Ambient Ammonia Production" collaborating with Prof Chen Rong from Chongqing University (HK$1.3m).

Our research reputation is further evidenced by the success in securing highly competitive research grants. The Research Grants Council announced in June 2022 the results of General Research Fund (GRF) and Early Career Scheme (ECS). Seven of our GRF/ECS proposals were funded in 2022/23 exercise and ME's success rate for the GRF was 29%. The total external fund secured by the Department in 2021/2022 was about HK$32 million. Our research teams in a wide spectrum continued to build valuable links in Hong Kong, mainland China and overseas via consultancy work, industry collaboration and research collaborations, to advance our goals in knowledge transfer.

Accomplishments and Highlights

In this academic year, our staff shined in various international recognitions. Prof. Chen Guohua was elected to the Canadian Academy of Engineering (CAE). Election to the CAE is one of the highest honours to recognize the distinguished achievements and career-long service to the engineering profession. Prof. Cheng Li was awarded the Distinguished Fellow by International Institute of Acoustics and vibration (IIAV). Receiving a such title, Prof. Cheng became one of the eleven outstanding individuals that IIAV has ever elected to such a prestigious grade. Prof. Fu Mingwang was elected to the 2022 SME (Society of Manufacturing Engineers) College of Fellows. Notably, only eight individuals were elected to the 2022 SME College of Fellows and he was the only individual outside of the United States. Dr An Liang has been elected as a Fellow of the Royal Society of Chemistry (RSC), a professional society based in the United Kingdom with over 50,000 members worldwide. Becoming a Fellow of RSC is a great recognition of Dr An’ s contributions to the advanced energy conversion and storage field. The names of newly elected Fellows are published each year in The Times (London).

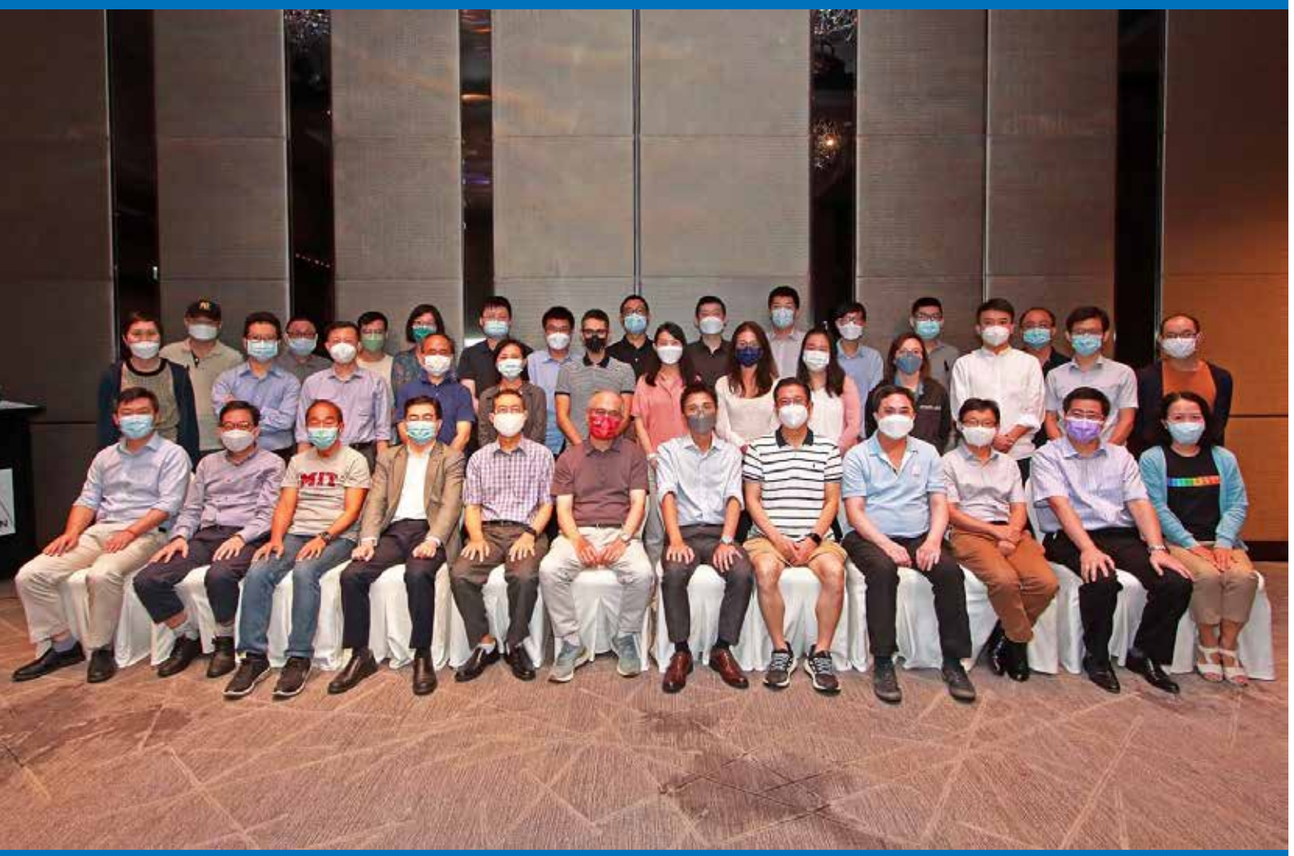
The commencement of a fresh academic year brings forth both prospects and obstacles. Although several challenges persist, the opportunities appear equally promising. As we gaze into the future, we will persist in leveraging our commendable abilities in teaching, research, knowledge dissemination, and community engagement.

Prof. SU Zhongqing

Head
Department of Mechanical Engineering

Our People

Our professional and passionate staff members, under the support from Departmental Advisory Committee and Academic Advisor, play a vital role in the substantial contributions made both individually and collectively towards the continuous development of the Department, the University and the community.



Department Structure

Advisory Committee — **Head of Department** — **Academic Advisor**

Departmental Committees

- Departmental Staffing Committee
- Departmental Management Committee
- Departmental Research Committee
- Departmental Learning and Teaching Committee
- Departmental Learning Outcomes Assessment Committee
- Departmental Publicity Committee
- Space Allocation Committee
- Programme Committees
  - Departmental Undergraduate Programmes Committee
  - Departmental Postgraduate Programmes Committee
  - MSc in ME Award Committee
- Work-Integrated-Education Committee
- Departmental Health and Safety Committee

Research Centres/ Consortiums

- Research Centre for Fluid-Structure Interactions
- Consortium for Advanced Materials Research
- Consortium for Combustion and Pollution Control
- Consortium for Sound and Vibration Research

Discipline Areas

- Control, Acoustics and Dynamics
- Materials and Solid Mechanics
- Thermofluids and Combustion

Support Groups

- Administrative Support
- Technical Support

Advisory Committee

Chairman

Ir Dr Angus HW Cheung
Chief Executive Officer
Aerovision Technology Limited

Ex-officio Members

Prof Zhongqing Su
Professor & Head
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Prof HC Man
Dean
Faculty of Engineering
The Hong Kong Polytechnic University

Members

Dr Vanessa Au
Principal Environmental Protection Officer (Regional West)
Environmental Protection Department, HKSAR

Mr Richard CW Chan, JP
Assistant Director
Engineering Services Branch 3
Electrical & Mechanical Services Department, HKSAR

Mr Chan Hing Keung
General Manager - Engineering & Innovation Centre
MTR Corporation Limited

Prof Guohua Chen
Chair Professor
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Ir Chris KC Cheung
Chief Operating Officer - China
CLP Holdings Limited

Mr Edmond Lai
Chief Digital Officer
Hong Kong Productivity Council

Dr Mengying Li
Assistant Professor
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Mr Banting WP Sze
Chairman and Chief Executive Officer
Freetech Road Recycling Technology (Holdings) Limited

Dr Guangping Zheng
Associate Professor
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Overseas Members

Prof Bing Li
Professor
Dean of School of Mechanical Engineering and Automation
Harbin Institute of Technology, Shenzhen

Dr Chengmao Xu
President of the Corporate Research Center
Midea Group

Prof Vigor Yang
Regents Professor
Daniel Guggenheim School of Aerospace Engineering
College of Engineering
Georgia Institute of Technology

Student Representatives

Miss Chan Hoi Yi
Full-time BEng Student
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Miss Jiang Qian
Full-time PhD Student
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Secretary

Ms Lily Tam
Senior Executive Officer
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Assistant Secretary

Ms Joanne Cheng
Executive Officer
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Academic Advisor

Departmental Academic Advisor

Prof. Alexander M. Korsunsky
Vice President and Fellow of Trinity College
Professor of Engineering Science
Department of Engineering Science
University of Oxford, Oxford, UK

Departmental Committee Chairman

	Chairman
Departmental Staffing Committee	Prof. ZQ Su
Departmental Management Committee	Prof. ZQ Su
Departmental Research Committee	Dr H Tang
Departmental Learning and Teaching Committee	Dr P Zhang
Departmental Learning Outcomes Assessment Committee	Dr P Zhang
Departmental Publicity Committee	Dr YS Choy
Space Allocation Committee	Prof. ZQ Su
Programme Committees	
• Departmental Undergraduate Programmes Committee	Dr P Zhang
• Departmental Postgraduate Programmes Committee	Dr HM Yao
• MSc in ME Award Committee	Dr HM Yao
Work-Integrated-Education Committee	Dr WO Wong
Departmental Health and Safety Committee	Dr Curtis Ng

Research Centre/ Consortium Director

	Director
Research Centre for Fluid-Structure Interactions	Dr H Tang
Consortium for Advanced Materials Research	Prof. MW Fu
Consortium for Combustion and Pollution Control	Prof. TL Chan
Consortium for Sound and Vibration Research	Prof. L Cheng

Discipline Areas Group Leader

	Group Leader
Control, Acoustics and Dynamics	Prof. L Cheng
Materials and Solid Mechanics	Prof. MW Fu
Thermofluids and Combustion	Prof. TL Chan

Academic Staff (as at 30 June 2022)

Head and Professor

SU Zhongqing (Prof.) 蘇眾慶教授 BSc (BUAA); MEng (BUAA); PhD (Syd.,)	Structural Health Monitoring (SHM); Wave Propagation; Sensors and Sensor Network; Non-destructive Evaluation (NDE); Smart Materials and Structures; Advanced Composite Materials

Associate Head and Associate Professor

TANG Hui (Dr) 唐輝博士 BEng(Tsinghua); MEng (Tsinghua); PhD (Manchester)	Aerodynamics; Hydrodynamics; Active flow control; Fluid-structure Interaction; Multiphase flow
ZHANG Peng (Dr) 張鵬博士 BSc (USTC); MSc (IMCAS); PhD (Princeton)	Theoretical and numerical combustion; Chemical kinetics; Droplet and spray dynamics; Rarefied gas dynamics

Emeritus Professor

SO Ming Cho Ronald (Prof.) 蘇銘祖教授 BSc(Hons); MEng; MA; PhD; DSc; Hon DEng; FWIF; FIMechE; FASME; MIAA; FRAeS; FAIAA	Turbulence modeling; Fluid-structure interaction; Flow-induced vibration; Direct aeroacoustics simulation; Lattice Boltzmann-type equation
TONG Timothy W. (Prof.) 唐偉章教授 BSc; MSc; PhD; FASME; FHKEng; JP	High performance computing of radiative heat transfer; Heat transfer in porous media; Energy conservation; Thermal insulation systems; Thermal control of aerospace systems; Thermal radiation; Heat transfer in fuel cells

Otto Poon Charitable Foundation Professor in Smart and Sustainable Energy, and Chair Professor of Energy Conversion and Storage

CHEN Guohua (Prof.) 陳國華教授 B.Eng. (Dalian University of Technology); M.Eng.; PhD (McGill), FHKIE, Fellow AIChE	Advanced electrode materials for energy storage; electrochemical technologies for energy and environmental applications; drying of high value products

Chair Professor of Mechanical Engineering

CHENG Li (Prof.) 成利教授 BSc (Xi'an Jiaotong Univ.); DEA; Ph.D. (INSA, Lyon, France); FCAE; DFIIAV; FASA; FASC; FHKIE; FHKIOA; FIIAV; FIMechE	Noise and vibration control; Fluid-structure interaction; Damage detection and smart material/structure/products

Distinguished Research Professor

LEUNG Woon Fong Wallace (Prof.) 梁煥方教授 BSc(Cornell U.); MSME(MIT); ScD(MIT); Fellow of ASME, HKIE, AFS and AICHE; Senior Member of AIAA; Member of ACS and SBE	Novel Nanofiber technologies in Energy, Environment, and Health applications

Distinguished Honorary Professor of Materials Science and Engineering

XU Qiang (Dr) Ph.D. (Osaka University); FRSC; Member of European Academy of Sciences (EURASC)	Materials chemistry; Energy storage and conversion; Porous materials (MOFs, carbons, etc); Nanoparticles; Catalysis; Fuel cells; Batteries; Supercapacitors; Hydrogen generation and storage

Professor

CHAN Tat Leung (Prof.) 陳達良教授 BSME; MSME; PhD; Ir; Eur Ing; CEng; RPE; FASME; FHKIE; FIMechE; FSAE	Multiphase and multi-component complex systems with micro- and nanoscale; Aerosol science & technology; Transport and formation of nano/microparticles and gaseous pollutants; Combustion & emissions formation; On-road vehicle emission measurement, control and modelling techniques; Thermal-fluids science & engineering.
FU Mingwang (Prof.) 傅銘旺教授 BEng; MEng (Xi'an Northwestern PolyU); PhD (National Univ. of Singapore)	Product design and development; CAD and CAE; Manufacturing technologies; Nano-processing of bulk materials and micro-realization of micro product/systems

Associate Professor

AN Liang (Dr) 安亮博士 PhD (HKUST)	Thermofluid; Energy conversion and storage technologies; Advanced materials
CHOY Yat Sze (Dr) 蔡逸思博士 BEng; PhD (HK PolyU); MIOA	Sound induced vibration; Duct noise control; Building and room acoustics; Environmental noise measurement and control; Aeroacoustics; Sound Sources identification; Sound quality of product and its assessment; Soundscape study, planning and design
LEUNG Chi Kin Randolph (Dr) 梁志堅博士 PhD; Senior MAIAA; MASME; MIED; MIOA; MHKIE; MHKIOA	Computational aeroacoustics and gas dynamics; Wind turbine aerodynamics; Flow-induced sound and structural vibration; Aviation science; HVAC compressor and system design; Product sound and vibration quality
LIU Yang (Dr) 劉陽博士 BSc(USTC); MEng(BUCT); PhD(Syd.); MHKIE	Biomechanics; CFD; Flow-induced vibration and thermal management
RUAN Haihui (Dr) 阮海輝博士 PhD (HKUST)	Solid Mechanics; Plasticity; Constitutive modeling; Amorphous Materials; Nanomaterials; Impact; Collision and Crashworthiness
WONG Wai On (Dr) 黃偉安博士 BEng; MSc; PhD (HK PolyU); MIMechE; CEng; MHKIE	Laser diagnostics; Structural dynamics; Signal processing

YAO Haimin (Dr) 姚海民博士 BEng, MEng (Tsinghua); Dr.rer.nat.(Universitat Stuttgart)	Solid Mechanics (specialized in Fracture Mechanics and Contact Mechanics); Bio-inspired Mechanics and Materials; Advanced Energy Materials; Nanomechanics
ZHENG Guangping (Dr) 鄭廣平博士 BBS., MS. (Sun Yat-sen); Ph.D. (Johns Hopkins)	Computational materials science; Mechanical properties of nanomaterials; Applications of nanomaterials in energy conversion and storage

Assistant Professor

CHENG Song (Dr) 成松博士 VS (UC Berkeley); PhD (UniMelb); MSAE; MCI; MASME; MIEA	Gas Phase Chemical Kinetics; Real-fluid Oxidation Chemistry; Low-carbon Oxidation Chemistry; Uncertainty Quantification and Optimization; Optimal Decision Making; Machine Learning
CHU Kar Hang Henry (Dr) 朱嘉行博士 BASc (Waterloo); MASc and PhD (Toronto)	Robotic manipulation; Vision-based control and automation; Micro-system design and Tissue engineering
JIAO Zengbao (Dr) 焦增寶博士 BSc (CUGB), MEng (USTB); PhD (CityU)	Advanced structural materials; High-temperature and high-strength alloys; Nanostructured alloys; Mechanical properties; 3D atom probe tomography
LI Mengying (Dr) 李夢穎博士 BEng (Tsinghua); MSc (Pennsylvania) and PhD (UCSD)	Energy Meteorology, Solar energy resourcing and forecasting, Remote sensing, Radiative heat transfer, Mass transfer, Renewable power systems, Large scale energy storage, Passive cooling, Desalination
MA Yuan (Dr) 馬源博士 BEng & MEng (Tsinghua); PhD (UC Berkeley)	Haptics, human-machine mechanical interface, sensors and actuators for wearable electronics, tribology, cross-scale and multi-physics modeling, application of artificial intelligence
David NAVARRO-ALARCON (Dr) 毛大衛博士 PhD (CUHK)	Robotics and Controls
WU Maochun (Dr) 巫茂春博士 BEng (SCUT); PhD (HKUST)	Electrochemical energy storage and conversion; Advanced battery materials; Heat and mass transfer
ZHANG Xiao (Dr) 張曉博士 PhD (NTU, Singapore)	Electrocatalysis; Carbon capture and conversion; Electrochemical reactor design; Membrane electrode assembly; 2D nanomaterials

Research Assistant Professor

LIU Qiang (Dr) 劉強博士 PhD (HKUST)	Conformal polymer coating, polymer chemical vapor deposition, conducting polymers, energy-storage materials, lithium-ion batteries
SUN Yuxiang (Dr) 孫宇翔博士 PhD (CUHK)	Autonomous Driving, Robotics, AI, Deep Learning, Robotic Perception, Autonomous Navigation, SLAM, Robotic Control, Mobile Robots, Unmanned Systems
WANG Chenglei (Dr) 王成磊博士 PhD (NTU, Singapore)	Fluid-structure interaction; Flow control; Computational fluid dynamics; Lattice Boltzmann method
YU Xiaoliang (Dr) 於曉亮博士 PhD (Tsinghua)	Nanocarbon based materials; Interface design of composite materials; Electrochemical energy storage

Senior Teaching Fellow

TAM Wai Yin Eunice (Dr) 譚慧賢博士 BEng (HK PolyU); MEng (HK PolyU); PhD (UNO)	Composite and application; Composite manufacturing; Nanocomposite (carbon nanotube/polymer) structure

Senior Instructor

TANG Wai Fong Elsa (Ir) 鄧慧芳工程師 MSc (HKU); MSc (Liverpool); BEng (Liverpool); MHKIE, CEng, MIMechE	Computer aided design; Computer aided engineering; Product design and management; Basic scientific computing; Supply chain management

Administrative Support Staff

TAM Man Yee, Lily (Ms)	Leader, Senior Executive Officer
CHO Sau Yung, Karen (Ms)	Assistant Marketing Manager
CHENG Sze Ting, Joanne (Ms)	Executive Officer
YUEN Man Hei, Hilary (Miss)	Executive Officer
LEUNG Lap Pun, Eric (Mr)	Executive Assistant
CHAN Bik Ki, Packy (Ms)	Clerical Officer II
LAI CHAN Sin Fan, Michelle (Mrs)	Clerical Officer II
NGAI Oi Ling, Irene (Miss)	Clerical Officer II
WONG Sin Hing, Merlin (Ms)	Clerical Officer II
WONG Kam Yan (Ms)	Clerk

Technical Support Staff

NG Chun, Curtis (Ir Dr)	Leader, Senior Technical Officer
LEUNG Chi Kuen, Benny (Mr)	Technical Officer
NG Chun Hung, Stephen (Dr)	Technical Officer
TSANG Kwong Shing (Mr)	Technical Officer
TSE Kwai Wa (Mr)	Technical Officer
WONG Kwok Wai (Mr)	Technical Officer
YUEN Ka On (Mr)	Technical Officer
TANG Kam Keung (Mr)	Technician
CHAN Cho Yan (Mr)	Assistant Technical Officer
NG Pak Kwan, John (Mr)	Assistant Technical Officer
YAN Chiu Hang (Mr)	Assistant Technical Officer

Staff Movement (1 July 2021 – 30 Jun 2022)

Concurrent Appointment

Prof. ZQ Su was appointed as Head
Dr P Zhang was appointed as Associate Head (Teaching)
Prof. L Cheng was appointed as Associate Dean (Research), Faculty of Engineering
Prof. MW Fu was appointed as Associate Director, Research Institute of Advanced Manufacturing

Promotion

Dr HH Ruan was promoted to Associate Professor

New Appointment

Dr S Cheng, Assistant Professor
Dr Y Ma, Assistant Professor
Dr MC Wu, Assistant Professor
Dr X Zhang, Assistant Professor
Mr John Ng, Assistant Technical Officer

Retirement

Prof. SQ Shi, Head and Chair Professor
Mr Raymond Chan, Scientific Officer II

Staff Departure

Dr XJ Jing, Associate Professor
Dr J Zhu, Associate Professor
Dr T Liu, Research Assistant Professor

Research Personnel

Research Fellow (Full-time)

Lam Chi Yan Garret (Dr) 林志欣	PhD, The Hong Kong Polytechnic University, HK
Liu Yang (Dr) 刘洋	PhD, Dalian University of Technology, China
Qin Xusong (Dr) 覃旭松	PhD, The Hong Kong University of Science and Technology, HK

Research Fellow (Part-time)

Xi Qiang (Dr) 席強	PhD, The Hong Kong Polytechnic University, HK

PolyU Distinguished Postdoctoral Fellow (Full-time)

Lin Cong (Dr) 林聪	PhD, Chongqing University, China

Postdoctoral Fellow (Full-time)

Bai Zhaowen (Dr) 白肇文	PhD, The Hong Kong University of Science and Technology, HK
Bi Xiaobo (Dr) 毕晓波	PhD, University of California San Diego, US
Chai Yuyang (Dr) 柴玉阳	PhD, Harbin Inst of Tech, China
Chen Yafeng (Dr) 陈亚枫	PhD, Hunan University, China
Cheng Junye (Dr) 程俊業	PhD, City University of Hong Kong, HK
Dong Peixin (Dr) 董沛鑫	PhD, The University of Queensland, Australia
ENTEZARI Akram (Dr)	PhD, Shanghai Jiaotong University, China
Fu Yiqiang (Dr) 符毅强	PhD, University of Liverpool, UK
Gao He (Dr) 郜贺	PhD, The Hong Kong Polytechnic University, HK
Ge Bingcheng (Dr) 葛炳成	PhD, Yanshan University, China
Lin Dongmei (Dr) 林冬梅	PhD, The Hong Kong Polytechnic University, HK
Liu Fatang (Dr) 刘发堂	PhD, Harbin Institute of Technology, China
Liu Yang (Dr) 刘洋	PhD, Dalian University of Tech, China
Liu Yang (Dr) 刘洋	PhD, Dalian University of Technology, China
Liu Yuanming (Dr) 刘沅明	PhD, Tsinghua University, China
Lo Kin Shing Kenneth (Dr) 盧健誠	PhD, The Hong Kong Polytechnic University, HK
Ma Yuan (Dr) 馬原	PhD, Tongji University, China
MAJUMDER Soumyadip (Dr)	PhD, The Hong Kong University of Science and Technology, HK
Niu Mengchao (Dr) 牛梦超	PhD, University of Science and Technology of China, China
Pan Zhefei (Dr) 潘哲飞	PhD, The Hong Kong Polytechnic University, HK

RAY Saroj (Dr)	PhD, Indian Institute of Technology Madras, India
Shen Qingliang (Dr) 沈庆凉	PhD, Northwestern Polytechnical University, China
Wang Jianbiao (Dr) 王建彪	PhD, The Hong Kong Polytechnic University, HK
Wang Wei (Dr) 王伟	Doctor, Northwestern Polytechnical University, China
Wang Zhijie (Dr) 王志杰	PhD, Yanshan University, China
Wong Man Chung (Dr) 黃文聰	PhD, The Hong Kong Polytechnic University, HK
Wu Junxiong (Dr) 吴军雄	PhD, The Hong Kong University of Science and Technology, HK
Xu Huaiyuan (Dr) 徐怀远	Doctor, Tianjin Univeristy, China
Xu Zeyu (Dr) 徐澤宇	Doctor, University of Science and Technology of China, China
Yang Weiping (Dr) 杨维平	PhD, The Hong Kong Polytechnic University, HK
Zhang Menghua (Dr) 张梦华	PhD, Shandong University, China
Zhang Ruihan (Dr) 張瑞寒	PhD, The Hong Kong University of Science and Technology, HK
Zheng Zebang (Dr) 郑泽邦	PhD, Imperial College of London, UK
Zhu Jianjian (Dr) 朱健健	PhD, Xiamen University, China
Zhu Kai (Dr) 朱凯	PhD, Jilin University, China

Research Associate (Full-time)

ANSARI Talha Qasim (Dr)	PhD, The Hong Kong Polytechnic University, HK
ARIF Muhammad Irsalan (Dr)	PhD, The Hong Kong Polytechnic University, HK
Duan Anqing (Dr) 段案清	PhD, Italian Institute of Technology, Italy
Gu Zhongming (Dr) 顾仲明	PhD, Nanjing University, China
Li Jie (Dr) 李洁	PhD, The Hong Kong Polytechnic University, HK
Qiu Shi (Dr) 邱实	PhD, Beihang University, China
Wang Xuchao (Dr) 王旭超	PhD, Shandong University, China
Wang Yubao (Dr) 王玉宝	PhD, Shandong University, China
Wu Shilin (Dr) 吴士林	PhD, Beihang University, China
Zhao Zhipeng (Dr) 赵志鹏	PhD, Tongji University, China

Research Associate (Part-time)

Chan Yui Ho (Dr) 陳銳豪	PhD, The Hong Kong Polytechnic University, HK
Wong Chun Nam (Dr) 黃振南	PhD, University of Maryland, Baltimore Country, US
Yu Ho Man (Dr) 余浩文	PhD, The Hong Kong Polytechnic University, HK

Research Assistant (Full-time)

ABBAS Waseem	MS, Xi'an Jiaotong University, China
Bai Junfeng 白俊锋	BEng, Beihang University, China
Chen Bohan (Dr) 陳博涵	PhD, Yanshan University, China
Chen Junjie 陈俊杰	BEng, Northwestern Polytechnical University, China
DUONGTHIPTHEWA Anchalee (Dr)	PhD, The Hong Kong Polytechnic University, HK
Feng Zhenyong 冯振勇	MSc, Northwestern Polytechnical University, China
Hu Feizhou 胡飞洲	MSc, The Hong Kong Polytechnic University, HK
Hu Liang 胡亮	MSc, University of Chinese Academy of Sciences, China
Hu Luyin 胡鲁印	BEng, The Hong Kong Polytechnic University, HK
Lee Hoi Yin 李凱然	BEng, The Hong Kong Polytechnic University, HK
Li Dongfang (Dr) 李東方	PhD, The Hong Kong Polytechnic University, HK
Lin Junlin 林俊琳	MSc, The Hong Kong Polytechnic University, HK
Liu Ningyu (Dr) 刘宁宇	PhD, University of Liverpool, UK
Ng Kwok Leung 吳國良	BSc, City University of Hong Kong, HK
RAI Sanjaya	BEng, The Hong Kong Polytechnic University, HK
Sun Hong (Ms) 孙红	BEng, Northwestern Polytechnical University, China
Wang Jiaxuan 王家轩	Master, Beijing Institute of Technology, China
Wang Leizhi 王垒智	MEng, Nanjing Tech University, China
Wang Zhaokun 王兆坤	MEng, Beijing University of Technology, China
Wong Chun Kit 黃俊傑	BEng, The Hong Kong Polytechnic University, HK
Wong Sing-long 黃升朗	BEng, The Chinese University of Hong Kong, HK
Xie Yujie 谢玉洁	MSc, The Hong Kong Polytechnic University, HK
Yang Heng 楊恒	Doctor, Northwestern Polytechnical University, China
Yeung Wai Kin 楊偉堅	MSc, The Hong Kong Polytechnic University, HK
Zhang Bin 张斌	Master, China Academy of Space Technology, China
Zhang Chong 張崇	MSc, The University of Hong Kong, HK
Zhang Rui 張睿	MEng, Shanghai Jaiotong University, China
Zheng Yi 郑毅	MEng, Dalian University Tech, China
Zhou Bingchen (Dr) 周冰晨	PhD, The Hong Kong Polytechnic University, HK

Research Assistant (Part-time)

Ai Chunhui 艾春晖	MSc, Shanghai Jiaotong University, China
Chan Chak Ngai Ian 陳澤毅	Master, The Hong Kong Polytechnic University, HK
Chi Yicheng 池奕承	MSc, The Hong Kong Polytechnic University, HK
Cui Zhenxi 崔珍錫	MSc, The Hong Kong Polytechnic University, HK
ECCEL VELLWOCK Andre	MSc, Politecnico di Milano, Italy
ESAN Oladapo Christopher	MSc, Cranfield University, UK
GOMEZ DOMINGUEZ Domingo	MSc, Technical University of Denmark, Denmark
Jiang Xiao 蒋潇	MEng, Wuhan University of Science and Technology, China
Lai Jiewen 賴捷文	BEng, Wuhan University of Science and Technology, China
Li Guangzhe 李广喆	Master, Harbin Institute of Technology, China
Li Jie 李洁	MEng, Tianjin University, China
Li Meng 李蒙	MEng, Beijing University of Technology , China
Liu Hui 刘徽	Student, The Hong Kong Polytechnic University, HK
Liu Mingran 劉銘然	MSc, The Hong Kong Polytechnic University, HK
LYAPUNOV Nikolay	PhD student, The Hong Kong Polytechnic University, HK
Ma Wanyu 马婉玉	MEng, Harbin Institute of Technology, China
MUDDASSIR Muhammad	MSc, Beijing Institute of Technology, China
Su Yiyin 苏义印	MSc, The Hong Kong Polytechnic University, HK
Sun Ruqi 孙汝奇	MEng, China University of Petroleum (East China), China
Wang Yiling 王逸凌	BEng, China University of Geoscience, China
Xu Lei 许磊	Master, Nanjing University of Aeronautics and Astronautics, China
Yang Jianwei 杨建伟	MEng, Xiamen University, China
Yang Tao 杨涛	MSc, The Hong Kong Polytechnic University, HK
Yang Xiongbin 杨雄斌	Master, Xi'an Jiaotong University, China
Zhou Pengyu 周鹏宇	Bachelor, Harbin Institute of Technology, China
Zhou Zeqi 周泽齐	MSc, Tianjin University, China
Zhu Yinggang 朱迎港	BEng, Southern University of Science and Technology, China

Research Assistant (Part-time) (MSc Dissertation Scholarship)

Chen Siyu 陈思宇	Student, The Hong Kong Polytechnic University, HK
Chung Hing Kit 鍾鑫傑	Student, The Hong Kong Polytechnic University, HK
Guo Jiaming 郭嘉鳴	Student, The Hong Kong Polytechnic University, HK
Hu Dien 胡迪恩	Student, The Hong Kong Polytechnic University, HK
Jiang Zhiyi 蔣志毅	Student, The Hong Kong Polytechnic University, HK
Li Bowen 李博文	Student, The Hong Kong Polytechnic University, HK
Li Jieming 李介明	Student, The Hong Kong Polytechnic University, HK
Luo Guojie 雒国杰	Student, The Hong Kong Polytechnic University, HK
Qi Chunhui 祁春晖	Student, The Hong Kong Polytechnic University, HK
Tong Xu 仝旭	Student, The Hong Kong Polytechnic University, HK
Yang Zirui 杨孜锐	Student, The Hong Kong Polytechnic University, HK
Yu Antong 余岸潼	Student, The Hong Kong Polytechnic University, HK
Zhang Tanhao 张潭昊	Student, The Hong Kong Polytechnic University, HK
Zhang Wensen 張文森	Student, The Hong Kong Polytechnic University, HK
Zhang Yuzhou 张裕洲	Student, The Hong Kong Polytechnic University, HK

Project Assistant (Full-time)

Long Guimin 龙贵民	MSc, Hunan University, China

Student Assistant (Full-time)

Cheung Hiu Ching 張曉晴	Student, The Hong Kong Polytechnic University, HK
Lau Chun Yin 劉俊言	Student, The Hong Kong Polytechnic University, HK
Lo Chun Lok 盧俊洛	Student, The Hong Kong Polytechnic University, HK

Student Assistant (Part-time)

Chan Chak Wing 陳澤榮	Student, The Hong Kong Polytechnic University, HK
Cheng Ho Yuet 鄭皓月	Student, The Hong Kong Polytechnic University, HK
Dai Yichen 戴一辰	Student, The Hong Kong Polytechnic University, HK
DELA CRUZ Xavier Roi	Student, The Hong Kong Polytechnic University, HK
Hu Jipeng 胡骥鹏	Student, The Hong Kong Polytechnic University, HK
Hui Wai Lok 許瑋諾	Student, The Hong Kong Polytechnic University, HK
KHAN Hamad	Student, The Hong Kong Polytechnic University, HK
KHAYDAROV Mansur	Student, The Hong Kong Polytechnic University, HK
Lam Cheuk Ngai 林卓毅	Student, The Hong Kong Polytechnic University, HK
Leung Wui Hang 梁匯鏗	Student, The Hong Kong Polytechnic University, HK
Liu Qiyan 刘其炎	Student, The Hong Kong Polytechnic University, HK
Ma Kwok Ho 馬國浩	Student, The Hong Kong Polytechnic University, HK
MALIK Muhammad Aayan	Student, The Hong Kong Polytechnic University, HK
Qiu Liuming 邱刘铭	Student, The Hong Kong Polytechnic University, HK
Tam Ho Yin 譚浩賢	Student, The Hong Kong Polytechnic University, HK
Tan Jun Jong 陳俊榕	Student, The Hong Kong Polytechnic University, HK
Wang Dapeng 王大鹏	Student, The Hong Kong Polytechnic University, HK
WEERASINGHE Kasuntha Gimshan	Student, The Hong Kong Polytechnic University, HK
Wong Yee Kei 王依琦	Student, The Hong Kong Polytechnic University, HK
Yang Zhuoxin 杨卓鑫	Student, The Hong Kong Polytechnic University, HK
Zhang Yuzhe 张宇哲	Student, The Hong Kong Polytechnic University, HK
Zhang Zhewei 张哲玮	Student, The Hong Kong Polytechnic University, HK
Zhao Zhen 赵震	Student, The Hong Kong Polytechnic University, HK
Zhu Yao 朱瑤	Student, The Hong Kong Polytechnic University, HK

PhD Student (Full-time)

ABDELKAREEM Mohamed Abdelrahman Ali	MSc	Wuhan University of Technology, China
AI Chunhui 艾春晖	MSc	Shanhai Jiao Tong University, China
AKBAR Muhammad Ayaz	MSc	Dalian University of Technology, China
AKHTAR Awais	MSc	Dalian University of Technology, China
AN Shuowei 安烁威	Master	Harbin Engineering University, China
CHAO Xu 晁旭	MSc	The Hong Kong Polytechnic University, HK
CHEN Keyu 陈柯雨	Master	Harbin Institute of Technology, China
CHEN Shanlin 陈山林	Master	Instituto Superior Técnico, University of Lisbon, Portugal
CHEN Zongnan 陳宗南	MSc	The Hong Kong Polytechnic University, HK
CUI Zhenxi 崔珍锡	MSc	Shanghai University, China
CHI Yicheng 池奕承	MEng	The Hong Kong Polytechnic University, HK
DENG Fang 邓放	Master	Politecnico di Milano, Italy
ECCEL VELLWOCK Andre	MSc	Cranfield University, UK
ESAN Oladapo Christopher	MSc	Hunan University, China
FAN Haiyan 范海燕	MSc	Chongqing University, China
FAN Lei 范磊	Master	The Hong Kong Polytechnic University, HK
FANG Jieyichen 方洁怡晨	MSc	University of Science and Technology of China, China
FENG Yuchao 冯宇超	Master	Harbin Institute of Technology, China
FENG Zhen 冯振	Master	Northwestern Polytechnical University, China
FU Jin 傅进	MEng	Northwestern Polytechnical University, China
GAO Lihao 高立豪	MEng	University of Engineering and Technology, Lahore, Pakistan
GAO Shuang 高爽	Bachelor	Nanjing University of Aeronautics and Astronautics, China
GOHAR Ghulam Abbas	Master	The Hong Kong Polytechnic University, HK
GONG Chen 宫晨	Master	Huazhong University of Science and Technology, China
GUO Jiaming 郭嘉鸣	Master	Tongi University, China
GUO Xinze 郭新泽	Master	University of Chinese Academy of Sciences, China
HAFEEZ Saiqa	MSc	The Hong Kong Polytechnic University, HK
HAMEED Imran	BSc	University of Chinese Academy of Sciences, China
HE Yi 何意	MSc	Harbin Institute of Technology, China
HU Liang 胡亮	Master	Henan University, China
HUANG Guangyuan 黃光遠	BEng	Tongji University, China
HUANG Sibo 黄思博	Doctorate	Wuhan University of Science and Technology, China
HUO Shengzeng 霍盛增	Master	The Skolkovo Institute of Science and Technology, Russian Federation
JIANG Qian 姜倩	MSc	Harbin Engineering University, China
JIANG Qinghong 江庆红	MEng	Central South University, China
JIANG Shujuan 蒋淑娟	Master	The University of Manchester, UK
JIANG Xiao 蒋潇	MEng	The Hong Kong Polytechnic University, HK
KANDASAMY Subash	B.Tech	Shantou University, China
KWONG Tak Chun 鄺德俊	BEng	The Hong Kong Polytechnic University, HK
LABAZANOVA Luiza	Master	Beijing Jiaotong University, China
LAI Jiewen 賴捷文	BEng	Wuhan University of Science and Technology, China
LI Meng 李蒙	MEng	Beijing University of Technology, China
LI Sihui 李斯慧	Master	The Hong Kong Polytechnic University, HK
LI Tian 李添	Master	Harbin Institute of Technology, China
LI Ying 李颖	MEng	Harbin Institute of Technology, China
LIANG Zhaojian 梁钊健	Master	Huazhong University of Science and Technology, China
LIU Jinan 刘津安	MSc	Northeast Forestry University, China
LIU Mingran 劉銘然	MSc	The Hong Kong Polytechnic University, HK
LIU Qiutong 刘秋彤	Bachelor	Sichuan University, China
LIU Shuhong 劉书泓	MSc	The University of Sheffield, UK
LIU Yun 刘云	Master	National University of Science and Technology, Pakistan
LIU Yutong 劉雨桐	Master	University of Engineering and Technology, Lahore, Pakistn
LIU Ze 刘泽	MSc	Zhejiang University, China
LONG Tiehan 龙铁汉	MEng	University of Science and Technology of China, China
LU Tianhui 陆天惠	MSc	The Hong Kong Polytechnic University, HK
LYU Linlong 吕林龙	MSc	The Hong Kong Polytechnic University, HK
MA Siyao 马思遥	Master	X'ian Jiaotong University, China
MA Wanyu 马婉玉	MEng	Shandong University, China
MA Weixin 马伟鑫	Master	The Hong Kong University of Science and Technology, HK
MENG Shiyu 孟诗语	Master	Nanjing University of Aeronautics and Astronautics, China
NASEEM Sufyan	Master	Northwestern Polytechnical University, China
NASEER Muhammad Rehan	MSc	University of Science and Technology of China, China
NI Bingyu 倪冰雨	Bachelor	Western Michigan University, United States
RAZA Hassan	MSc	Shandong University, China
RUAN Jianyuan 阮建源	Master	Huazhong University of Science and Technology, China
SHI Xingyi 石星逸	Bachelor	The Hong Kong University of Science and Technology, HK
SONG Yang 宋阳	Master	Xiamen University, China
SUN Ruqi 孙汝奇	MEng	China University of Petroleum (East China), China
SUN Xiang 孙祥	MEng	University of Chinese Academy of Sciences, China
TIAN Yishen 田一申	Bachelor	The Hong Kong Polytechnic University, HK
TONG Xu 仝旭	Master	Tsinghua University, China
WANG Chuyang 王初阳	Master	The Hong Kong Polytechnic University, HK
WANG Fei 王飞	MSc	Xiamen University, China
WANG Man 王满	Doctor	Central South University, China
WANG Mingrui 王铭睿	Master	Shandong University, China
WANG Shu 王庶	MSc	Peking Univeristy, China
WANG Zhaokun 王兆坤	MEng	Beijing University of Technology, China
WEI Sheng 魏生	Master	China Academy of Space Technology, China

WENG Qingsong 瓮青松	MSc	The Hong Kong Polytechnic University, HK
WONG Bo Ching 黃步青	Master	Northeastern University, United States
WU Yifei 吴一飞	Master	Beihang University, China
XIE Chuyi 谢楚依	Master	The Hong Kong Polytechnic University, HK
XU Xin 徐新	Master	The Hong Kong Polytechnic University, HK
YANG Jianwei 杨建伟	MEng	The University of Manchester, UK
YANG Tao 杨涛	Master	The University of Sheffield, UK
YANG Wentao 杨文韬	MSc	Sichuen University, China
YANG Yi 杨熠	MSc	Tongji University, China
YANG Xiongbin 杨雄斌	MEng	Xi'an Jiaotong University, China
YE Ling 叶灵	Master	Huazhong University of Science and Technology, China
YEUNG Wai Kin 楊偉堅	Master	The Hong Kong Polytechnic University, HK
YU Qiang 庾强	Master	Harbin Institute of Technology, China
ZENG Lingwei 曾令伟	MSc	University of Engineering and Technology, Lahore, Pakistan
ZHAI Yanjie 翟艳杰	Master	University of Engineering and Technology, Lahore, Pakistan
ZHANG Bin 张斌	Master	Tongi University, China
ZHANG Linli 张林立	MSc	CSIR-Central Electrochemical Research Institute, India
ZHANG Wanglinhan 张王霖翰	Master	The Hong Kong Polytechnic University, HK
ZHANG Xin 张鑫	Master	The Hong Kong University of Science and Technology, HK
ZHANG Yuanman 张圆满	Master	Xidian University, China
ZHANG Yuzhou 张浴洲	Master	Southern University of Science and Technology, China
ZHANG Zijing 张紫荆	MSc	University of Electronic Science and Technology of China, China
ZHAO Binglong 赵冰龙	Master	Harbin Institute of Technology, China
ZHAO Liangjing 赵梁婧	MSc	Xi'an Jiaotong University, China
ZHAO Qingxiang 赵清祥	MEng	City University of Hong Kong, HK
ZHOU Peng 周鹏	MEng	City University of Hong Kong, HK
ZHOU Zengcheng 周曾成	MSc	Harbin Institute of Technology, China
ZHOU Zeqi 周泽齐	MSc	Tianjin University, China MSc, Tianjin Univ, China

PhD Student (Part-time)

CHAN Ying Ngai 陳英毅	MSc	The University of Hong Kong, HK
CHANG Ching Wei 張晉瑋	BSc	Yuan Ze University, Taiwan
LAM Ka Hei 林家熙	BEng	The Hong Kong Polytechnic University, HK

MPhil Student (Full-time)

LIU Yichen 刘轶宸	Bachelor	The Hong Kong Polytechnic University, HK
WANG Wei 王韦	Bachelor	Sun Yat-sen University, China
ZHU Yinggang 朱迎港	BEng	Southern University of Science and Technology, China
LEE Hoi Yin 李凱然	Bachelor	The Hong Kong Polytechnic University, HK

MPhil Student (Part-time)

TSOI Man Ho 蔡民豪	Bachelor	The Hong Kong University of Science and Technology, HK
YUEN Tsz Wai 袁子威	BEng	The Hong Kong Polytechnic University, HK

Honours & Awards

(1 July 2021 – 30 Jun 2022)

Prof. CHEN Guohua
- Fellow, Canadian Academy of Engineering (CAE) 2022

Prof. FU Mingwang
- SME (Society of Manufacturing Engineers) College of Fellows 2022
- Faculty of Engineering Merit Award in Research and Scholarly Activities: Outstanding Researcher (Individual) 2021

Prof. SU Zhongqing
- Faculty of Engineering Research Grant Achievement Award 2020

Prof. LEUNG Woon Fong, Wallace
- Faculty of Engineering Merit Award in Knowledge Transfer (Individual) 2020/21

Dr AN Liang
- Fellow of the Royal Society of Chemistry (RSC)
- Faculty of Engineering Outstanding Award in Research and Scholarly Activities: Outstanding Young Researcher (Individual) 2021

Dr CHOY Yat Sze
- Faculty of Engineering Merit Award in Teaching (Individual) 2021

Dr David NAVARRO-ALARCON
- Faculty of Engineering Merit Award in Teaching (Individual) 2021

Dr Sun Yuxiang
- 2022 Global Top Chinese Young Scholar in Artificial Intelligence

Professional Services

Prof. CHAN Tat Leung
- Chairman cum Editor-in-Chief, The Hong Kong Institution of Engineers Transactions Committee
- Member, Appeal Board Panel under Builders'Lifts and Tower Working Platforms (Safety) Ordinance (Chapter 470), Development Bureau, The Government of the Hong Kong Special Administrative Region
- Member, Appeal Board Panel under Gas Safety Ordinance (Chapter 51), Environment Bureau, The Government of the Hong Kong Special Administrative Region
- Honorary Chair, Society of Automotive Engineers International - Hong Kong Section
- Section Chair, American Society of Mechanical Engineers - Hong Kong Section
- Ex-officio Member, Learned Society Board of The Hong Kong Institution of Engineers

Prof. CHEN Guohua
- President, Asia-Pacific Confederation of Chemical Engineering
- Vice President, World Chemical Engineering Council
- Associate Director, Drying Division, The Chemical Industry & Engineering Society of China
- Executive Committee Member, The Chemical Industry & Engineering Society of China
- Member, Energy Storage Division, The Chemical Industry & Engineering Society of China
- Member, International Advisory Panel, The 10th World Congress of Chemical Engineering, Barcelona

Prof. CHENG Li
- Director, International Institute of Acoustics and Vibration (IIAV)
- Vice President, International Institute of Noise Control Engineering (I-INCE)
- Member, The International Steering Committee, Asia-Pacific Vibration Conference
- Member, Future Congress Technical Committee, International Institute of Noise Control Engineering (I-INCE)
- Member, Scientific Advisory Board, Research Center for Metropolitan Environmental Noise and Vibration Control, Shanghai Academy of Environmental Sciences, China
- Advisor, The AMSS-PolyU Joint Research Institute for Engineering and Management Mathematics
- Member, The Panel on Engineering and Science, The University of Macau
- Member, The Noise Control Appeal Board Panel, Secretary for the Environment, HKSAR
- Member, The Noise Technical Briefing Group, Airport Authority Hong Kong
- Member, Expert Panel, Automotive Parts and Accessory Systems R&D Centre
- Member, Engineering Panel, Research Assessment Exercise (RAE), RGC Hong Kong, 2020
- Member, Music Center Working Group, Performing Arts Committee of West Kowloon Cultural District Authority

Prof. FU Mingwang
- Advisory Board Member, The International Journal of Advanced Manufacturing Technology

Prof. LEUNG Woon Fong Wallace
- Engineering Panel Member (specialize in Mech. & Environmental), The Research Grants Council
- Chairperson, International Delegation on Filtration

Prof. SU Zhongqing
- Vice President, Equipment Structural Health Monitoring and Prognostics Branch of China Instrument and Control Society (CSHMP)
- Steering Committee Member, European Workshop on Structural Health Monitoring

Professional Services

- Scientific Committee Member, Asia-Pacific Workshop on Structural Health Monitoring
- International Organizing Committee Member, SPIE Conference Series on Smart Structures/NDE (Health Monitoring of Structural and Biological Systems)
- International Technical Committee Member, American Society of Mechanical Engineers (ASME) Conference Series on Non-destructive Evaluation, Diagnosis, and Prognosis Division
- International Scientific Committee Member, International Conference Series on Structural Health Monitoring and Integrity Management (ICSHMIM)
- Board Member, International Congress on Ultrasonics (ICU)

Dr CHOY Yat Sze
- Member, Energy Efficiency Appeal Board Panel, Electrical and Mechanical Services Department, HKSAR

Dr LEUNG Chi Kin Randolph
- Advisory Committee Chair, American Society of Mechanical Engineers – Hong Kong Section

Dr WONG Wai On
- Member, Pressure Equipment Advisory Committee, Boilers and Pressure Vessels Authority, HKSAR

Dr YAO Haimin
- EC member, Hong Kong Society of Theoretical and Applied Mechanics
- Vice-chair, 2019 Gorden Research Conference on Nano-mechanical Interface

Dr David NAVARRO-ALARCON
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)

Fellowships

Prof. CHAN Tat Leung
- Fellow of American Society of Mechanical Engineers (FASME)
- Fellow of The Hong Kong Institution of Engineers (FHKIE)
- Fellow of The Institution of Mechanical Engineers (FIMechE)
- Fellow of Society of Automotive Engineers International (FSAE)

Prof. CHEN Guohua
- Fellow of Canadian Academy of Engineering (FCAE)

Prof. CHENG Li
- Fellow of Canadian Academy of Engineering (FCAE)
- Fellow of Acoustical Society of America (FASA)
- Fellow of Acoustical Society of China (FASC)
- Distinguished Fellow of International Institutes of Acoustics and Vibration
- Fellow of The Hong Kong Institute of Acoustics (FHKIOA)
- Fellow of The Hong Kong Institution of Engineers (FHKIE)
- Fellow of The Institution of Mechanical Engineers (FIMechE)

Prof. FU Mingwang
- SME (Society of Manufacturing Engineers) College of Fellows

Prof. LEUNG Woon Fong Wallace
- Fellow of Hong Kong Academy of Engineering Sciences (FHKAES)
- Fellow of American Society of Mechanical Engineers (FASME)
- Fellow of American Institute of Chemical Engineers (FAICHE)
- Fellow of The Hong Kong Institution of Engineers (FHKIE)
- Fellow of American Filtration & Separations Society (FAFS)

Prof. SU Zhongqing
- Fellow of The Hong Kong Institution of Engineers (FHKIE)

Dr AN Liang
- Fellow of the Royal Society of Chemistry (FRSC)

Journal Editorships

Prof. CHAN Tat Leung
- Editor: Aerosol and Air Quality Research, Taiwan Association for Aerosol Research
- Editor-in-Chief: The Hong Kong Institution of Engineers Transactions, HKIE
- Editorial Advisory Board Member: Flow, Turbulence and Combustion, Springer

Prof. CHEN Guohua
- Editor: Separation and Purification Technology, Elsevier
- Associate Editor: Chinese Journal of Chemical Engineering, Elsevier
- Subject Editor: Process Safety and Environmental Protection - Official Journal of the European Federation of Chemical Engineering: Part B, Elsevier

Prof. CHENG Li
- Deputy Editor-in-Chief and Receiving Editor: Journal of Sound and Vibration, Elsevier
- Associate Editor: The Journal of the Acoustical Society of America, IOP publishing
- Associate Editor: Structural Health Monitoring, An international Journal. SAGE Ltd. Science
- Editorial Board Member: International Journal of Applied Mechanics, Imperial College Press
- Editorial Board Member: Advances in Aircraft and Spacecraft Science, An International Journal. Techno Press
- Editorial Board Member: International Journal of Mechanics and Solids
- Editorial Board Member: Vibration, MDPI, Switzerland
- Editorial Board Member: Acoustics, MDPI, Switzerland
- Editorial Board Member: International Journal of Dynamics of Fluids
- Editorial Board Member: ACTA ACUSTICA SINICA
- Editorial Board Member: Chinese Journal of Acoustics
- Advisory Board Member: ASME Transactions: Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems

Prof. FU Ming Wang
- Editorial Board Member: International Journal of Plasticity, Elsevier
- Editorial Board Member: Materials & Design, Elsevier
- Editorial Board Member: International Journal of Damage Mechanics, SAGE
- Editorial Board Member: International Journal of Advanced Manufacturing Technology, Springer
- Editorial Board Member: Chinese Journal of Mechanical Engineering-English, Springer
- Editorial Board Member: Manufacturing Review, EDP Sciences
- Editorial Board Member: Advances in manufacturing, Springer
- Editorial Board member: Chinese Journal of Mechanical Engineering-Chinese, Springer
- Editorial Board member: International Journal of Lightweight Materials and Manufacture, Ke Ai
- Editorial Board member: International Journal of Computer Aided Engineering and Technology, Inderscience Publishers

Prof. LEUNG Woon Fong Wallace
- Editorial Board Member: Journal of Separation and Purification Technology, Elsevier

Prof. SU Zhongqing
- Editor-in-Chief: Ultrasonics, Elsevier

- Associate Editor: ASME Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, ASME
- Associate Editor: Physics Open, Elsevier
- Associate Editor: Structural Engineering and Mechanics: An International Journal, Techno-Press
- Associate Editor: Structural Health Monitoring: An International Journal, SAGE
- Associate Editor: Structural Monitoring and Maintenance: An International Journal, Techno-Press
- Editorial Board Member: Aerospace
- Editorial Board Member: Structural Engineering and Mechanics: An International Journal

Dr CHOY Yat Sze
- Editorial Board Member: Journal of Acoustics

Dr LEUNG Chi Kin Randolph
- Associate Editor in Chief: Journal of Technical Acoustics
- Editorial Board Member: Engineering Applications of Computational Fluid Mechanics
- Editorial Board Member: Advances and Applications in Fluid Mechanics

Dr David NAVARRO-ALARCON
- Associate Editor: Frontiers in Robotics and AI, Specialty Section on Soft Robotics

Dr WONG Wai On
- Associate Editor: The Hong Kong Institution of Engineers (HKIE) Transactions
- Editorial Board Member: The Scientific World Journal, Hindawi Publishing Corporation
- Editorial Board Member: ISRN Mechanical Engineering, Hindawi Publishing Corporation
- Editorial Board Member: The International Journal of Mechanical Systems Engineering, American V-King Scientific Publishing

Distinguished Lecture / Keynote Speech at International Conference / Symposium

Prof. CHENG Li
- "Vibro-acoustic modeling and integrated design", *14th National Conference on Vibration Theory and Application (NVTA 2021),* 22-25 October 2021, Tianjin, China.

- "Sound absorption based on micro-perforated panels and acoustic black hole principle", *50th International Congress and Exposition of Noise Control Engineering (INTER-NOISE 2021)*, 01 August 2021, Washington, United States.

Prof. FU Mingwang
- "Effect of heat treatment on microstructures and mechanical properties of SS316L by micro selective laser melting", *ASME 2021 16th International Manufacturing Science and Engineering Conference (MSEC 2021),* 21 June 2021, online.

Prof. SU Zhongqing
- "Structural integrity monitoring and enhancement using additively manufactured sensors", *2021 International Symposium on Structural Integrity (ISSI-2021)*, 8-11 October 2021, online.

- "Exploring 'breathing' crack-induced contact acoustic nonlinearity: analytical modeling, experimental validation, and quantitative evaluation of fatigue cracks", *The 10th Australasian Congress on Applied Mechanics (ACAM-10) & the 19th Australian International Aerospace Congress (AIAC-19))*, 29 November - 1 December 2021, online.

- "Nonlinear aspects of 3-D fatigue crack-perturbed elastic wavefields: analytical modelling, experimental validation & applications, *The 14th International Conference on Damage Assessment of Structures (DAMAS-2021),* 29 October - 1 November 2021, online.

Teaching & Learning

At ME Department, education is not only imparting knowledge and skills with excellent teaching quality but also nurturing all-round future leaders with creativity, global outlook and professional attributes by providing a holistic and fruitful learning experience. We take every effort to continuously improve teaching and learning performance to ensure the knowledge and skills students learnt in classrooms are up-to-date and applicable in real life.

Programmes Offered

The Department offers Doctorates, Master Degrees, and Bachelor Degrees. Students gain professionally recognized qualifications at different levels from the vibrant teaching and learning approach.

Undergraduate Programmes

Programme Title	Mode of Study
BEng(Hons) Scheme in Mechanical Engineering	Full-time (UGC funded)
BEng(Hons) in Mechanical Engineering	Full-time (UGC funded)
BEng(Hons) in Product Analysis and Engineering Design	Full-time (UGC funded)
BEng(Hons) in Mechanical Engineering	Part-time (Self-financed)

Postgraduate Programmes

Programme Title	Mode of Study
MSc in Mechanical Engineering Four specialisms: • MSc in Mechanical Engineering (Aeronautical Engineering) • MSc in Mechanical Engineering (Air/Noise Pollution Management) • MSc in Mechanical Engineering (Aviation) • MSc in Mechanical Engineering (Product Development and Analysis)	Mixed-mode (Self-financed)
Engineering Doctorate	Mixed-mode (Self-financed)

Student Enrollment

Programme	Year 1 Intake 2021/22	Total no. of Students 2021/22
Full-time BEng(Hons) Scheme in Mechanical Engineering	93	168
Full-time BEng(Hons) in Mechanical Engineering (including Double Degree students)	16	197
Full-time BEng(Hons) in Product Analysis and Engineering Design	10	37
Part-time BEng(Hons) in Mechanical Engineering	0	6
MSc/PgD in Mechanical Engineering	93	191
Part-time Engineering Doctorate	0	1
Total	212	600

Performance Indicators

Student Feedback Questionnaire (SFQ)

The student feedback questionnaires provide one of the major indicators to assess the effectiveness of teaching.

Items	ME Average	FENG Average
Subjects		
Clear understanding of what I am expected to learn	4.1	4.0
Teaching & learning activities helped me to achieve the subject learning outcomes	4.1	4.0
Assessments require demonstration of knowledge/ skills/ understanding of subject	4.2	4.1
Able to understand the criteria for grading	4.1	4.0
Staff		
Teaching was well-organized	4.2	4.1
Staff member was helpful	4.2	4.1
Useful and timely feedback	4.1	4.0
Encouraged students to ask questions/ discuss ideas	4.2	4.1
Encouraged students to learn independently	4.2	4.1
Overall view about the teaching of the staff member		
Provided me with a valuable learning experience	4.2	4.1
Overall, staff member is an effective teacher	4.2	4.1
Grand mean of item on Overall View	4.2	4.1

First Class Honours / Distinction

The following students in the Department of Mechanical Engineering were graduated with the first class honours/distinction in the 2021/2022 academic year.

Study Programme	BEng (Hons) in Mechanical Engineering
Student Name	DAI Yichen +
	HO Sung Lai Sidney +
	HU Yuntao +
	LO Tsz Yuen +
	YANG Zhuoxin +

+ First Class Honours

Study Programme	MSc in Mechanical Engineering
Student Name	CHAU Yi Wai *
	CHEN Ruikan *
	CHIM Siu Leung *
	CHU Chi Wai *
	KO Man Kit *
	LAU Tsz Hin *
	RAI Sanjaya *
	SHUM Ngai Keung *
	YU Kin Ching *

* Distinction

Dean's Honours List

The following students in the Department of Mechanical Engineering have satisfied the criteria (based on outstanding academic performance) for being included in the Dean's Honours List in the 2021/2022 academic year.

Recipient	
ANG Mehriell Eliana Siajuat	PASHA Jabed
CHEUNG Tsz Chun	QIU Liuming
CHEONG Kai Lun	SUM Check Shing
CHU Sheung Yam Ivan	WANG Dapeng
FERNANDO Devani Vidanalage Nivain Devnith	WEERASINGHE Kasuntha Gimshan
FUNG Ka Chun	YEUNG Lok Yau
HO Sung Lai Sidney	ZENG Bailin
KHAN Hamad	ZHANG Wen
KIM Jaeyoun	ZHANG Zhewei
KOON Chun Yu	ZHANG Ziqi
LO Tsz Yuen	ZHAO Zhen
PAL Ileana	

Prizes, Scholarships and Bursaries

Prizes and scholarships are honors, and serve to motivate and recognize the performance and contributions of students. Bursaries provide assistance to needy students so that they can concentrate on their studies.

Prize / Award	Recipient
HKSAR Government Scholarship Fund - Endeavour Merit Award	CHEUNG Hiu Ching
	HON Hoi Hung Kobe
	LAU Wai Tung
	TANG Hoi Tung
Outstanding Student Award 2021, Department of Mechanical Engineering	YANG Zhuoxin
Scholarship	**Recipient**
Chan Wing On Scholarship	HE Bingzhi
Chiang Chen Industrial Charity Foundation Scholarship	FU Sze Yin
CLP Scholarship in Mechanical Engineering	CHEONG Kai Lun
Department of Mechanical Engineering Scholarship for Hall Residents	ANG Mehriell Eliana Siajuat
	ZHANG Zhewei
Distinguished Athletes Scholarship	KWOK Hoi Yi
Dr. Y.K. Ching Memorial Scholarship	HU Jipeng
HAESL Scholarship	LO Tsz Yuen
HK Electric Scholarship	TANG Hoi Tung
HKCC Scholarship for PolyU Articulation	KWONG Kom Shue
HKSAR Government Scholarship	DAI Yichen
	HU Yuntao
	LEUNG Wing Kuen

Scholarship	Recipient
HKSAR Government Scholarship Fund - Reaching Out Award	BEISEMBAYEV Damyl
	WONG Ting Sen
Hong Kong Plastics Manufacturers Association Scholarship	CHENG Tsz Chun
Mitsubishi Electric (Hong Kong) Limited Scholarship	WONG Yu Shing
Outstanding Graduates Scholarship	CHAU Yi Wai
	CHEN Ruikan
	CHIM Siu Leung
	CHU Chi Wai
	KO Man Kit
	LAU Tsz Hin
	RAI Sanjaya
	SHUM Ngai Keung
	YU Kin Ching
PolyU Presidential PhD Scholarship (Cash Award)	CHEN Keyu
	FENG Yuchao
	GUO Xinze
	MA Weixin
	MENG Shiyu
	NASEEM Sufyan
	WU Yifei
REC Engineering Company Limited Scholarship	YEUNG Ka Wing
Targeted Scholarship Scheme - Belt & Road Scholarship (Other Countries)	FERNANDO Devani Vidanalage Nivain Devnith
	RASHEED Farrukh
	WEERASINGHE Kasuntha Gimshan
Targeted Scholarship Scheme - Belt & Road Scholarship (Research Postgraduate)	LABAZANOVA Luiza
Targeted Taught Postgraduate Programmes Fellowship	CHAN Chi Kan
	CHAN Yuen Yu
	CHENG Chung Kiu
	CHEUNG Ho Ming
	CHONG Hau Tung
	CHU Chi Wai
	CHU Kwok Hin Travis
	CHUI Tsz Ho
	CHUNG Hing Kit
	KWOK Chun Hin
	LAM Hang Yi
	LEE Cheuk Hin
	LEUNG Cheuk Man
	LEUNG Ka Shun
	LEUNG Wing Hong

Scholarship	Recipient
Targeted Taught Postgraduate Programmes Fellowship	LIU Tsun Ho
	LUI Hiu Lam
	LUI Wai Ki Alston
	LUI Wan Kit Maurice
	NG Shu San
	SHEK Chun Hung
	SIN Ching Yin Billy
	TAM Kit Yu
	TAM Shiu Hong Jeffrey
	TANG Sin Ying
	YAU Hoi Chi
	YEUNG Pak Piu
	YIP Chun Lam
	YU Chun Hei
The Hong Kong Jockey Club Scholarship	CHEUNG Hiu Ching
The Hong Kong Polytechnic University Entry Scholarship (Academic)	CHOWDHURY Mushfiqur Rahman
	KASSYMKHANOV Shyndaulet
	KHAN Hamad
	LEE Jun Hoe
	MALIK Muhammad Aayan
	MUZTABA Mushfique Tanzim
	ORPA Muntaha Noor
	PAL Ileana
	PASHA Jabed
	QAMAR Abdullah
	RASHID Sameer
	ZHANG Wen
The Hong Kong Polytechnic University Scholarship	YANG Zhuoxin
	ZHANG Zhewei
The Hong Kong Polytechnic University-APEC Entry Scholarship	ANG Mehriell Eliana Siajuat
	CHEONG Kai Lun
	DELA CRUZ Xavier Roi Mangulabnan
	KAWILARANG Darren Dean
	KWEON Tae Hyeon
	WONG Ting Sen
VTech Group of Companies Scholarship	HO Hoi Kwan
Wong Tit-shing Student Exchange Scholarship	BEISEMBAYEV Damyl
	WONG Ting Sen
	YAO Jichen
Bursary	
Delong Bursary	

Work-Integrated Education (WIE)

To echo with the University's Work-Integrated Education (WIE) programme, the Department has established a close partnership with both local and overseas industrial / educational partners to offer a wide variety of placement opportunities to students who are always encouraged to acquire real world working experience before graduation.

Local Placement

Organization
Aerovision Technology Limited
AI Mnemonic Ltd
Ampd Energy
Annecy Solution Limited
ATAL Engineering Limited
Bonbon Robotics Limited
Build King Construction Limited
Carbon Exchange (Hong Kong) Limited
Cheung Fung Engineering (Hong Kong) Company Limited
Chubb Hong Kong limited
Cornerstone Robotics Limited
Defond Electech Co.,Ltd
Drainage Services Department, HKSARG
Earth Products China Limited
Electrical and Mechanical Services Department, HKSARG
Environmental Protection Department, HKSARG
Everlight Engineering Company Ltd
Far East Engineering Services Ltd
FSE Engineering Group Limited
Gasilab Design Limited
GP Electronics (HK) Limited
GREEN TECH ENTERPRISE
GreenSafety Technology Limited
Gremod Co.
HENMAX GROUP LIMITED, HENMAX INTERIORS LIMITED
Hong Kong Disneyland Resort
Hong Kong Housing Society
Hong Kong Productivity Council
i3d printer (hk) limited
Industrial Design Associates International Limited (HK)

Organization
Innowises Technology (HK) Limited
Intrafor Hong Kong Limited
ITE Smartcard Solutions Limited
Ju Ching Chu Secondary School
K.M.Invention business tradinCo.
Keio Engineering Co., Ltd
Kingfisher Asia Ltd
King's Flair international (Holding) Limited
Lands Department, HKSARG
LVFAR Kin Fung Green Reusable Industry Limited
Main Power Hydraulics Machinery Company
Majestic Engineering Co. Ltd
MedEXO Robotics (Hong Kong) Company Limited
Million Tech Development Ltd.
Otis Elevator Company
PaperClip Design Limited
Paul Y. Engineering
REC Engineering Company Limited
RF Tech Limited
SAVE TIME ELECTRON ENGINEERING LIMITED
Sino Land Company Limited
Southa Ltd
Time Medical Limited
TTM Technologies, Inc.
UrbanChain Group Limited
VSL Hong Kong Limited
Welbot Technology Limited
WSP Global Inc.
Yau Lee Holdings Limited
Zoomob Limited

Offshore Placement

Organization	Country
Bosch Automotive Products (Changsha) Co. Ltd.	Mainland China
College of Aviation Technology	Bangladesh
Dalian Clean Energy Heavy Industrial Co., Ltd	Mainland China
DataMesh Technology Co. Ltd.	Mainland China
edison.ai	Japan
Industrial Design Consultancy (Shanghai) Co..Ltd	Mainland China
Jiahui Electronics (Shenzhen) Co., Ltd	Mainland China
KEDA AUTOMATION CONTROL	Mainland China
Nithin Techno Care	India
Russia New University	Russia
Spark Light Ltd.	Taiwan
SungKwang Engineering	South Korea
The University of Jordan	Jordan
伟视得电子贸易（上海）有限公司	Mainland China
佛山市巧鸾科技有限公司	Mainland China
北京中航智科技有限公司	Mainland China

International Association for the Exchange of Students for Technical Experience (IAESTE)

To nurture students to become all-round global citizens, apart from WIE activities locally, students are also encouraged to take up internships in other parts of the world, while the Department welcomes students from overseas institutions to stay and work in the Department.

Inbound

Student Name	Institution	Country
Md Mozakker Hosen Shojib	College of Aviation Technology	Bangladesh
Nandini Dixit	Manipal Institute of Technology	India
Akramsadat Sajadi	University of Tehran	Iran
Bilal Rinchi	The University of Jordan	Jordan

Outbound

Student Name	Institution	Country
Devani Vidanalage Nivain Devnith Fernando	College of Aviation Technology	Bangladesh
TJAN Ling Hei	Manipal University Jaipur	India
JI Mingyoung	Iran University of Science and Technology (IUST)	Iran
Kasuntha Gimshan Weerasinghe	The University of Jordan	Jordan

Cooperative Education (Co-op)

The Cooperative Education (co-op) is specially provided to help nurture BEng(Hons) in Product Analysis and Engineering Design Programme (PAED) students on mastering the PAED knowledge through real-world experiential learning in professional setting. The Co-op is facilitated through combining Summer Intern with PAED Capstone Project. A Co-op student is expected to be engaged in a remunerated full-time position and contribute as a training/entry-level professional to design engineering and innovation projects at a Co-op industrial partner's establishment.

The percentage of successful pairing-up of PAED Co-op students and industrial partners was 82% in this year. Both the students and Co-op industrial partners could leverage well the resources at campus and partners' premises for supporting the Co-op students' learning.

Co-op Industrial Partners 2021

Organization
Aerovision Technology Limited
GP Electronics (HK) Limited
Hong Kong Productivity Council
King's Flair Development Limited
Paperclip Design Limited
Time Medical Limited
Raymond Industrial Ltd.

Student Exchange Programme

With strong commitment to cultivate global outlook, the Department offers student exchange opportunities to enhance students'cultural knowledge, languages skills and personal development. Every year, the Department arranges students to go on exchanges while outstanding students from the mainland and overseas are also recruited to its academic programmes.

Inbound

Student Name	Institution	Country
BARTHOLOME Gael Renaud	Institut Polytechnique Des Sciences Avancees	France
BIN MOHAMED NOOR Mirza	National University of Singapore	Singapore
CHEOK Benedict Wei En	National University of Singapore	Singapore
DHELEMME Franck Nikola	Institut Polytechnique des Sciences Avancees	France
FORDE MORRIN Dearbhla Ellen	Dublin Institute of Technology	Ireland
GRANGE Quentin Alain Marie Anne	Institut National Des Sciences Appliquees De Lyon	France
LAPORTE Cedric	Institut Polytechnique des Sciences Avancées	France
MARTIN Nathan Joseph	Dublin Institute of Technology	Ireland
MEAGHER Emer Mairead	Dublin Institute of Technology	Ireland
MONIN Chiara Paule Christiane Denise	Institut Polytechnique des Sciences Avancees	France
SIMONI Emir Amir	University of Twente	Netherlands
WANG Ruicheng	Tongji University	China
XU Shi	GE3: Drexel University	United States

Outbound

Student Name	Institution	Country
BEISEMBAYEV Damyl	University of Pittsburgh	United States
CHAN Ho Bong	Institut Polytechnique des Sciences Avancées	France
HE Zhengyang	Fudan University	China
LIANG Wendi	Fudan University	China
TAM Ching Lam	Hochschule Konstanz University of Applied Sciences	Germany
WONG Ting Sen	Cardiff University	United Kingdom
YAO Jichen	Technical University of Munich	Germany

Student Achievements

To maintain the competitiveness of students, the Department has been encouraging its students to actively participate in a wide range of local and international activities and competitions in order to showcase their talents and creativity as well as to build up their skills and confidence. In the reporting year, ME students shined in many international and national competitions and awards. Their accomplishments offer concrete proof that the Department has succeeded in nurturing students who not only excel in academic areas, but also demonstrate great leadership and problem-solving skills.

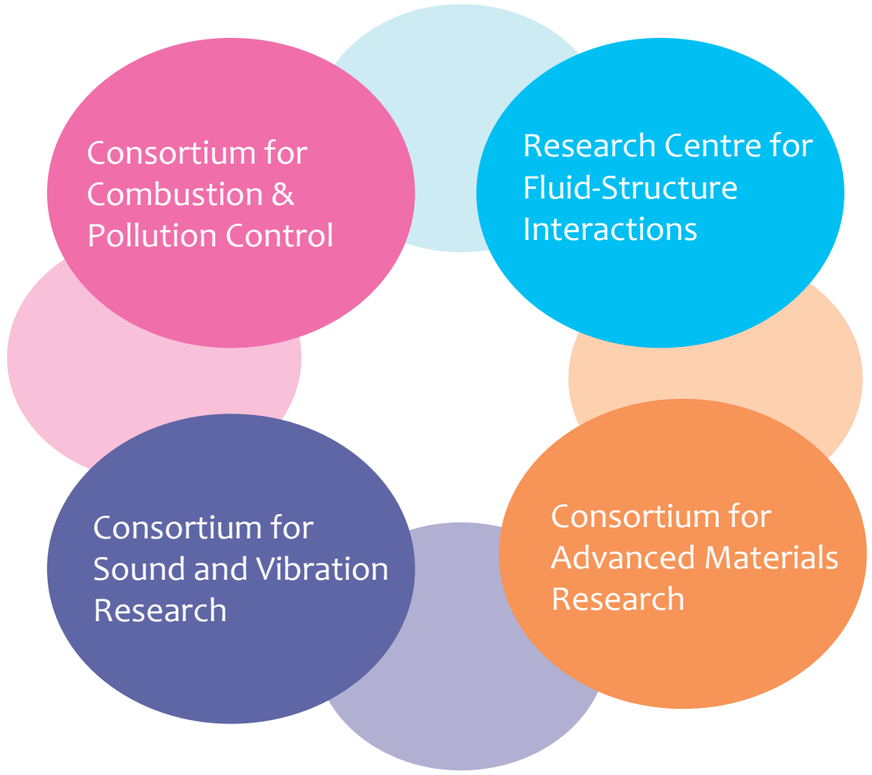
Competition	Organizer	Award
Young Professionals Exhibition and Competition	The Institution of Engineering and Technology Hong Kong	2nd Runner Up (Postgraduate Section)
Chinese National Engineering Research Centre for Steel Construction (CNERC) Annual Technical Symposium 2021	Chinese National Engineering Research Centre	Young Researcher Award 2021
		Young Researcher Merit Award 2021
13th Asian Workshop on Micro/Nano Forming Technology (2021) and 3rd Asian Pacific Symposium on Technology of Plasticity (AWMFT & APSTP 2021)	Shanghai Jiao Tong University, Harbin Institute of Technology, and The Hong Kong Polytechnic University	Best Paper Award
Three Minute Thesis Competition (3MT®)	Faculty of Engineering, The Hong Kong Polytechnic University	Champion & People's Choice
		1st Runner-up
PolyU Student Entrepreneurial Proof-of-concept (POC) Funding Scheme	The Hong Kong Polytechnic University	Dr Winnie S M Tang-PolyU Student Innovation & Entrepreneurship Scholarship

Research & Consultancy

The Department continues to push the frontiers of knowledge and applications in the discipline of Mechanical Engineering. With the spirit of driving innovation for a better future, members of the Department are playing an significant role in making high-impact contributions to the profession by engaging in fundamental and applied research development; high level consultancies for local and international organizations; and provision of knowledge and technologies to the industry.

Research Centre/ Consortiums

With different objectives and targets, the Department aims at all-rounded research efforts that could provide possible solutions towards a better living for the human race. In order to establish better synergy in research, four research centre and consortiums where a critical mass of experts is available in each have been identified.



Research Centre for Fluid-Structure Interactions

Research Group

Director: Dr Tang Hui
Deputy Director: Dr Zhu Jie
Members: Dr LEUNG Chi Kin Randolph
Dr Liu Tuo
Dr Liu Yang
Dr Ma Yuan
Dr Ruan Haihui
Dr Wang Chenglei
Dr Yao Haimin

Mission

The Research Centre focuses on biomedical applications, turbulent flows, biofluids, flow-induced vibration, and their control in relation to wings, wind turbines, buildings, cable-stayed bridges, moving vehicles, biomedical engineering, power equipment, heat-exchangers, micro and nano-scale structures, household appliances and products with innovation and technology values. Our research in fluid-structure interaction is world-class and our experimental/ computational facilities are at the scientific frontier.

Research Projects

During the course of last year, FSI has been maintaining its tradition and carrying out in-depth fundamental research and seeking high-end engineering applications. The success of the Research Centre was reflected by the award of prestigious research grants, with a total amount of more than HK$8 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Dr TANG Hui	Active flow control through deep reinforcement learning	General Research Fund
	Control of Flow-induced Vibration of a Mooring Cylinder with Bio-inspired Surface	Joint Postdoc Scheme with Non-local Institutions
Dr LIU Tuo	非厄密声学环形腔体及其应用研究	青年科学基金项目
Dr MA Yuan	Hybrid Surface haptics: Towards Effective Virtual Features Rendering	Departmental General Research Fund
	Developing Advanced Human-Machine Mechanical Interface	Start-up Fund for New Recruits
Dr RUAN Haihui	伯恩光學 - 香港理工大學玻璃研究聯合實驗室	Biel Crystal (HK) Manufactory Limited (Collaborative)
Dr WANG Chenglei	基于合成射流的柔性扑翼自主推进性能提升方法与机理研究	青年基金项目

Research Output

In 2021/22, FSI members also worked out a lot of profound research outputs including 2 patents, 2 authored books/book chapters, 40 journal papers and 4 conference proceedings.

Principal Investigator	Patent
Dr YAO Haimin	一种激光诱导多尺度微通道自组装成型加工方法 , Apr 19, 2022
Dr YAO Haimin	一种测量热导率的方法及设备 , Jul 16, 2021

Books/Book Chapters
Leung, RCK (ed.), Ciappi, E, De Rosa, S, Hambric, SA, Clair, V, Maxit, L & Totaro, N 2021, 'Flinovia -- Flow Induced Noise and Vibration Issues and Aspects III', Springer International Publishing AG, Switzerland.
Yin, Q & Yao, H 2021, 'Computational study on the effects of mechanical constraint on the performance of silicon nanosheets as anode materials for lithium-ion batteries', in Silicon Anode Systems for Lithium-Ion Batteries. Elsevier, pp. 95-118.

Consortium for Advanced Materials Research

Research Group

Director: Prof. MW Fu
Deputy Director: Dr Zheng Guangping
Members: Prof. Chen Guohua
Prof. Shi Sanqiang
Dr Jiao Zengbao
Dr Liu Qiang
Dr Ma Yuan
Dr Ruan Haihui
Dr Yao Haimin
Dr Yu Xiaoliang
Dr Zhang Xiao

Mission

The research endeavors and activities of the consortium are mainly focused on the areas of advanced materials science and engineering covering nanomaterials & technologies, materials design & simulation, surface & interface technologies, structure-property relationships, and materials and structures covering biomedical, functional, energy-related, composite and smart materials arenas. In addition, advanced materials processing and product design and analysis are also our research interests.

Research Projects

During the course of last year, CAMR has been maintaining its tradition and carrying out in-depth fundamental research and seeking high-end engineering applications. The success of the Consortium was reflected by the award of prestigious research grants, with a total amount of more than HK$17 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Prof. FU Mingwang	"Size effect based deformation and fatigue behaviors and performance enhancement of the lattice structures developed by SLM"	General Research Fund
	"Ultrafast Coining of Titanium Alloy Micro-Structured Surfaces Employing Skin Effect and Electroplasticity"	Joint Postdoc Scheme with Non-local Institutions
	Simulation of wire arc additive manufacturing (WAAM)	Wuhan Yini Technology Co., Ltd (Collaborative)
Dr JIAO Zengbao	基于纳米片层和形变孪晶协同强化的新型高熵合金的组织调控和强韧化机理	面上项目
	基于富铜纳米团簇调控的超高强钢抗氢脆机理的原子尺度研究	深圳市基础研究 (面上项目)
	Atomic-scale interface structure and plastic deformation mechanisms of ultrastrong and ductile high-entropy alloys with coherent nano-lamellar structures	General Research Fund
	Designing self-healing high-entropy alloys for advanced nuclear applications	RGC Collaborative Research Fund (CRF)
	Competing deformation mechanisms of complex alloys at thermomechanical extremes	RGC Collaborative Research Fund (CRF)
Dr LIU Qiang	Postdoc Matching Fund Scheme - Dongmei LIN	Postdoc Matching Fund Scheme
Dr MA Yuan	Hybrid Surface haptics: Towards Effective Virtual Features Rendering	Departmental General Research Fund
	Developing Advanced Human-Machine Mechanical Interface	Start-up Fund for New Recruits
Dr RUAN Haihui	伯恩光學 - 香港理工大學玻璃研究聯合實驗室	Biel Crystal (HK) Manufactory Limited (Collaborative)
Dr ZHANG Xiao	Solid electrolyte reactor for electrochemical CO2 capture and concentration from flue gas	Departmental General Research Fund
	Electrochemical oxygen reduction to hydrogen peroxide at practical rates in strong acid	Strategic Hiring Scheme
Dr ZHENG Guangping	"A safe, efficient and facile approach for hydrogen storage and generation: catalytic hydrolysis of solid-state hydrogen storage materials"	Green Tech Fund

Research Output

In 2021/22, CAMR members also worked out a lot of profound research outputs including 2 patents, 3 authored books/book chapters, 67 journal papers.

Consortium for Combustion and Pollution Control

Research Group

Director: Prof. Chan Tat Leung
Deputy Director: Dr An Liang
Members: Prof. Chen Guohua
Prof. Leung Woon Fong Wallace
Dr Cheng Song
Dr Li Mengying
Dr Ma Yuan
Dr Wu Maochun
Dr Zhang Peng

Mission

The Consortium is established to create and develop a critical mass in the fundamental and applied studies in combustion and combustion-related air pollution problems and their control. We are one of the leading research groups in the areas of clean combustion and energy, alternative fuels, internal combustion engine performance and emissions, electrochemical technologies for energy and environmental applications, and nanofiber technologies in energy, environment, and health applications.

Research Projects

During the course of last year, CCPC has been maintaining its tradition and carrying out in-depth fundamental research and seeking high-end engineering applications. The success of the Consortium was reflected by the award of prestigious research grants, with a total amount of more than HK$8 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Dr AN Liang	新型流式反应器设计与构筑及其电化学合成氨应用研究	深圳市基础研究 (面上项目)
	Construction of Bismuth-based Nano/Micro-structures and their Applications in Photoelectrochemical Cells for Solar-driven Ambient Ammonia Production	NSFC/RGC Joint Research Scheme
	Postdoc Matching Fund Scheme - Fatang LIU	Postdoc Matching Fund Scheme
	Postdoc Matching Fund Scheme - Linyang WEI	Postdoc Matching Fund Scheme
Dr CHENG Song	Optimization of acetaldehyde chemical kinetic model via high-dimensional model representation and machine learning	Start-up Fund for New Recruits
Dr LI Mengying	自动化光伏盐田技术的联合研发	技术服务项目
Dr MA Yuan	Hybrid Surface haptics: Towards Effective Virtual Features Rendering	Departmental General Research Fund
	Developing Advanced Human-Machine Mechanical Interface	Start-up Fund for New Recruits
Dr WU Maochun	Understanding the role of heat and mass transfer for achieving dendrite-free zinc-based flow batteries	General Research Fund
	Postdoc Matching Fund Scheme - Zeyu XU	Postdoc Matching Fund Scheme
	Development of Safe and Energy-dense All-solid-state Lithium Batteries	RGC Research Impact Fund (PolyU as Co-PI/Collaborator)
	Understanding the role of heat and mass transfer for achieving dendrite-free zinc-based flow batteries (internal project)	Strategic Hiring Scheme - Assistant Professor to Professor
Dr ZHANG Peng	拉格朗日 - 欧拉框架下喷雾模拟中的液滴碰撞理论和模型研究	面上项目

Research Output

In 2021/22, CCPC members also worked out a lot of profound research outputs including including 3 patents and 30 journal papers.

Principal Investigator	Patent
Prof. Leung Woon Fong Wallace	Nanofiber surfaces, US 11,224,860 B2, Jan 18, 2022
Prof. Leung Woon Fong Wallace	Crystal control and stability for high-performance perovskite solar cell, US patent 11,217,751 B2, Jan 4, 2022
Prof. Leung Woon Fong Wallace	Electrostatically-charged Nanofiber Media and Fabrication Method Thereof, US patent 11148085 B2, Oct 19, 2021

Consortium for Sound and Vibration Research

Research Group

Director: Prof. CHENG Li
Deputy Director: Dr LEUNG Chi Kin Randolph
Members: Prof. SU Zhongqing
Dr CHOY Yat Sze
Dr CHU Kar Hang
Dr JING Xingjian
Dr MA Yuan
Dr SUN Yuxiang
Dr WONG Wai On
Dr ZHU Jie

Mission

Since its establishment, the Consortium for Sound and Vibration Research (CSVR) defined its mission to carry out high-quality research and development to meet the societal needs of the society, by fostering close collaborations and building up synergy in sound and vibration research through a research network with overseas research institutions, public service corporations, local industry and governmental departments.

Research Projects

During the course of last year, CSVR has been maintaining its tradition and carrying out in-depth fundamental research and seeking high-end engineering applications. The success of the Consortium was reflected by the award of prestigious research grants, with a total amount of more than HK$4 million.

Principal Investigator	Project Title	Funding Scheme/ Source	Awarded Funding (HK$)
Prof. CHENG Li	"Nonlinear Guided Wave Manipulation through Topologically Customized Meta-devices for Structural Health Monitoring Applications"	General Research Fund	HK$825,601.00
Dr CHOY Yat Sze	Modelling and design of compact metamaterial absorbers for aeroacoustic noise suppression	General Research Fund	HK$558,743.00
Dr CHU Kar Hang	Design of a parallel continuum robot with vision sensors for force-related task execution	General Research Fund	HK$825,601.00
	基於 RGB 與熱成像自適應融合的自動駕駛複雜日夜環境語義感知研究	Innovation and Technology Fund - Innovation and Technology Support Programme (ITF-ITSP)	HK$899,300.00
Dr MA Yuan	Hybrid Surface haptics: Towards Effective Virtual Features Rendering	Departmental General Research Fund	HK$154,610.00
	Developing Advanced Human-Machine Mechanical Interface	Start-up Fund for New Recruits	HK$250,000.00
Dr SUN Yuxiang	基于场景理解的可解释自动驾驶端到端决策技术研究	之江实验室开放课题	HK$550,000.00

Research Output

In 2021/22, CSVR members also worked out a lot of profound research outputs including 2 authored books/ book chapters, 70 journal papers and 11 conference proceedings.

Books/Book Chapters
Leung, RCK (ed.), Ciappi, E, De Rosa, S, Hambric, SA, Clair, V, Maxit, L & Totaro, N 2021, 'Flinovia -- Flow Induced Noise and Vibration Issues and Aspects III', Springer International Publishing AG, Switzerland.
Akbar, MA & Wong, WO 2021, 'A Pendulum Type Particle Impact Damper', in X Jing, H Ding & J Wang (eds), Advances in Applied Nonlinear Dynamics, Vibration and Control -2021. ICANDVC 2021. Lecture Notes in Electrical Engineering, vol 799. vol. 799, Springer Singapore, pp. 739 - 750.

On-going Research Projects

The Department has been very successful in recent years in winning research grant income from major sources including industry and the Government.

Externally funded projects

Project Title : Creation of Rechargeable Electron-fuels for Stationary Power Supplies and Electric Vehicles (ME)
Investigators : L An and MH Shao (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding : RGC Theme-based Projects
Amount Sponsored : HKD 1,707,053.00

Project Title : Understanding charge transport phenomena in photoelectrochemical storage cells for solar energy storage
Investigators : L An and H Tang
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : Mass and Charge Transport Through the Porous Photoanode in Photocatalytic Fuel Cells for Simultaneous Wastewater Treatment and Electricity Generation
Investigators : L An
Source of Funding : RGC Early Career Scheme
Amount Sponsored : HKD 820,000.00

Project Title : 新型流式反应器设计与构筑及其电化学合成氨应用研究
Investigators : L An, 潘哲飞 (Non-PolyU Researcher) and 刘云 (Non-PolyU Researcher)
Source of Funding : 2022 年深圳市基础研究（面上项目）
Amount Sponsored : HKD 400,000.00

Project Title : Development of a Novel Operator Splitting Framework for Solving Population Balance Equation on Aerosol Dynamics
Investigators : TL Chan and K Zhou (Wuhan University of Science and Technology (China))
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 579,126.00

Project Title : Preparation of High Performance Cathodes for Li-S Batteries and Their Property and Mechanism Study: Enhancement of Electron and Lithium Ion Transmission and Anchoring of Polysulfides
Investigators : GH Chen and YF Deng (School of Chemistry and Chemical Engineering, South China University of Technology (China))
Source of Funding : NSFC/RGC Joint Research Scheme
Amount Sponsored : HKD 1,124,880.00

Project Title : 高性能锂硫电池体系与关键材料研究
Investigators : GH Chen, YA Zhu, F Zhang, XY Qin, Y Liu and Q Liu
Source of Funding : 深圳市科技計劃 - 深港創新圈
Amount Sponsored : HKD 3,341,400.00

Project Title : Conformal coating of elastomeric conducting polymer with ionic conductivity on Ni-rich layered cathodes for enhanced redox cycle stability of lithium-ion batteries
Investigators : GH Chen
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 579,522.00

Project Title : Investigation and Preparation of Long Cycle Life and Intrinsic Safe Lithium-Sulfur Batteries
Investigators : GH Chen, YA Zhu, XY Qin, JC Liu (EVE Energy Co., Ltd. (China / Guangdong)), YH Deng (Southern University of Science and Technology (China / Guangdong)), JL Wang (Shanghai Jiao Tong University (China / Shanghai)), XQ Dai (Guangdong Yiding New Energy Automotive Co., Ltd. (China / Guangdong)), JA Chen (Dalian Institute of Chemical Physics (China / Liaoning))
Source of Funding : Guangdong Key Areas Research and Development Scheme 2018/19 - "New energy Automotive" Major Special Project
Amount Sponsored : HKD 3,888,889.00

Project Title : 粤港澳光热电能源材料与器件联合实验室
Investigators : GH Chen, G Li, ZJ Zheng (ABCT), F Yan (AP), WY Wong (ABCT), JH Hao (AP), JA Dai (AP), YS Zhao (South China University of Technology (China / Guangdong)), 郭姿珠 (深圳市比亞迪鋰電池有限公司 (China / Guangdong)) and 裘小明 (深圳市瑞豐光電子股份有限公司 (China / Guangdong))
Source of Funding : 粤港澳聯合實驗室
Amount Sponsored : HKD 1,081,400.00

Project Title : A Paradigm-shifting, Fully-integrated, Compact Wastewater-to-resource Facility
Investigators : GH Chen and GH Chen (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding : RGC Theme-based Projects
Amount Sponsored : HKD 402,840.00

Project Title : Vibroacoustics of Structures with Space-Dependent Structural Inhomogeneity: Modelling and Physical Exploration
Investigators : L Cheng
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 488,345.00

Project Title : Thermo-Acoustic Oscillations: Mechanism Exploration and Control Based on Delay Differential Equation Theories Under a Fully-coupled Modelling Framework
Investigators : L Cheng
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : A Hierarchical Diagnosis Strategy and Integrity Monitoring Technique for Space Structures and Systems
Investigators : L Cheng, ZQ Su, XJ Jing and YS Choy
Source of Funding : Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (Collaborative)
Amount Sponsored : HKD 4,843,430.03

Project Title : 基于声学黑洞效应（ABH）的波操纵及其工程应用中的力学问题研究
Investigators : L Cheng, 黄薇 (南京航空航天大学), 马丽 (Non-PolyU Researcher), 韩雷 (南京航空航天大学), 闫再友 (南京航空航天大学), 裘进浩 (南京航空航天大学), 胡中雨 (Non-PolyU Researcher), 温福祯 (Non-PolyU Researcher), 杨程 (香港理工大学深圳研究院), 张林立 (Non-PolyU Researcher)
Source of Funding : NSFC State Key Programme 國家自然科學基金委員會重點項目
Amount Sponsored : HKD 233,000.00 + RMB 10,000,000.00

Project Title : 剪切波典型与非典型非线性特性研究：从物理本质到材料评估
Investigators : L Cheng, WO Wong, SB Shan, 马丽 (Non-PolyU Researcher), 温福祯 (Non-PolyU Researcher), 张林立 (Non-PolyU Researcher), 张晓奇 (Non-PolyU Researcher), 张圆满 (Non-PolyU Researcher), 宋阳 , 孙祥 (Non-PolyU Researcher)
Source of Funding : NSFC Joint Research Project 國家自然科學基金委員會合作研究項目
Amount Sponsored : RMB 1,400,000.00

Project Title : 基于非线性超声导波的材料早期疲劳评估方法研究
Investigators : L Cheng, 裘进浩 (南京航空航天大学), 温福祯 (Non-PolyU Researcher), 张超 (南京航空航天大学) and 单胜博 (Non-PolyU Researcher)
Source of Funding : 國家重點實驗室開放基金
Amount Sponsored : RMB 200,000.00

Project Title : Enhanced Acoustic Black Hole Effects through Intentional Mechanical/Electromechanical Coupling and Nonlinearities
Investigators : L Cheng and G Kerschen (University of Liège)
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 883,995.00

Project Title : Tunable Sonic Perception Control Headset
Investigators : YS Choy, MH Siu (RS), PK Lun (EIE), KH Chu, L Cheng, CH Chan (RS) and WY Mung (Innovation Technology Company Limited (Hong Kong))
Source of Funding : Innovation and Technology Fund - University-Industry Collaboration Programme - Matching Grant for Joint Research (ITF-UICP-MGJR)
Amount Sponsored : HKD 6,240,375.00

Project Title : 不全冶金结合粉末原始边界的再结晶面棱隅形核的竞争机制研究
Investigators : MW Fu, 宁永权 (西北工业大学), 郑钧元 , 谢炳超 (Non-PolyU Researcher), 盛涛 (Non-PolyU Researcher), 熊昱航 (Non-PolyU Researcher), 杨昊澎 (香港理工大学深圳研究院), 李誉之 (Non-PolyU Researcher), 姚泽坤 (Non-PolyU Researcher) and 周聪 (Non-PolyU Researcher)
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 18,424.00 + RMB 162,000.00

Project Title : 跨尺度构件形性协同塑性成形理论及技术基础研究
Investigators : MW Fu, SQ Shi, 马俊 (西北工业大学), 郑钧元 , 邵恒 (上海交通大学), 邱殿凯 (上海交通大学), 杨昊澎 (香港理工大学深圳研究院), 来新民 (上海交通大学), 李文婷 (香港理工大学深圳研究院) and 李恒 (西北工业大学)
Source of Funding : NSFC State Key Programme 國家自然科學基金委員會重點項目
Amount Sponsored : RMB 3,000,000.00

Project Title : Size effect affected anisotropy and asymmetry in multi-scaled deformation of metallic materials
Investigators : MW Fu
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 883,995.00

Project Title : 共格 / 非共格纳米相复合强化钢的析出机理和强化机制
Investigators : ZB Jiao, 邱实 , 范磊 , 肖知华 (香港理工大学深圳研究院), 王亚峰 (Non-PolyU Researcher), 杨涛 (香港城市大学), 周冰晨 (香港理工大学), 刘卫红 (哈尔滨工业大学（深圳）) and 丁志义 (Non-PolyU Researcher)
Source of Funding : NSFC for Young Scholar 國家自然科學基金委員會青年科學基金項目
Amount Sponsored : RMB 240,000.00

Project Title : Development and Application of TiC Reinforced Steel Matrix Composites Fabricated by in Situ Solidification
Investigators : ZB Jiao, L Fan, BC Zhou, YF Lin (Guangdong Institute of Materials and Processing (China / Guangdong)), CJ Hu (Guangzhou Lei Meng Machinery Equipment Co Ltd (China / Guangdong)), KH Zheng (Guangdong Institute of Materials and Processing (China / Guangdong)), ZC Luo (Guangdong Institute of Materials and Processing (China / Guangdong)), JX Lin (Guangdong Institute of Materials and Processing (China / Guangdong)) and DK Li (Guangdong Institute of Materials and Processing (China / Guangdong))
Source of Funding : Guangzhou International Science and Technology Cooperation Project 广州市对外科技合作

计划对外研发合作专题项目
Amount Sponsored : HKD 681,360.00

Project Title : Phase stability and deformation mechanisms of nanocrystalline fcc medium- and high-entropy alloys at low and intermediate temperatures
Investigators : ZB Jiao
Source of Funding : RGC Early Career Scheme
Amount Sponsored : HKD 353,034.00

Project Title : 基于纳米片层和形变孪晶协同强化的新型高熵合金的组织调控和强韧化机理
Investigators : ZB Jiao, 陈博涵 (Non-PolyU Researcher), 郭嘉鸣 , 邱实 , 范磊 , 牛梦超 , 方洁怡晨 , 周冰晨 and 倪冰雨
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 580,000.00

Project Title : 基于富铜纳米团簇调控的超高强钢抗氢脆机理的原子尺度研究
Investigators : ZB Jiao, 陈博涵 (Non-PolyU Researcher), 郭嘉鸣 , 邱实 , 许鹏宇 , 王恺忱 , 牛梦超 , 方洁怡晨 , 张熙正 and 周冰晨
Source of Funding : 2022 年深圳市基础研究（面上项目）
Amount Sponsored : HKD 590,000.00

Project Title : Modelling, Analysis & Design of Novel X-shaped Structures for Beneficial Nonlinear Stiffness and Damping Characteristics
Investigators : XJ Jing, R Allen (The University of Southampton (United Kingdom)) and R Vaidyanathan (Imperial College (United Kingdom))
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 488,345.00

Project Title : Development of a Smart Localization Technique of Thermal Source
Investigators : XJ Jing
Source of Funding : Guangzhou Purple River Technology Limited (Collaborative)
Amount Sponsored : HKD 287,435.00

Project Title : New Generation green and healthy Jackhammers with Integrated Bio-Inspired Anti-Vibration Handles
Investigators : XJ Jing, YS Choy and D Xie
Source of Funding : Construction Industry Council (CIC) Research and Technology Development Fund
Amount Sponsored : HKD 908,500.00

Project Title : New Generation Vehicle Seats: Addressing Comfort and Health Issues
Investigators : XJ Jing, YS Choy and D Xie
Source of Funding : Innovation and Technology Fund - Automative Platforms and Application Systems R&D Centre (ITF-APAS)
Amount Sponsored : HKD 3,606,980.00

Project Title : Novel Wave Functional Materials for Manipulating Light and Sound (ME)
Investigators : RCK Leung
Source of Funding : AoE Collaborated Project
Amount Sponsored : HKD 345,000.00

Project Title : Computational Science and Engineering for Product Innovation and Aeronautical System Design
Investigators : RCK Leung
Source of Funding : Charities & Foundation (Philip K. H. Wong Foundation)
Amount Sponsored : HKD 1,000,000.00

Project Title : High-Efficiency, Titanium-Graphene Composite Nanofiber Photocatalyst Integrated Into Flexible Surfaces or Wearables For Improving Air Purification
Investigators : WWF Leung
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 640,200.00

Project Title : 自动化光伏盐田技术的联合研发
Investigators : MY Li
Source of Funding : 技术服务项目
Amount Sponsored : RMB 200,000.00

Project Title : Developing a Continuous Oxidative Chemical Vapor Deposition (oCVD) Process for Conformal Conductive Polymer Coating on Advanced Lithium-ion Batteries Electrode Materials: Aiming at Scaling up
Investigators : Q Liu, GH Chen and B Zhang (AP)
Source of Funding : Charities & Foundation (Projects of RISE)
Amount Sponsored : HKD 500,000.00

Project Title : Fourier-Based Shape Control of Soft Objects with Multiple Active Manipulation Points and Online Model Estimation
Investigators : D Navarro Alarcon
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 640,200.00

Project Title : Human-to-Robot Skill Transfer for Soft Manipulation in Unstructured Human Environments
Investigators : D Navarro Alarcon and A Cherubini (University of Montpellier (France))
Source of Funding : RGC Joint Research Scheme
Amount Sponsored : HKD 86,400.00

Project Title : Experimental Study on Robotic Skin Rejuvenation with Thermal Monitoring
Investigators : D Navarro Alarcon and M Muddassir
Source of Funding : Rods Technology Company Limited (Collaborative)
Amount Sponsored : HKD 46,000.00

Project Title : Enhancing Human-Robot Interactions Through Thermal Point Clouds
Investigators : D Navarro Alarcon, LY Hu, TH Zhang (FENG) and L Li (Institute of Advanced Manufacturing Technology (IAMT), China (China / Jiangsu))
Source of Funding : Jiangsu Industrial Technology Research Institute (JITRI) Collaborative Research Program Scheme
Amount Sponsored : HKD 779,030.00

Project Title : Towards low-cost thermal imaging based on chalcogenide glasses: exploiting non-linear viscoelasticity in precision lens molding
Investigators : HH Ruan and TF Zhou (Beijing Institute of Technology (China / Beijing))
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 892,398.00

Project Title : Synthesis of High Entropy Magnetic Nanoparticles (MNP) and MNP-Embedded Microswimmers for Targeted Heating in Biological Ducts
Investigators : HH Ruan, AP Zhang (EE) and XJ Liu (University of Science and Technology Beijing (China / Beijing))
Source of Funding : NSFC/RGC Joint Research Scheme
Amount Sponsored : HKD 1,110,210.00

Project Title : Investigation of the Evolution Kinetics of Porous Metals During Dealloying by Phase-field Method
Investigators : SQ Shi
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 640,200.00

Project Title : Size- and temperature-dependent phase transition in NASICON-type material on Li+- and Na+-(de)intercalation
Investigators : SQ Shi and LM Zhou
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : 核燃料内部气泡演化行为的相场研究
Investigators : SQ Shi, BL Huang, 肖知华 (香港理工大学深圳研究院), 王亚峰 (Non-PolyU Researcher), 熊杰 (Non-PolyU Researcher), 林晨 (Non-PolyU Researcher), 李玉兰 (美国太平洋西北国家实验室), 朱家明 (Non-PolyU Researcher), 叶小羽 (香港理工大学深圳研究院) and 匡友弟 (暨南大学)
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 147,027.00 + RMB 620,000.00

Project Title : A New Research Framework for Quantitative Characterization of Disorderedly Clustered Pitting-type Damage in Engineering Structures: A Bottleneck Breakthrough of Guided-wave-based Detection for Multitudinous Damage
Investigators : ZQ Su
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 488,345.00

Project Title : Airworthiness Compliance Analysis and Verification Study on Structural Health Monitoring System
Investigators : ZQ Su, FX Zou (AAE) and LM Zhou (Southern University of Science and Technology (China / Guangdong))
Source of Funding : Beijing Aeronautical Science and Technology Research Institute of COMAC (Collaborative)
Amount Sponsored : HKD 2,970,000.00

Project Title : Airworthiness Compliance Analysis and Verification of Structural Health Monitoring Technique (Child Project 1)
Investigators : ZQ Su, FX Zou (AAE) and LM Zhou
Source of Funding : Beijing Aeronautical Science and Technology Research Institute of COMAC (Collaborative)
Amount Sponsored : HKD 413,000.00

Project Title : 航空时变服役条件下复杂结构的损伤波动诊断
Investigators : ZQ Su, 鲍峤 (南京航空航天大学), 高俊启 (南京航空航天大学), 陈仁文 (南京航空航天大学), 许磊 , 袁慎芳 (南京航空航天大学), 蔡建 (南京航空航天大学), 苏义印 , 王凯 (香港理工大学深圳研究院) and 梅寒飞 (南京航空航天大学)
Source of Funding : NSFC State Key Programme 國家自然科學基金委員會重點項目
Amount Sponsored : HKD 225,283.00 + RMB 950,000.00

Project Title : 基于 " 准 - 弥散 " 喷涂传感网络及超声非线性的疲劳损伤原位定量监测
Investigators : ZQ Su, 王凯 (香港理工大学深圳研究院), 潘冬乐 (Non-PolyU Researcher), 杨雄斌 , 李叶海 , 曹武雄 , 徐琰锋 (Non-PolyU Researcher), 廖耀仲 , 周齐 (Non-PolyU Researcher) and 周鹏宇
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : RMB 650,000.00

Project Title : In-situ 3-D Nonlinear Ultrasonic Imaging for Embedded Scatterers with 3-D Features Using Diffuse Waves: from Offline NDE to Continuous SHM
Investigators : ZQ Su and Z Fan (Nanyang Technological University (Singapore))
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 637,750.00

Project Title : 粉末盘激光超声裂纹检测技术研发及平台搭建
Investigators : ZQ Su, 鲍峤 (南京航空航天大学), 高俊启 (南京航空航天大学), 陈仁文 (南京航空航天大学), 许磊 , 袁慎芳 (南京航空航天大学), 蔡建 (南京航空航天大学), 苏义印 , 王凯 (香港理工大学深圳研究院) and 梅寒飞 (南京航空航天大学)
Source of Funding : 技术开发委托项目
Amount Sponsored : RMB 970,000.00

Project Title : 基于场景理解的可解释自动驾驶端到端决策技术研究
Investigators : YX Sun, 高爽 , 徐怀远 (Non-PolyU Researcher), 刘卓远 (Non-PolyU Researcher) and 冯宇超
Source of Funding : 之江实验室开放课题
Amount Sponsored : HKD 500,000.00

Project Title : 面向自动驾驶的非结构化路面环境负障碍物以及运动障碍物检测关键技术研究
Investigators : YX Sun
Source of Funding : NSFC Young Scientists Fund 國家自然科學基金委員會青年科學基金項目
Amount Sponsored : HKD 240,000.00

Project Title : Study of magnetic hyperthermia based cancer treatment using a holistic simulation framework
Investigators : H Tang, K Vafai (University of California, Riverside (United States)) and S Kenjeres (Delft University of Technology (Netherlands))
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 654,921.00

Project Title : 利用超疏水表面 Leidenfrost 现象实现可持续的湍流减阻
Investigators : H Tang
Source of Funding : NSFC Major Research Project 國家自然科學基金委員會重大研究計劃項目
Amount Sponsored : RMB 475,000.00

Project Title : 基于合成射流的柔性扑翼自主推进性能提升方法与机理研究
Investigators : CL Wang and 邓放 (Non-PolyU Researcher)
Source of Funding : 青年基金项目
Amount Sponsored : HKD 100,000.00

Project Title : Investigation and Optimization of Porous Coatings on the Stabilization of Hypersonic Boundary-Layer Flows
Investigators : CY Wen
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : 汇聚激波诱导可燃界面的 Richtmyer-Meshkov 不稳定性研究
Investigators : CY Wen
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 70,513.00 + RMB 620,000.00

Project Title : 声学超表面对高超声速边界层转捩的抑制机理与应用
Investigators : CY Wen, J Zhu, 龙铁汉 , 郝佳傲 (北京航空航天大学), 范建辉 (香港理工大学深圳研究院), 田旭东 , 李政桐 (香港理工大学深圳研究院), 姜亚中 (Non-PolyU Researcher) and 刘垚 (香港理工大学深圳研究院)
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : RMB 200,000.00

Project Title : Numerical and Experimental Investigations of Thermochemical Nonequilibrium Phenomena in Hypersonic Flows
Investigators : CY Wen + AAE
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 705,919.00

Project Title : Trial: Development of Vertical Take-Off and Landing (VTOL) Unmanned Aerial Vehicle (UAV) for Air Quality Monitoring in Greater Bay Area
Investigators : CY Wen
Source of Funding : Innovation and Technology Fund - Innovation and Technology Support Programme - Public Sector Trial Scheme (ITF-PSTS)
Amount Sponsored : HKD 1,000,000.00

Project Title : 硅基锂电池负极材料的仿生梯度化设计与制备
Investigators : HM Yao, 高阳 (Non-PolyU Researcher), 郭镇斌 (Non-PolyU Researcher), 谢玉洁 , 袁丁 (厦门大学博士后 · 香港理工大学访问学者), 殷其放 (Non-PolyU Researcher), 杨君坦 (Non-PolyU Researcher), 张紫荆 and 傅济民 (Non-PolyU Researcher)
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 72,787.00 + RMB 640,000.00

Project Title : 拉格朗日 - 欧拉框架下喷雾模拟中的液滴碰撞理论和模型研究
Investigators : P Zhang
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 580,000.00

Project Title : Frenkel-Kontorova model based simulation on the deformation mechanisms in nanostructured high-entropy alloys
Investigators : GP Zheng
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : 高熵铁电陶瓷的介电储能特性及在高功率脉冲器件中的应用
Investigators : GP Zheng
Source of Funding : 先進能源科學與技術廣東省實驗室佛山分中心暨佛山仙湖實驗室開放基金重大 / 重點項目
Amount Sponsored : HKD 3,840,120.00

Project Title : Investigation on broadband transition delay and stability control of hypersonic turbulent boundary layer via gradient-index acoustic metasurface
Investigators : J Zhu
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 642,421.00

Project Title : Non-Hermitian Systems in Optics and Acoustics (ME)
Investigators : J Zhu and JTH Li (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding : RGC Collaborative Research Fund (CRF-GP)
Amount Sponsored : HKD 360,000.00

Project Title : 基于超构表面的突破衍射极限的声波聚焦和成像
Investigators : J Zhu, YS Choy, 顾仲明 (香港理工大学深圳研究院), 陈龙 (香港理工大学深圳研究院), 陈飞 (香港理工大学深圳研究院), 郜贺 (香港理工大学深圳研究院), 王志博 (香港理工大学深圳研究院), 梁善军 (香港理工大学深圳研究院) and 刘拓 (香港理工大学深圳研究院)
Source of Funding : NSFC General Program 國家自然科學基金委員會面上項目
Amount Sponsored : HKD 70,513.00 + RMB 620,000.00

Project Title : Study of genetic algorithm-based inverse metamaterial design for acoustic wave manipulation in water
Investigators : J Zhu and SU ZQ
Source of Funding : RGC General Research Fund
Amount Sponsored : HKD 705,919.00

Project Title : 基于拓扑解耦 - 深度学习的先进复合材料损伤模式分类方法研究
Investigators : Zhu Jianjian
Source of Funding : NSFC Young Scientists Fund 國家自然科學基金委員會青年科學基金項目
Amount Sponsored : HKD 300,000.00

Projects funded by Central Research Grant

Project Title : Flow and Transport Phenomena through Hierarchical Porous Electrodes in Vanadium Redox Flow Batteries for Large-scale Energy Storage
Investigators : L An
Amount Sponsored : HKD 150,000.00

Project Title : A Tri-functional Fuel Cell System for Simultaneous Production of Valuable Chemicals, Generation of Electricity and Removal of Heavy Metal Ions
Investigators : L An
Amount Sponsored : HKD 50,000.00

Project Title : Large-size Lithiophilic Two-dimensional Metal Organic Frameworks on a Current Collector to Stabilize Lithium Deposition for Lithium Metal Batteries
Investigators : GH Chen
Amount Sponsored : HKD 766,000.00

Project Title : Advanced Electrode Materials for High Performance Electrochemical Batteries
Investigators : GH Chen
Amount Sponsored : HKD 378,000.00

Project Title : Postdoc Matching Fund Scheme - MAJUMDER Soumyadip
Investigators : GH Chen
Amount Sponsored : HKD 503,255.00

Project Title : Development of a Motorized Microchip Platform for High-throughput Cell Assay and Characterization
Investigators : KH Chu
Amount Sponsored : HKD 50,000.00

Project Title : Size Effect Based Micro-mechanics and Its Affected Behaviors and Phenomena in Micro-manufacturing and Micro-product Service
Investigators : MW Fu
Amount Sponsored : HKD 500,000.00

Project Title : Shape Memory Performance and Micro-mechanics of 3D Printed Structures Made of Shape Memory Alloys for Bio-medical Applications
Investigators : MW Fu, XS Yang (ISE), SQ Shi and Y Yang (The City University of Hong Kong (Hong Kong))
Amount Sponsored : HKD 400,000.00

Project Title : Plastic Deformation Based Processing of Advanced Materials
Investigators : MW Fu
Amount Sponsored : HKD 315,000.00

Project Title : Mechanical Properties and Constitutive Modelling in the Ultra-thin Metallic Sheet under Varied Loading Path
Investigators : MW Fu
Amount Sponsored : HKD 180,600.00

Project Title : Solute Segregation and Precipitation Mechanism in Nanoparticle-strengthened High-entropy Alloys
Investigators : ZB Jiao
Amount Sponsored : HKD 200,000.00

Project Title : Design of Advanced High-entropy Alloys for High-temperature Applications
Investigators : ZB Jiao
Amount Sponsored : HKD 150,000.00

Project Title : Nonlinear Dynamics and Control with Innovative Applications (Mechanical Systems or Robots)
Investigators : XJ Jing
Amount Sponsored : HKD 315,000.00

Project Title : A Bio-inspired Marine Robot for Underwater Monitoring
Investigators : XJ Jing, Y Xia (CEE), QX Wang (COMP), LW Lai (LSGI) and A Chemori (LIRMM - CNRS, France (France))
Amount Sponsored : HKD 1,880,000.00

Project Title : Engineering Ultra-Conformal Elastic Conducting Polymers Coating on Material Particles for Advanced High-Energy Lithium-ion Batteries via Novel Chemical Vapor Deposition (CVD) Method
Investigators : Q Liu
Amount Sponsored : HKD 500,000.00

Project Title : Novel Functional Devices Based on Spoof Surface Acoustic Waves
Investigators : T Liu
Amount Sponsored : HKD 500,000.00

Project Title : The Dynamics of a Single Fiber Conveyed in a Laminar Channel Flow
Investigators : Y Liu
Amount Sponsored : HKD 50,000.00

Project Title : Simulations and optimizations of precision glass molding
Investigators : HH Ruan
Amount Sponsored : HKD 600,000.00

Project Title : Novel Bio-compatible Shape Memory Alloys with Zero Hysteresis, Linear Super-elasticity and Ultralow Modulus
Investigators : SQ Shi
Amount Sponsored : HKD 799,800.00

Project Title : A Study on Deep Learning-based Autonomous Driving: From Multi-modal Perception to End-to-End Control
Investigators : YX Sun
Amount Sponsored : HKD 500,000.00

Project Title : Numerical Study on the Hypervelocity Boundary-Layer Transition with Real Gas Effects
Investigators : CY Wen
Amount Sponsored : HKD 799,800.00

Project Title : Integrating the Physical and Chemical Antifouling Strategies Learned from Nature
Investigators : HM Yao
Amount Sponsored : HKD 148,780.00

Project Title : Gradient-composition Design in Blade-casted 3D Lithium Host for Stable Anode-free Lithium Metal Batteries
Investigators : XL Yu
Amount Sponsored : HKD 500,000.00

Project Title : Spray Impingement Modelling and Simulation based on Accurate Description of Droplet Impact Dynamics
Investigators : P Zhang
Amount Sponsored : HKD 180,600.00

Project Title : Unified Theory and Predictive Modelling for Droplet Coalescence
Investigators : P Zhang
Amount Sponsored : HKD 148,780.00

Project Title : Chemical kinetics of lithium ion battery
Investigators : H Zhao
Amount Sponsored : HKD 200,000.00

Projects with Research Students funded by CRG/GRF/ITF/ other external grants

Student Name	Project Title	Supervisor
PhD (Full-Time)		
ABDELKAREEM Mohamed Abdelrahman Ali	Multi-directional Nonlinear Energy Harvesting Systems: Design, Analysis, and Realization	YS Choy, XJ Jing (City University of Hong Kong)
AI Chunhui	Fluid-structure Interaction of Compliant Vessels with Pulsatile Flows	H Tang
AKBAR Muhammad Ayaz	Design of a Particle Impact Damper for the Passive Control of Seismically Excited Structures	WO Wong
AKHTAR Awais	Thin Film Coatings with Ultrahigh Stability for Glass Molding Applications	HH Ruan
AN Shuowei	Non-Hermitian Elastic Wave Metamaterials Based on Parity-time Symmetry	L Cheng, J Zhu (Tongji University, China)
CHAO Xu	Design and Analysis of Biomimetic Mechanisms for Underwater Robots and Applications	David Navarro-ALarcon, XJ Jing (City University of Hong Kong)
CHEN Keyu	A Study on Next-Best-View Problem for Robotic Exploration	YX Sun
CHEN Shanlin	Integrated Remote Sensing and Machine Learning for Solar Forecasting and Resource Assessment	MY Li, H Tang
CHEN Zongnan	The Application of Dielectric Barrier Discharge Plasma Actuators on Active Flow Control around a Bluff Body	CY Wen (AAE)
CUI Zhenxi	Image-based Alignment and Assembly of Cell-Laden Hydrogels under Cell Culture Medium	Henry Chu, L Cheng
DENG Fang	Collective Locomotion of Self-propelled Flapping Flexible Fiols	CL Wang, H Tang
ECCEL VELLWOCK Andre	Surface Engineering for Biofouling Control	H Yao
ESAN Oladapo Christopher	Mathematical Modeling of Fluid Flow and Mass/Charge Transport in Vanadium Redox Flow Batteries	L An, H Tang
FAN Haiyan	Hermitian and Non-Hermitian Topological Edge States in Perturbative Elastic Metamaterials	Z Q Su, J Zhu (TONGJI UNIVERSITY), T Liu (CHINESE ACADEMY OF SCIENCES)
FAN Lei	Development of A New Tunale Metasurface For Broadband Elastic Wave Manipulation	Z Q Su, J Zhu (TONGJI UNIVERSITY)
FANG Jieyichen	Phase Stability, Transformations, and Mechanical Properties of Coherent Precipitation-Strengthened Medium/High-Entropy Alloys	ZB Jiao, MW Fu
FENG Yuchao	A Study on Explainable Decision Making for Autonomous Driving Based on Environment Perception	YX Sun, H Tang
FENG Zhen	A Study on Semantic Scene Understanding for Complex Traffic Environments	David NAVARRO-ALARCON, YX Sun, Yanning GUO (HARBIN INSTITUTE OF TECHNOLOGY)
FU Jin	Triply Periodic Minimal Surface (TPMS) Based Metallic Cellular Structures by Micro Laser Powder Bed Fusion for Mechanical Energy Absorption Applications	MW Fu
GAO Lihao	Dynamics of Micro Droplets and Jets subject to Intense Laser Blasts	H Tang, DENG WW (SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
GAO Shuang	A Study of Semantic Grid Mapping Using a Visual Camera for Autonomous Driving	YX Sun Q Wang (HARBIN INSTITUTE OF TECHNOLOGY)
GOHAR Ghulam Abbas	Chemical Kinetic Studies of Electrolyte of Lithium-ion Battery	L An, Hao Zhao (PEKING UNIVERSITY), P Zhang (CITY UNIVERSITY OF HONG KONG)
GONG Chen	Wave Dynamics and Designs of Nonlinear Acoustic Metamaterials	L Cheng
GUO Jiaming	Thermal Stability, Mechanical Properties, and Deformation Behavior of Coherent Nano-Lamellar High-Entropy Alloys	ZB Jiao
GUO Xinze	Design, Manufacturing and Application of Active Mechanical Metamaterials for Elastic Wave Manipulation and Vibration Control	Z Q Su
HAFEEZ Saiqa	Molecular Dynamics Simulation of the Composite Solid-State Electrolyte PEO-LGPS Properites	XL Yu, GH Chen (CITY UNIVERSITY OF HONG KONG), Yonghong DENG) SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
HAMEED Imran	Modeling and Control of a Multi-Tail Marine Robot	David NAVARRO-ALARCON, XJ Jing (CITY UNIVERSITY OF HONG KONG)
HE Yi	Laser-ultrasonics-based Multiscale-feature Inspection and Characterization for Opaque Buried Structure and Material: from Analytical Modelling, through Validation, to Engineering Applications	Z Q Su, K Wang (AAE)
HU Liang	Liquid Electrolyte Design for Low-temperature Rechargeable Sodium Metal Batteries	XL Yu, GH Chen (CITY UNIVERSITY OF HONG KONG)
HUANG Sibo	Sound Absorption Based on Acoustic Metasurfaces	ZQ Su, Yong Li (TONGJI UNIVERSITY), J Zhu (TONGJI UNIVERSITY)
HUO Shengzeng	Keypoint-based Bimanual Shaping of Deformable Linear Objects under Environmental Constraints	David NAVARRO-ALARCON
JIANG Qian	Study of Magnetic Hyperthermia Based Cancer Treatment Using a Holistic Simulation Framework	H Tang , Y Liu
JIANG Qinghong	Additive Manufacturing and Ultra-High Speed Machining of TiCp/Ti6A14V Metal Matrix Composites (TMMCs)	M W Fu , B Zhang, (SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
JIANG Shujuan	Prediction of Two-dimensional Ferroelectric Materials Based on Density Functional Therory	G P Zheng
JIANG Xiao	Soot Formation and Evolution Characteristics of Premixed Hydrocarbon Flames	T L Chan

Student Name	Project Title	Supervisor
KWONG Tak Chun	Environmental Noise Control Strategy Based on Psychophysiological Acoustics Assessment Method	YS Choy, Henry Chu, L Cheng, Co-S: LUN Pak Kong, enpklun, (EIE)
LABAZANOVA Luiza	Mobile Self-Reconfigurable Soft-Rigid (2SR) Robots	David NAVARRO-ALARCON, Thrishantha NANAYAKKARA (IMPERIAL COLLEGE LONDON)
LI Sihui	Sonic Black Holes in a Perforated Boundary-Modulated Retarding Structure	L Cheng
LI Tian	The Effect of Glass-Glass Interfaces on the Mechanical, Magnetic and Thermodynamic Properties of Metallic Nano-Glasses	GP Zheng
LI Ying	Investigation on The Acoustic Impedance of The Microperforated Panel Subject to Flow and High-Pressure Excitation	YS Choy
LIANG Zhaojian	Theoretical Investigations of the Transient Characteristics of Solid Oxide Electrolyzer Cells (SOEC) Under Unstable Operational Conditions	MY Li, L An
LIU Jinan	Propulsion and Steering of Artificial Flagellated Micro-swimmers	HH Ruan
LIU Qiutong	Improving Wearable Tactile Rendering Effectiveness Using Surface Wave Manipulation and Focusing	Y Ma, H Tang
LIU Yichen	Development of High-Performance Sodium Storage Cathode Material Based on Ni-Rich Co-Less Layered Oxide	Q Liu, GH Chen (CITY UNIVERSITY OF HONG KONG)
LIU Yun	Ammonia as Mediato for Renewable Energy Conversion and Storage	L An, J Zhu (TONGJI UNIVERSITY)
LIU Yutong	Ultra-conformal Dual-conductive Polymer Coating on Next-generation Materials for High-performance Lithium-ion Battery	Q Liu, Co-S-E: CHEN GH (CITY UNIVERSITY OF HONG KONG)
LIU Ze	Topologically Customized Metamaterial Devices for Nonlinear-Guided-Wave-Based Structural Health Monitoring	L Cheng
LU Tianhui	Sustainable Marine Infrastructure Enhanced by Seawater Sea-Sand Concrete and Fibre-Reinforced Polymer Composites	Z Q Su, Tao Yu (CEE), LM Zhou (SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
MA Siyao	Tailoring Grain Morphology and Elastocaloric Properties of Ni-Mn Base Shape Memory Alloys	GP Zheng, Xue Xi Zhang (HARBIN INSTITUTE OF TECHNOLOGY)
MA Wanyu	Vision-Based Robotic Manipulation of Deformable Objects with Iterative Learning of Mechanical Properties	David NAVARRO-ALARCON
MA Weixin	Semantic-Aided Visual-SLAM in Dynamic Traffic Environment for Autonomous Driving	YX Sun, David NAVARRO-ALARCON
MENG Shiyu	End-to-end Moving-object Detection in 3D LiDAR point clouds for Autonomous Driving	YX Sun, H Tang
NASEEM Sufyan	Alloy Design, Thermal Stability, and Mechanical Properties of Heat-resistant Steels Strengthened by Nanoscale Precipitation	ZB Jiao
NASEER Muhammad Rehan	Control of Deep Cavity Aeroacoustics Using Flow-Induced Surface Vibration of Wall Mounted Flexible Panel	RCL Leung
NI Bingyu	Formation, Stability, and Mechanical Properties of Nanostructured Metal-Intermetallic Composites	ZB Jiao, Xiaodong XIANG (SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
RAZA Hassan	High Entropy Oxides (HEOs) For Lithium Sulfur Batteries	GH Chen
RUAN Jianyuan	Real-Time Localization and Meshing for LiDAR	YX Sun, David NAVARRO-ALARCON
SHI Xingyi	Experimental Investigations on Vanadium-Air Redox Flow Batteries	L An, HH Ruan
SONG Yang	AI-assisted and Digital Twin Enabled Guided Waves for Damage Detection and Health Monitoring of Composite Structures	L Cheng
SUN Xiang	Enhanced Acoustic Black Hole Effects through Intentional Mechanical Coupling and Nonlinearities	L Cheng
TIAN Yishen	Beneficial Nonlinear Stiffness of Properties with Bio-inspired Polygon Structure Design	YS Choy, Deng Qing CAO (HARBIN INSTITUTE OF TECHNOLOGY), XJ JING (CITY UNIVERSITY OF HONG KONG)
TONG Xu	Size Effect Affected Anisotropy and Asymmetry in Multi-Scaled Deformation of Metallic Materials	MW Fu
TSOI Man Ho	Internet of Things Devices Stability Enhancement by Noise Filtering and Collision Avoidance	YS Choy
WANG Chuyang	Development of Active Noise Cancellation Algorithms for Headsets with Single and Multiple Microphones	Henry Chu, L Cheng, Y S Choy
WANG Fei	Coupled CFD-Monte Carlo Simulation of Soot Aerosol Dynamics in Combustion Flows	L An, TL Chan
WANG Man	Design and Synthesis of Novel Electrode Materials for High-Performance Supercapacitors	GH Chen, Juan Yang (XI'AN JIAOTONG UNIVERSITY)
WANG Mingrui	On the Gas-phase Combustion of Trans- and Super-critical Fluids: Theory, Modeling and Experiments	S Cheng, P Zhang (CITY UNIVERSITY OF HONG KONG)
WANG Wei	Phase-Field Modelling of Mechani-electrochemical Process in Solid-state Batteries and Other Systems	HH Ruan
WEI Sheng	Development of Sound Absorber in Nonlinear Regime	YS Choy
WENG Qingsong	Synthesis and Characterization of Cobalt-Less Nickel-Rich Layered Cathode Materials for High-Energy-Density Lithium-Ion Batteries	Q Liu, GH Chen (CITY UNIVERSITY OF HONG KONG), Xuejie Huang (SONGSHAN LAKE MATERIALS LABORATORY)
WONG Bo Ching	Study of Hydrogen Embrittlement Behaviours, Microstructure and Mechanical Properties of High Pressure Cold Sprayed Ti-6A1-4V with Post-Spray Heat Treatments	MW Fu, HP Tang (ASRC), Y Xin (ASRC)
WU Yifei	Investigation of Hot Embossing of Chalcogenide Glass (ChG)	HH Ruan

Student Name	Project Title	Supervisor
XIE Chuyi	High-energy and Long-cycling Dendrite-free Lithium Metal Anode Enabled by Modification of Stripping/ Plating Behaviour	Q Liu, GH Chen (CITY UNIVERSITY OF HONG KONG)
XU Xin	Modeling, Force Sensing and Dynamic Control for Parallel Continuum Robot	Henry Chu, David NAVARRO-ALARCON
YANG Jianwei	Tomography-based Health Monitoring of Composite Structures Using Fully Diffuse Sensing Networks	Z Q Su
YANG Tao	Vortex-Dynamics and Synchronization of Multiple Flickering Diffusion Flames	Y Ma, P Zhang (CITY UNIVERSITY OF HONG KONG)
YANG Wentao	Study on the Energy Storage Property of High Entropy Ceramic	GP Zheng, Jin Kui ZHAO (SONGSHAN LAKE MATERIALS LABORATORY)
YANG Yi	Investigation of Glassy-Carbon Structure Formation: Experiments and Modelling	HH Ruan
YE Ling	Design and Fabrication of High-Energy and Long-Life Zinc Ion Capacitors	XL Yu, GH Chen (CITY UNIVERSITY OF HONG KONG)
YEUNG Wai Kin	Machine Learning Based Active Flow Control on a Circular Cylinder	H Tang
YU Qiang	First-principles Study of Stability, Mechanical Properties, and Deformation Mechanisms of Multicomponent Intermetallic Alloys	ZB Jiao
YUEN Tsz Wai	Self-Propelled Fish Behind Multiple Cylinders	H Tang
ZENG Lingwei	Passive Control of Flow-Induced Vibrations of Bluff Body	H Tang, Y Liu
ZHAI Yanjie	Electrochemical Updating of Pure Liquid Fuels via Coupling Electrochemical Reduction/Oxidation	X Zhang, L An
ZHANG Bin	Multipartite Formation Control of Multi-Agent Systems Over Complicated Geometries	David NAVARRO-ALARCON
ZHANG Linli	Structural Wave Manipulation and Applications through Electro-mechanically Enhanced Acoustic Black Hole Effects	L Cheng
ZHANG Wanglinhan	Development of Ultrasonic Wearables and Applications to Acquisition of Bioinformation	ZQ Su
ZHANG Xin	TBC	S Cheng, P Zhang (CITY UNIVERSITY OF HONG KONG)
ZHANG Yuanman	AI and Digital-twin Assisted Waves for Damage Localization and Health Monitoring of Thick-walled Hollow Cylinders	L Cheng
ZHANG Yuzhou	Near-net-shape Thermoforming of Cover Glasses Involving Large Viscoelastic Deformation and Chemical Strengthening	HH Ruan
ZHANG Zijing	Mechanics-based Investigation of the Hygroscopic Swinging Motion of Mxene Film for Its Application in Energy Conversion and Harvesting	H Yao
ZHAO Binglong	The Application of Data-Driven Model in Methanol Steam Reforming	Q Liu, GH Chen (CITY UNIVERSITY OF HONG KONG), Ke Liu (SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY)
ZHAO Liangjing	Variation of Spectral Characteristic Vasomotion at Different Location of the Arm	H Tang , Y Liu
ZHAO Qingxiang	Research on Control Scheme and Shape Reconstruction Towards Pneumatic-Driven Continuum Robot	Henry Chu
ZHOU Peng	LaGeo: A Latent and Geometrical Framework for Path and Manipulation Planning	David NAVARRO-ALARCON
ZHOU Zengcheng	Modeling and Control of Bio-Inspired Underwater Robots	David NAVARRO-ALARCON, XJ Jing (CITY UNIVERSITY OF HONG KONG)

PhD (Part-Time)

LEE Hoi Yin	Interaction and Automation in Robotics: From Assistance to Collaboration	David NAVARRO-ALARCON

MPhil (Full-Time)

KANDASAMY Subash	Single Phase High Entropy Oxides for Chlorine Evolution Reaction	Q Liu, L An, GH CHEN (CITY UNIVERSITY OF HONG KONG)
ZHU Yinggang	Green and Mild Process for Li Metal Production	GH Chen

MPhil (Part-Time)

TSOI Man Ho	Internet of Things Devices Stability Enhancement by Noise Filtering and Collision Avoidance	YS Choy
YUEN Tsz Wai	Self-Propelled Fish Behind Multiple Cylinders	H Tang

Research Collaborations

In the year of 2021/2022, the Department has worked hard to establish collaborative research activities with the following educational institutions and organizations:

Institution / Organization	Region
AGH university of Technology	Poland
Argonne National Lab	USA
ASML	USA
Avalonsteritech	Mainland China
Beihang University	Mainland China
Beijing Institute of Technology	Mainland China
Beijing University of Technology	Mainland China
Blickson Limited	HK
Brandenburg University of Technology Cottbus–Senftenberg	Germany
Central South University	Mainland China
Changzhou University	Mainland China
Chinese Academy of Sciences	Mainland China
Chongqing University	Mainland China
City University of Hong Kong	Hong Kong
College of France	France
Curtin University	Australia
Dalian Institute of Chemical Physics, Chinese Academy of Sciences	Mainland China
Delft University of Technology	Netherlands
Dorabot Holdings Co., Limited	Hong Kong
EVE Lithium Energy	Mainland China
FairTech	Mainland China
Guilin University of Technology	Mainland China
Harbin Engineering University	Mainland China
Harbin Institute of Technology	Mainland China
Harbin Institute of Technology, Shenzhen	Mainland China
Henan University	Mainland China
Hohai University	Mainland China
Hong Kong Jockey Club	Hong Kong
Hong Kong Productivity Council	Hong Kong
Huawei Technologies Co., Ltd.	Mainland China
Huazhong University of Science and Technology	Mainland China
Huizhou Qichen New Tech	Mainland China
Imperial College London	UK
INSA-Lyon	France
Institut Pascal / SIGMA Clermont	France
Institute of Fluid-Flow Machinery, POLISH ACADEMY OF SCIENCES	Poland
Institute of Mechanics, Chinese Academy of Sciences	Mainland China
Institute of Metal Research, Chinese Academy of Sciences	Mainland China
Jinan University (Youdi Kuang group)	Mainland China
Korea Advanced Institute of Science and Technology	South Korea
Le Mans Université	France
Mainland China Jiliang University	Mainland China
MAInnovation	Mainland China
Massachusetts Institute of Technology	USA
Midea	Mainland China
Monash University	Australia
MTR	Mainland China
Nanjing university of Aeronautics ans Astronautics	Mainland China
Nanyang Technological University	Singapore
National Research Council	Italy
NEC Hong Kong Limited	Hong Kong
Ningbo University	Mainland China
Northwestern Polytechnical University	Mainland China
Peking University	Mainland China
Penn State University	USA
Pennsylvania State University	USA
Peter the Great St Petersburg Polytechnic University	Russia
Purdue Unvierstiy	USA
Qiqihar University	Mainland China
SenseTime Group Limited	Hong Kong
Shandong University	Mainland China
Shanghai Jiaotong University	Mainland China
Shenyang Institute of Automation, Chinese Academy of Sciences	Mainland China
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences	Mainland China
Shenzhen Qichen New Tech Ltd.	Mainland China
Shenzhen Tencent Computer Systems Company Limited	Mainland China
Shenzhen Unity Drive Innovation Technology Co., Ltd.	Mainland China
Shenzhen University	Mainland China
South University of Science and Technology	Mainland China
Southeast University	Mainland China
Southern University of Science and Technology	Mainland China
Stevens Institute of Technology	USA
Technical University of Munich	Germany
Texas A&M University	USA
The Chinese University of Hong Kong	Hong Kong
The Chinese University of Hong Kong, Shenzhen	Mainland China
The Hong Kong University of Science and Technology	Hong Kong
The University of California, San Diego	USA
Tianjin University	Mainland China
Tongji University	Mainland China
Tsinghua University	Mainland China
Tsinghua University Shenzhen International Graduate School	Mainland China

University College London	UK
University of California San Diego	USA
University of Illinois at Urbana-Champaign	USA
University of Liege	Belgium
University of Macau	Macau
University of Montpelier / LIRMM	France
University of Naples "Federico II"	Italy
University of Paris, UTC	France
University of Science and Technology Beijing	Mainland China
University of Science and Technology of Mainland China	Mainland China
University of Toronto	Canada
University of Toulon	France
Xi'an Jiaotong University	Mainland China
Xiamen University	Mainland China
Yanshan University	Mainland China
Yibin R&D Park of Sichuan University	Mainland China
Zhejiang Lab	Mainland China
Zhejiang University	Mainland China

Research Outputs

Summary	
Patent	5
Book	1
Book Chapter	4
Journal	173
Conference Proceeding	19
Total no. of archival publications	202

Patent

1. Wallace WF Leung, Nanofiber surfaces, US 11,224,860 B2, Jan 18, 2022.

2. Wallace WF Leung, JC Wang, LJ Yang, Crystal control and stability for high-performance perovskite solar cell, US patent 11,217,751 B2, Jan 4, 2022.

3. Wallace WF Leung, Electrostatically-charged Nanofiber Media and Fabrication Method Thereof, US patent 11148085 B2, Oct 19, 2021.

4. Yao Haimin, 一种激光诱导多尺度微通道自组装成型加工方法 , Apr 19, 2022.

5. Yao Haimin, 一种测量热导率的方法及设备 , Jul 16, 2021.

Book

1. Leung, RCK (ed.), Ciappi, E, De Rosa, S, Hambric, SA, Clair, V, Maxit, L & Totaro, N 2021, 'Flinovia -- Flow Induced Noise and Vibration Issues and Aspects III', Springer International Publishing AG, Switzerland. https://doi.org/10.1007/978-3-030-64807-7

Book Chapter

1. Ding, Z & Jiao, Z 2021, 'Overview and Introduction: Multi-Scaled Metallic Parts and Structures'. in Encyclopedia of Materials: Metals and Alloys. Elsevier, pp. 19-36. https://doi.org/10.1016/B978-0-12-819726-4.00154-X

2. Ding, Z & Jiao, Z 2021, 'Metallic materials for making multi-Scaled metallic parts and structures', in Encyclopedia of Materials: Metals and Alloys. pp. 19-36. https://doi.org/10.1016/B978-0-12-819726-4.00007-7

3. Akbar, MA & Wong, WO 2021, 'A Pendulum Type Particle Impact Damper', in X Jing, H Ding & J Wang (eds), Advances in Applied Nonlinear Dynamics, Vibration and Control -2021. ICANDVC 2021. Lecture Notes in Electrical Engineering, vol 799. vol. 799, Springer Singapore, pp. 739 - 750.

4. Yin, Q & Yao, H 2021, 'Computational study on the effects of mechanical constraint on the performance of silicon nanosheets as anode materials for lithium-ion batteries', in Silicon Anode Systems for Lithium-Ion Batteries. Elsevier, pp. 95-118. https://doi.org/10.1016/B978-0-12-819660-1.00006-2

Journals

1. 1. Su, X, Pan, Z, An, L & Yu, Y 2021, 'Mathematical modeling of direct formate fuel cells incorporating the effect of ion migration', International Journal of Heat and Mass Transfer, vol. 164, 120629. https://doi.org/10.1016/j.ijheatmasstransfer.2020.120629
2. Su, XY, Pan, ZF & An, L 2021, 'Three-dimensional porous electrodes for direct formate fuel cells', Science China Technological Sciences, vol. 64, no. 4, pp. 705-718. https://doi.org/10.1007/s11431-020-1563-5
3. Li, G, Pan, Z, Lin, H & An, L 2021, 'In-situ formation of bismuth nanoparticles on nickel foam for ambient ammonia synthesis via electrocatalytic nitrogen reduction', Journal of Alloys and Compounds, vol. 875, 160006. https://doi.org/10.1016/j.jallcom.2021.160006
4. Liu, Y, Esan, OC, Pan, Z & An, L 2021, 'Machine learning for advanced energy materials', Energy and AI, vol. 3, 100049. https://doi.org/10.1016/j.egyai.2021.100049
5. Shi, X, Huo, X, Esan, OC, An, L & Zhao, TS 2021, 'Performance characteristics of a liquid e-fuel cell', Applied Energy, vol. 297, 117145. https://doi.org/10.1016/j.apenergy.2021.117145
6. Esan, OC, Shi, X, Su, X, Dai, Y, An, L & Zhao, TS 2021, 'A computational model of a liquid e-fuel cell', Journal of Power Sources, vol. 501, 230023. https://doi.org/10.1016/j.jpowsour.2021.230023
7. Li, G, Lin, H, Pan, Z, Liu, Y & An, L 2021, 'Boosting electrocatalytic nitrogen reduction to ammonia in alkaline media', International Journal of Energy Research, vol. 45, no. 13, pp. 19634-19644. https://doi.org/10.1002/er.6996
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Consultancy Projects

Member of the Department continued to make contributions to be the profession by engaging in high level consultancies for international organizations, government departments, private sector firms and community groups.

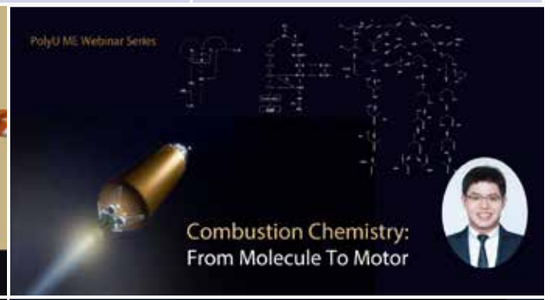
Below are some of our clients:

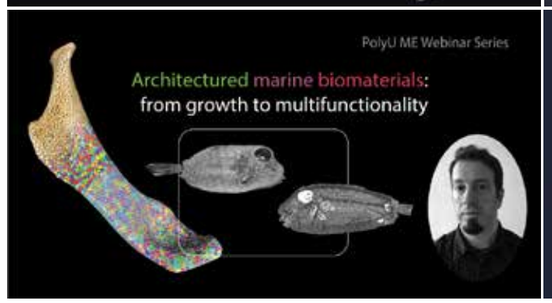
Avalon Steritech
Environmental Protection Department, HKSAR
Hong Kong Police Force
Ka Shui Manufactory Co., Ltd.
Luen Ming E&M Engineering Limited
Micro-Intelligence
Midea
Nano and Advanced Materials Institute (NAMI)
The Hong Kong Jockey Club
YUTRAFFIC Ltd.

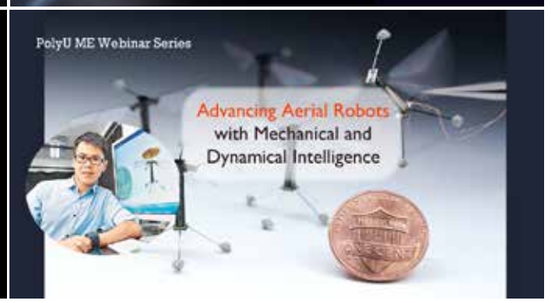
Departmental Seminar Series

The Department regularly holds research seminars on a wide variety of topics delivered by distinguished visiting researchers or external invited speakers with the aim of advancing research by exchanging knowledge and ideas within the field of Mechanical Engineering.

Date	Speaker/	Affiliation	Seminar Title
2021.08.19	Dr Tang Ao	Professor, Institute of Metal Research, Chinese Academy of Sciences (IMR-CAS)	Recent progress in vanadium flow battery development at IMR-CAS
2021.09.27	Dr Gao Lei	Associate Professor, School of Aeronautics & Astronautics, Sichuan University	Restricted vortex ring formation in starting forced plumes
2021.10.28	Dr Zhong Junwen	Assistant Professor, Department of Electromechanical Engineering, University of Macau	Flexible Electromechanical Transducers and the Human-Machine Interactive Applications
2021.11.19	Prof. Andrea Cherubini	Full Professor, Université de Montpellier	Robot Perception for interacting with humans and for manipulating soft objects
2021.12.29	Dr Pakpong Chirarattananon	Associate Professor, Department of Biomedical Engineering, The City University of Hong Kong	Advancing Aerial Robots with Mechanical and Dynamical Intelligence
2022.01.20	Dr Mason Dean	Associate Professor, Department of Infectious Diseases and Public Health, City University of Hong Kong	Architectured marine biomaterials: from growth to multifunctionality
2022.02.25	Prof. Kenneth Lau Ka Shun	Visiting Professor, Department of Mechanical Engineering, The Hong Kong Polytechnic University	Engineering Polymer Films, Structures, and Devices by Chemical Vapor Deposition
2022.03.17	Dr Sun Yong	Associate Professor, University of Electronic Science and Technology of China	5G and Artificial Intelligence Empowered Roll Forming for Precision Manufacturing of Key Parts for New Energy Vehicle
2022.05.19	Dr Li Yang	Professor, School of Astronautics, Northwestern Polytechnical University	Combustion Chemistry: From Molecule To Motor







Highlights of the Year

Staff Achievements and Research Development

ME Scholars ranked among the World's Top 2% Scientists by Citation

According to a recent index compiled by Stanford University, 20 academics of PolyU's Department of Mechanical Engineering (ME) have been ranked among the world's top 2% most-cited scientists in their main disciplines for career-long citation impact. 12 of them are current ME members. Among them, Prof. Chen Guohua has been ranked number 13 most-cited scientist in the world in his respective field.

The scholars were named in the "Updated science-wide author databases of standardized citation indicators" compiled by Stanford University. A research team, led by Professor John Ioannidis, created the database of more than 100,000 top scientists across the world on the basis of standardized citation indicators. They were grouped into 22 subject fields and 176 sub-fields using the indicators. The indicators included information on citations, an individual's scientific research output, co-authorship and a composite indicator for career-long citation impact up to the end of 2020. The latest dataset is based on the 1 August 2021 snapshot from Scopus.

The recognition reflects the significant influence and research excellence of the Department's scientists, who are committed to furthering their knowledge for the benefit of the world.

1. Dr An Liang
2. Prof. Christopher Chao Yu Hang
3. Prof. Chen Guohua
4. Prof. Cheng Li
5. Prof. Cheung Chun Shun
6. Prof. Fu Mingwang
7. Dr Jing Xingjian
8. Prof. Wallace Leung Woon Fong
9. Dr Liu Yang
10. Prof. Su Zhongqing
11. Dr Yao Haimin
12. Dr Zheng Guangping
13. Prof. Ronald So Ming Cho (Emeritus Professor)
14. Prof. Woo Chung Ho (Emeritus Professor)
15. Prof. Alan Lau Kin Tak (former staff)
16. Prof. Leung Chun Wah (former staff)
17. Prof. Shi Sanqiang (former staff)
18. Prof. Wen Chih-Yung (former staff)
19. Prof. Zhou Limin (former staff)
20. Prof. Zhou Yu (former staff)

Dr Zhang Xiao recognised amongst the World's Most Highly Cited Researchers in 2021

Being one of the eight academics from PolyU, Dr Zhang Xiao has been acknowledged in the "2021 Highly Cited Researchers" list by Clarivate Analytics.

The list identifies the most influential scholars around the world for their exceptional research performance, determined by the publication of multiple highly cited papers that rank in the top 1% by citations in each respective field. Approximately 6,600 researchers across the globe were named Highly Cited Researchers in 2021. The inclusion of our academics in the list is a testament to the University's pursuit of research excellence and our impact on society.

The department is proud of Dr Zhang's outstanding achievement in particular at such an early career stage.

Success in securing GRF/ECS 2022/23

In the 2022/23 results of grants from the Research Grants Council's General Research Fund (GRF) and Early Career Scheme (ECS) announced in June 2022, ME's success rate was 29% in 2022/23 exercise. Seven of our GRF/ECS proposals were funded.

Principal Investigator	Co-Investigator	Project Title
Prof. Cheng Li	Dr Zhang Xiaoqi (Wuhan University of Technology) Dr Yu Xiang (Institute of High Performance Computing, A*Star)	Sonic Black Holes in a Perforated Boundary-modulated Retarding Structure
Prof. Fu Mingwang	Nil	Multiscale defects in metal additive manufacturing and their avoidance via defect and part size scale oriented process control and optimization
Dr Li Mengying	Nil	Novel Hybrid Approach for High-fidelity Intra-hour Forecasting of Directional Solar Irradiance
Dr Ma Yuan	Nil	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation
Dr Ruan Haihui	Dr Huang Bolong (ABCT)	Modeling of pyrolysis towards precision glassy carbon geometry: an endeavor for high-temperature precision glass molding
Prof. Su Zhongqing	Prof SOHN Hoon (Korea Advanced Institute of Science and Technology)	Fully Non-contact, Micron-scale 3-D Imaging of Stacked Systems Using Femtosecond-laser-induced Thermoelastic Wave and Its Instantaneous Perturbation to Full-field Optical Polarization
Dr Wu Maochun	Prof Zhao Tianshou (HKUST)	Bubble Dynamics and Mass Transport in Tri-electrode Zinc-Air Flow Batteries

Professor Chen Guohua elected into the Canadian Academy of Engineering

The Canadian Academy of Engineering / L'Académie canadienne du génie

Prof. Chen Guohua, Otto Poon Charitable Foundation Professor in Smart and Sustainable Energy, Chair Professor of Energy Conversion and Storage, has been inducted into the Canadian Academy of Engineering (CAE). The announcement was made by President Yves Beauchamp of the CAE at its Annual General Meeting on June 13, 2022. Prof. Chen is among 54 new Fellows elected into the academy this year. Election to the Canadian Academy of Engineering is one of the highest honours in engineering. Fellows of the CAE are nominated and elected by their peers, in view of their distinguished achievements and career-long service to the engineering profession.

Chen's CAE citation reads: "Professor Guohua Chen is an outstanding chemical engineer, a renowned expert in electrochemical technologies for sustainable development, a highly successful mentor and university administrator. He leads the commercialization of proprietary technologies for energy storage applications, with world leading performance. He has published over 300 journal papers with very top academic impact. He is an assiduous advocate for global collaboration, serving on a number of international councils and editing for prestigious journals, including CanJChE, CJChE, SEPPUR and PSEP. He is a fellow of AIChE and HKIE, respectively. He works enthusiastically in increasing chemical engineering impact globally."

ME Staff received Faculty Awards for Outstanding Achievement 2021

Since 2003, the Faculty Research Grant Achievement Award has been set up by the Faculty Research Committee to recognize the outstanding performance of FENG academic staff members in securing external competitive research grants. Besides, the Faculty Awards in Teaching, Research and Scholarly Activities, and Services have also been established to encourage and recognize excellent practices in respective areas. Winners of the awards have demonstrated a high level of professionalism and dedication, and contributed to the achievements of the Faculty. The following ME staff members received the Faculty Awards for Outstanding Achievement 2021.

Dr An Liang	Faculty of Engineering Outstanding Award in Research and Scholarly Activities: Outstanding Young Researcher (Individual) 2021
Prof. Fu Mingwang	Faculty of Engineering Merit Award in Research and Scholarly Activities: Outstanding Researcher (Individual) 2021
Dr Choy Yat Sze	Faculty of Engineering Merit Award in Teaching (Individual) 2021
Dr David Navarro-Alarcon	Faculty of Engineering Merit Award in Teaching (Individual) 2021

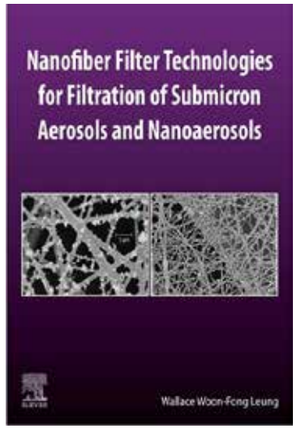
Professor Fu Mingwang elected to 2022 SME College of Fellows

Prof. Fu Mingwang has been elected to the 2022 SME (Society of Manufacturing Engineers) College of Fellows. This year, only eight individuals were elected to the 2022 SME College of Fellows. Prof. Fu has been the senior member of SME since 2000 and he was the only individual outside of the United States elected to the 2022 SME College of Fellows.

Since 1986, the Society of Manufacturing Engineers (SME) College of Fellows has honored those members who have made outstanding contributions to the social, technological and educational aspects of the manufacturing profession. This is a highly prestigious honor that can only be earned through years (20 or more) of dedication and service.

The Society of Manufacturing Engineers is the world's leading professional society advancing manufacturing knowledge and influencing more than half a million manufacturing practitioners annually. SME's communities connect manufacturers to their peers by discipline, industry, or geographies – enabling powerful collaboration, strengthening networks, fostering research, surfacing experts, and enhancing knowledge. Election as an SME Fellow is limited to a select group of individuals each year, making it one of the most prestigious honors bestowed by SME.

Professor Wallace Leung's new book on nanofiber filter technologies published by Elsevier



Prof. Wallace Leung has recently written a new book, "Nanofiber filter technologies for filtration of submicron aerosols and nanoaerosols", published by Elsevier, 2021.

More than 26 cities in the world have high PM2.5 with over 10,000 counts/cubic centimeter. Hong Kong is no exception due to severe pollution from traffic emissions and the transport of pollutants across the border. The aerosols are dominated by submicron aerosol sizes less than one micrometer/micron and nanoaerosols of less than 100 nanometers. Novel coronavirus (SARS-CoV-2 virus) leading to the COVID-19 pandemic that has paralyzed the entire world in magnitude far beyond anyone's imagination is in the same size category. Unfortunately, failure to recognize one of the modes of transmission by air of the coronavirus and its variants by the health authorities, experts, and the General Public leads to widespread disease and deaths globally during the first half of 2020 and in some cases even as of today. The book provides strong definitive evidence collected worldwide on the air transmission mode of the virus from residence, hospitals to laboratories. The virus is 60-140 nanometers and when attached to a carrier, it can be easily airborne. The book also provides nanofiber technologies on how the airborne virus can be effectively filtered. The book is written in layman's language in 14 chapters, 533 pages, covering "fundamentals, deeper understanding, technologies, and applications", with questions and answers at the end of each chapter. It is suitable for 3rd and 4th year undergraduates, or graduate courses, with contents related to pollution control, aerosols, fluid engineering, material sciences and engineering, and health technologies. To date, it is the first and most comprehensive text on air filtration using nanofiber technologies.

Dr An Liang elected Royal Society of Chemistry Fellow

Dr An Liang has been elected as a Fellow of the Royal Society of Chemistry (RSC), a professional society based in the United Kingdom with over 50,000 members worldwide. Founded in 1841, RSC is the largest organization in Europe for advancing the chemical sciences. RSC partners with industry and academia, advises governments on policy, and promotes the talent, collaboration, innovation, information and ideas that lead to great advances in science. The designation Fellow of the Royal Society of Chemistry (FRSC) is given to elected Fellows who have made significant contributions to the chemical sciences.

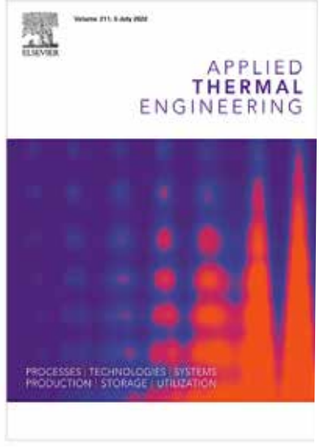
Becoming a Fellow of the Royal Society of Chemistry is a great recognition of Dr An's contributions to the advanced energy conversion and storage field. The names of newly elected Fellows are published each year in The Times (London).

Dr An Liang secured highly competitive national funding in NSFC/RGC Joint Research Scheme 2021/22

The RGC has recently announced the application results for the National Natural Science Foundation of China (NSFC) and the Research Grants Council (RGC) Joint Research Scheme in 2021/22 Exercise. A total of 30 research projects out of 256 eligible applications for a total sum of HK$34.75 million in this round of exercise were granted. In this highly competitive research grant, 2 full proposals submitted by The Hong Kong Polytechnic University (PolyU) were funded.

We are particularly proud that Dr An Liang was one of the two awardees. He will receive HK$1.176 million to conduct a joint project entitled "Construction of Bismuth-based Hierarchical Nano/microstructured Electrodes and their Applications in Photoelectrochemical Cells for Solar-driven Ambient Ammonia Production" with Professor Chen Rong at Chongqing University.

Dr An Liang appointed Subject Editor of prestigious Elsevier Journal



Dr An Liang has been appointed as Subject Editor by the Editor-in-Chief of Applied Thermal Engineering, Elsevier, which is a peer-reviewed academic journal with an impact factor of 5.295 and rankings of 6/60 in "Thermodynamics" Subject Category and 13/135 in "Mechanics" Subject Category in 2020 JCR Science Edition.

Applied Thermal Engineering disseminates novel research related to the design, development and demonstration of components, devices, equipment, technologies, systems and, in general, solutions involving thermal processes for the production, storage, utilization and conservation of energy, with a focus on engineering application. It is noted that papers concerned with the development and/or characterization of materials are only within scope if they include content relating to the implications of the employment of these materials in engineering applications, e.g., by considering their operation and/or performance within components, devices, equipment, technologies and/or wider thermal systems.

Establishment of Biel-PolyU Glass Research Joint Laboratory

Dr Ruan Haihui, Associate Professor of the Department of Mechanical Engineering at PolyU, has received an industrial support of 5 million HKD from the Biel Crystal (HK) Manufactory Limited for collaborative research on precision glass manufacturing.

The upcoming technologies have called for more usage of curved cover glasses in many areas including smartphones, wearable electronics, VR/AR glasses, and electronic vehicles. Such needs stem from the fact that human-machine interfaces must be transparent and anti-scratch. While glass covers can be thermoformed to have curved profiles that suit such needs, precision glass thermoforming is still extremely difficult owing to various quality issues arising from the lack of detailed know-how of the manufacturing process and in-depth knowledge in glass science.

In the past decade, the development of a manufacturing process for curved glass covers was extremely time-consuming and costly owing to enormous trials and errors; therefore, an upgrade to a computation-based process development protocol is urgently needed. To lay such a foundation for the industrial partner and the glass manufacturing industry, we establish the Biel-PolyU Glass Research Joint Laboratory (伯恩光學 - 香港理工大學玻璃研究聯合實驗室) to develop:

1. computational models that predict stress buildup, relaxation, and deformation in chemical strengthening,
2. computational protocols that assist the design of molds to compensate form errors due to shrinkage and chemical strengthening, and
3. novel molding materials and mold manufacturing technology that keep the transparency of thermoformed glass and ensure high-volume production.

ME Young Scholar secured Environment and Conservation Fund to conduct research on smart robot

Dr Henry Chu Kar Hang, Assistant Professor, Department of Mechanical Engineering (ME), has secured a fund from the Environment and Conservation Fund (ECF) for the research project "GPS-assisted Smart Robot with Self-exploration Ability for Litter Pick-up and Sorting on Curved Hillsides".

Robots have been serving us in many sectors to improve the quality of our lives. Nevertheless, majority of commercial robots mainly focus on applications for indoor use with large market sizes, opening a gap in some less explored areas. In this project, Dr Chu and his research team will develop a first-of-a-kind litter picking robot and its supporting system to work alongside with cleaning workers to reduce their workload and the risk of injury, while preserving the natural scenery and environment in Hong Kong.

The Environment and Conservation Fund (ECF) was set up by the Government of the Hong Kong Special Administrative Region to provide funding support for educational, research and other projects and activities in relation to environmental and conservation matters. Every year, more than 170 applications are received, with only 25% of them are supported.

Dr Sun Yuxiang selected as Global Top Chinese Young Scholar in Artificial Intelligence

On April 28, 2022, the world's first list of High Potential AI Chinese Young Scholars released by Baidu was officially announced. Dr Sun Yuxiang, a young scholar from PolyU ME, was included into the list (in the field of AI+X, a total of 50 young scholars from all over the world were selected).

According to reports, the 150 AI Chinese Young Scholars are from 98 top universities or institutions around the world. The top 10 universities or institutions with the most selected young scholars are Tsinghua University (8 scholars), Google (8 scholars), Chinese Academy of Sciences (7 scholars), Microsoft (including Microsoft Research Asia, 7 scholars), University of Hong Kong (4 scholars), Shanghai Jiao Tong University (3 scholars), Carnegie Mellon University (3 scholars), University of California San Diego (3 scholars), Columbia University (3 scholars), Facebook (3 scholars).

ME Young Scholar secured Innovation and Technology Fund to conduct research on autonomous driving

Dr Sun Yuxiang has been awarded a HK$899,300 Innovation and Technology Fund (ITF) grant by the Hong Kong Innovation and Technology Commission (ITC) for a research project entitled "A Study on RGB-Thermal Adaptive Fusion-based Semantic Understanding of Complex Day-and-Night Environments for Autonomous Driving". ITC also provides additional full financial support for this project for up to 4 research talents including research assistants (up to HK$21,000 per month) and postdoctoral research fellows (up to HK$32,000 per month).

Semantic understanding of traffic environments is important to ensure safe driving of autonomous vehicles. It can tell a self-driving car which pixels correspond to free spaces or obstacles in the pictures taken by an on-vehicle visual camera, so that the car can effectively avoid obstacles and safely navigate. However, the current semantic understanding solutions usually use RGB visible-light cameras. When the ambient light is insufficient at night, or there are glares caused by on-coming headlight, the existing solutions are difficult to produce satisfactory results. To address this problem, this project proposes to design a solution based on adaptive fusion of RGB and thermal images, so that robust semantic understanding could be achieved in complex day-and-night environments. It is very encouraging to see young scholar from our department to be funded by important funding of ITC to conduct research in cutting-edge technologies.

Dr Sun Yuxiang appointed New Associate Editor of prestigious IEEE Journal

Dr Yuxiang Sun has been appointed as a new Associate Editor by the Editor-in-Chief of IEEE Robotics and Automation Letters (RA-L). The first appointment term is three years and can be renewed on July 31, 2024. The editorial board of this journal is composed of world-renowned scholars in the robotics research community.

Published by IEEE, RA-L is a leading international journal dedicated to reporting significant theoretical findings and application case studies in areas of robotics and automation. It provides a timely and concise account of innovative research ideas and application results. RA-L publishes papers on all aspects of robotics, featuring interdisciplinary research from electrical engineering, mechanical engineering, control systems, artificial intelligence, computer science, and other fields.

Dr Sun has been working in the area of robotics and artificial intelligence over the years. His research group in PolyU has been dedicated to autonomous driving, which is an emerging direction that has attracted increasing attention from both academia and industry.

Student Accomplishments

ME PhD students clinched Top Awards in Faculty 3MT Competition

Two research students representing the Department of Mechanical Engineering (ME) won the Champion, First Runner-up and People's Choice Award in the Three Minute Thesis (3MT) Competition 2022 organized by the PolyU Faculty of Engineering.

On 30 June 2022, the PolyU Faculty of Engineering held the 3MT Competition. Seven affiliated departments nominated their research students to participate in it. The participants each delivered a high-impact brief presentation within 3-minute. Most of them demonstrated good academic pitching skills. A panel of judges by representatives from the seven affiliated departments was formed and selected the best presenters.

We are very proud of the outstanding performance by the PolyU ME PhD students, ECCEL VELLWOCK Andre and LABAZANOVA Luiza, stood out from the rest, triumphed in the competition. Andre won the Champion and People's Choice Award. Luiza won the First Runner-up. Andre is currently a PhD student in ME under the supervision of Dr Yao Haimin. "Anything fishy?" is the title about his research project for this competition. Luiza is a PhD in ME supervised by Dr Navarro-Alarcon David. The title about her research project is "Self-Reconfigurable Soft-Rigid Robots with Variable Morphology".

ME students won Best Paper Award in 3rd Asian Pacific Symposium on Technology of Plasticity

A team of a PhD and a MSc (dissertation) students from ME won the Best Paper Award at the 13th Asian Workshop on Micro/Nano Forming Technology (2021) and the 3rd Asian Pacific Symposium on Technology of Plasticity (AWMFT & APSTP 2021) held on 3 to 6 Nov 2021 in Shanghai, China. The team members, ZHENG Junyuan (PhD) and HU Dien (MSc dissertation), supervised by Prof. FU Mingwang, presented a paper entitled "Interactive Effect of Grain Size and Grain Orientation on the Micro-scaled Deformation Behaviors of Brass Foil".

The conference was organized by Shanghai Jiao Tong University, Harbin Institute of Technology, and the Hong Kong Polytechnic University, and also co-organized by the China Society for Technology of Plasticity, CMES, the Japan Society for Technology of Plasticity, the Korean Society for Technology of Plasticity and the State Key Laboratory of Mechanical System and Vibration. The event provided a great opportunity and platform to share valuable ideas and communicate with both academic and industrial scientists around the world working on the cutting-edge knowledge and novel technologies of plasticity.

ME MPhil student received Young Researcher Award in CNERC Annual Technical Symposium 2021

Samantha LEE Hoi Yin, a MPhil student of ME, won the Young Researcher Award in the Chinese National Engineering Research Centre for Steel Construction (CNERC) Annual Technical Symposium 2021 held on 30 September 2021 at PolyU. Samantha presented the research on "Automatic vision-based seam detection and tracking system for robotic welding/sealing planning" at the symposium.

The CNERC Annual Technical Symposium 2021 is a technical symposium organized by the CNERC aiming at promoting technological development, sharing and exhibiting the findings and accomplishments among researchers of CNERC projects. Through applied engineering research on steel construction, the CNERC aims to capitalize on huge potentials offered by construction professionals in Hong Kong to further enhance socio-economic development through technological advancement in sustainable infrastructure development.

Samantha is under the supervision of Dr David Navarro-Alarcon in ME conducting research in the Robotics and Machine Intelligence Laboratory. Her research interest focuses on computer vision and collaboration in multi-perceptual robots.

ME MPhil students won 2nd Runner-up at IET Young Professionals Exhibition & Competition 2021

A team of 2 MPhil students from the Department of Mechanical Engineering (ME) of The Hong Kong Polytechnic University (PolyU) won the 2nd Runner-up (Postgraduate Section) for their outstanding performance at the Young Professionals Exhibition and Competition held on 1 Aug 2021.

The team members, Daniel Kwong Tak Chun and Tommy Tsoi Man Ho, supervised by Dr Tracy Choy Yat Sze, competed with other local universities by a project "A Method for Online Auditory Assessment and Therapy on Pattern Recognition under COVID-19 Pandemic". The project was concerned with designing a remote acoustic control method for health services through online conferencing software.

The Young Professionals Exhibition & Competition (YPEC) is an annual event organized by the Younger Members Section of the Institution of Engineering and Technology Hong Kong (IET Hong Kong). The YPEC acts as a dynamic platform for prospective or young engineers to exhibit their engineering projects with presentations and exhibitions. The YPEC 2021 themed "Transformer" aimed for bringing in new ideas to foster the transformation into a brand-new era.

Department Activities and Development

Outstanding Alumni Award of PolyU Department of Mechanical Engineering 2022

Three distinguished graduates are awarded the "Outstanding Alumni Award of PolyU Department of Mechanical Engineering 2022" in recognition of their professional/entrepreneurial achievements and significant contributions to the Department, PolyU and the wider community. Their remarkable achievements and valuable contributions have earned them well-deserved honour and respectful recognition.

Outstanding Alumni Award in Professional and Community Service Achievements of PolyU Department of Mechanical Engineering

Ir Prof. Yuen Pak Leung

Immediate Past President
The Hong Kong Institution of Engineers

Higher Diploma in Mechanical Engineering, 1979

Outstanding Young Alumni Award in Community Service Achievement of PolyU Department of Mechanical Engineering

Miss Lui Ka Wing, Winky

Electrical and Mechanical Engineer
Electrical and Mechanical Services Department, HKSAR Government

MSc in Mechanical Engineering, 2019
BEng (Hons) in Mechanical Engineering, 2015

Outstanding Young Alumni Award in Entrepreneurial Achievement of PolyU Department of Mechanical Engineering

Dr Wang Lei, Bruce

Founder and CEO
EcoFlow Inc.

BEng (Hons) in Mechanical Engineering, 2010

Appointment of Head and Associate Heads of Department of Mechanical Engineering

Prof. SU Zhongqing assumes the position of Head of Department of Mechanical Engineering with effect from 1 July 2021.

At the same time, Dr ZHANG Peng is appointed as the Associate Head overseeing teaching and learning development of the Department.

Dr TANG Hui is the Associate Head in charge of all research matters and serves as Chairman of the Departmental Research Committee (DRC).

Prof. SU Zhongqing

Head and Professor

Dr ZHANG Peng

Associate Head and Associate Professor

Dr TANG Hui

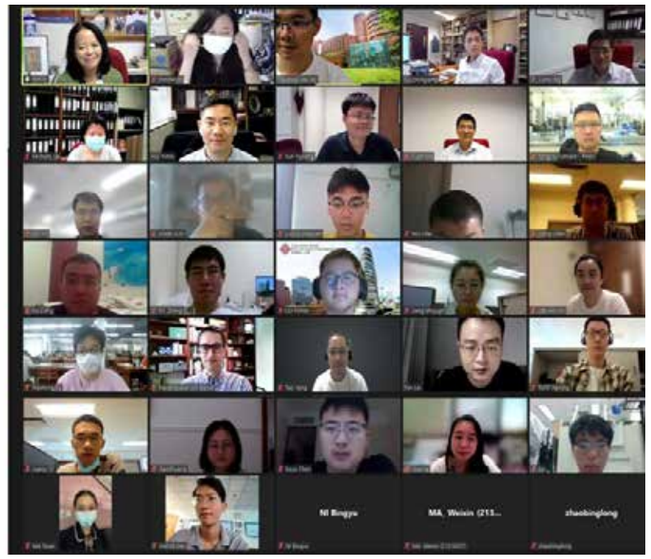
Associate Head and Associate Professor

ME surges in US News Best Global Universities and THE subject rankings

In the latest 2022 Best Global Universities Rankings released by US News on 26 October, PolyU jumped from 170th last year to 124th among the top institutions around the world. According to the rankings, the University is also the fourth best university in Hong Kong and 15th in Asia. We are very pleased to see that PolyU's Mechanical Engineering subject rose by three places to 12th which was ranked number one in Hong Kong.

Furthermore, in the Times Higher Education (THE) World University Rankings 2022 by Subject published in October 2021, the Department surged from 75th last year to 51st in Mechanical & Aerospace Engineering. The rankings of THE are based upon five key criteria, including teaching, research, citations, industry income and international outlook.research and consultancy, and strategic plans.

Warmest welcome to our Fresh Research Students!



In the new academic semester, we are delighted to welcome 28 newly admitted research students to the PolyU Department of Mechanical Engineering.

Led by the Department Head Prof. SU Zhongqing, fresh research students attended an online orientation in the morning on 27 Aug 2021. Training our students not just professionals of its field but leaders of the global mindset and forward vision has been the agenda of the department.

Dr Tang Hui, Director of Research Committee (DRC) Chairman and Associate Head (Research), introduced the department's 6 research areas – Advanced Materials and Processing, Aerospace Engineering, Clean Energy and Energy Storage, Robotics and Control, Sound and Vibration, Thermofluids and Combustion. They all focus on challenges faced by our society and globe in the decades to come.

Dr David Navarro-Alarcon, Research Student Liaison Officer, is taking care of coordination among all research students in the department. Dr Ma Yuan and Dr Sun Yuxiang, Seminar Coordinators, are inviting guest speakers to broaden students' exposure to the latest research and technologies. Students were thrilled to learn about the dynamic learning activities – ME Webinar Series, Research Sharing Talks, ME Research Presentation Competition.

Finally, Ms Lily Tam, DRC Secretary and Administrative Support Group Leader, delivered a comprehensive introduction of the study programme and pattern, examination and grading, studentships and fellowships, funding and support, etc.

The students' responses were positive and enthusiastic. We can assure them they will have a supportive, knowledge-oriented, interactive approach experience in their studies.

108th Departmental Advisory Committee Meeting

The 107th Departmental Advisory Committee (DAC) meeting was held online on 18 March 2022, under the chairmanship of Ir Dr Angus HW Cheung, Chief Executive Officer of Aerovision Technology Limited. We were grateful to have new committee members joining us. They were Dr Vanessa Au (Principal Environmental Protection Officer (Regional West), Environmental Protection Department, HKSAR), Prof. Chen Guohua (Chair Professor), Miss Chan Hoi Yi (Full-time BEng Student), Miss Jiang Qian (Full-time PhD Student).

The meeting kicked off with the Head Prof. Su Zhongqing's report on the latest updates of the Department. Following up on the 107th DAC meeting, various measures and actions have been taken. Responses to the last DAC advice were summarized in this meeting. Since the last DAC, the Department has organized a number of key events, received remarkable research achievements, surged in world rankings by ME subject. The growth and development in various aspects were shared in the meeting. On the other hand, we reviewed the student intake, graduate employment, budget and staffing.

It was a very fruitful meeting as members, with their wide range of expertise, had provided valuable advice and constructive suggestions to the Department for future development in teaching and learning, research and consultancy, and strategic plans.

ME Staff honoured for 2021 Long Service Award

Colleagues of the PolyU Department of Mechanical Engineering have always been devoting themselves to the development of ME. This year, the Department Head, on behalf of the University, paid tribute to long-serving staff members for their loyal and committed service over the years.

Congratulations to the awardees and heartfelt thanks for their years of dedication and devotion which have marked the achievements of the Department.

Length of Service	Name	Post Title
15 years	Prof. Fu Mingwang	Associate Director of Research Institute for Advanced Manufacturing, Professor
20 years	Ir Elsa Tang	Senior Instructor

7th ME Research Presentation Competition

The 7th PolyU Mechanical Engineering Research Presentation Competition was successfully held at the Lecture Theatre in the Jockey Club Innovation Tower, PolyU, on 7 Jan 2022. It is an annual event for research students to display their research project results and share knowledge with the PolyU community. The competition emphasized academic pitching skills, with an aim to train research students to explain academic ideas to peers and non-experts clearly. This year, we invited 13 academics from 3 main discipline areas (Control, Acoustics and Dynamics; Materials and Solid Mechanics; Thermofluids and Combustion) to form a panel of judges to select the best presenters. Besides, we welcomed other research students and PolyU staff members to join the event and vote for the People's Choice award.

Nineteen research student participants each delivered a high-impact brief in a 3-minute presentation. With their professional and animated presentations, those academic and technical terms were no longer distant to the layman. Most of the participants demonstrated outstanding academic pitching skills. The panel of judges was impressed by the ever-improving performance of the participants this year. Their presentations appealed to a large audience to vote for them. After the oral presentations, participants interacted with the audience in the research posters exhibition. Displayed posters not only highlighted their research project results, but it was also an occasion for participants to convey their ideas, communicate with viewers and professionals, and let their talents be known.

Congratulations to their fabulous presentations and excellent research work!

Champion
Student: Mr ARIF Muhammad Irsalan
Supervisor: Dr Randolph LEUNG
Title: Airfoil Tonal Noise Reduction by Means of Localized Flow-Induced Panel Vibration

Champion
Student: Mr GUO Jiaming
Supervisor: Dr JIAO Zengbao
Title: Precipitation Mechanisms and Mechanical Properties of New High-entropy Alloys Strengthened by Dual Precipitation

1st Runner-Up
Student: Mr FU Jin
Supervisor: Prof. FU Mingwang
Title: Additively manufactured metals and lattice structures by micro laser powder bed fusion for mechanical applications

2nd Runner-Up and People's Choice
Student: Ms JIANG Qian
Supervisor: Dr TANG Hui
Title: Optimization on therapeutical efficacy in magnetic hyperthermia

2nd Runner-Up
Student: Mr YANG Yi
Supervisor: Dr RUAN Haihui
Title: Investigation of glassy carbon structure formation--experiments and modeling

International Conference on Applied Nonlinear Dynamics, Vibration, & Control

The International Conference on Applied Nonlinear Dynamics, Vibration and Control (ICANDVC-2021) was initiated by the PolyU Department of Mechanical Engineering last year and successfully held in Zhuhai Charming Holiday Hotel during 23-25 Aug 2021. The conference name abbreviation ICANDVC implies "I See AND We See" which is in line with its objective. Through exchange and collaboration, we advanced the interdisciplinary R&D in applied nonlinear dynamics, applied vibration analysis and design, and applied control theory and methods across the globe. This is also the very core R&D activity of the research group – Nonlinear Dynamics, Vibration and Control led by Dr Jing Xingjian.

Amid the pandemic period, we however received some 200 paper submissions and over 150 registrations for the conference. Among the submissions, 88 papers were selected to publish in a Springer proceedings book "Advances in Applied Nonlinear Dynamics, Vibration and Control-2021" which was edited by Dr Jing and the other Co-chairs from Shanghai University and Nanjing University of Aeronautics and Astronautics. We had 10 invited sessions and 12 in-parallel sessions at the conference. There were 3 online and 3 onsite plenary speeches and 9 session keynotes covering all three main themes in nonlinear dynamics, vibration and control. Besides the on-site participants, we had more than 150 attendees from the Chinese mainland, Australia, the United Kingdom, Hongkong and other places via our synchronized online platform.

As a conclusion of the conference, we had 12 best presentation paper awards based on onsite marking by Session Chairs from 12 parallel sessions, 7 best paper awards and several outstanding paper awards for recognizing the great efforts and engagements of the conference attendees.