Department of Mechanical Engineering

The Hong Kong Polytechnic University

Hung Hom, Kowloon, Hong Kong

website: www.polyu.edu.hk/me

Annual Report 2022 / 2023

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

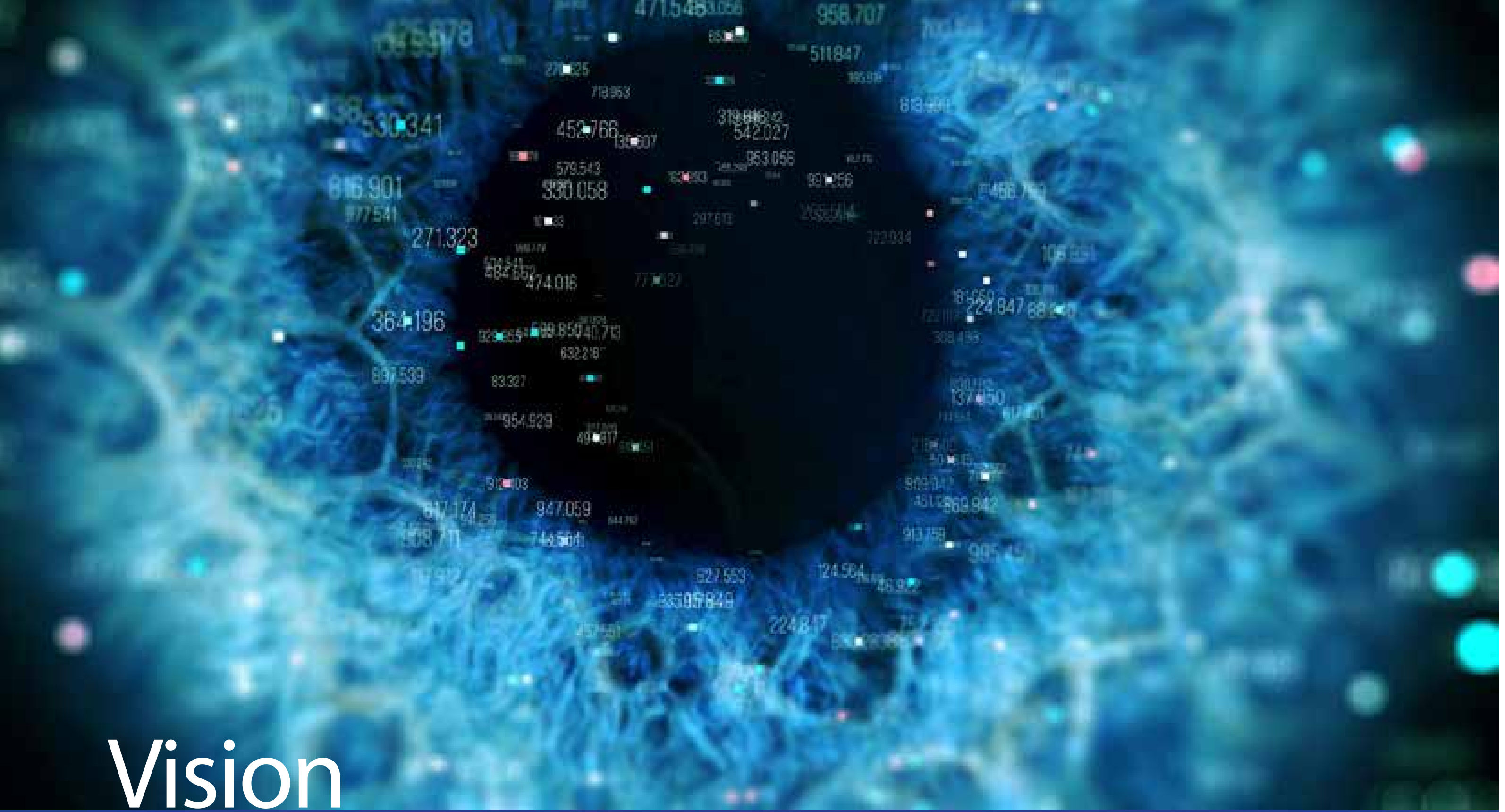
Department of MECHANICAL ENGINEERING

Annual Report 2022-2023

ANNUAL REPORT 2022-2023

Department of Mechanical Engineering
The Hong Kong Polytechnic University

Contents



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
Biological Mechanics and Materials Laboratory
Computational Aeroacoustics and Flow Physics Laboratory
Corrosion and Surface Technology Laboratory
Dynamics Laboratory
Fluid Mechanics 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
Thermal Science Laboratory
Thermodynamics Laboratory
Undergraduate Computing Laboratory
Water Tunnel Laboratory
Wind Tunnel Laboratory

Head's Message

The Department of Mechanical Engineering (ME) is dedicated to delivering a holistic and engaging educational experience to our students, while fostering a stimulating environment for our faculty members to excel in scientific discovery and innovation. At the core of our mission is the continuous and unwavering commitment to education and research. This report showcases the notable achievements of our faculty members in teaching and research, and our students in their learning endeavours throughout the reporting year of 2022/23.

Teaching and Learning

ME has been proactively engaging itself in teaching and learning enhancement activities, and created an excellent culture for promoting teaching innovation among a wide range of staff members. In this reporting period, ME has received or implemented several teaching grants, and initiated/strengthened few teaching innovations.

To name but a handful of many examples: the project "Use of Interactive Pedagogies" (01/07/2022-30/06/2023), which is led by Dr David Navarro-Alarcon and supported by Strategic Plan Fund 2021-22 (HK$100,000), has successfully engaged students in the learning process and created a dynamic classroom environment. Through the ongoing project "Development of a Constructive and Interactive "Hands-on" Robotics Laboratory in the Metaverse" that is supported by LTC Teaching Development Grant 2022-25 (HK$500,000), an innovative metaverse-powered virtual laboratory has been developed to enhance students' learning experience in robotics, physics, and engineering subjects.

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 Nov 2022, 21 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 addition, 3 other current ME academics have also been ranked for single recent year impact. Furthermore, Dr Zhang Xiao was listed again as one of the 12 academics from PolyU who have been acknowledged in the "Highly Cited Researchers (2022 version)" 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 actively involved in pursuing research collaborations, leading to the successful acquisition of several collaborative research projects. One of the notable achievements is the establishment of the Joint Research Centre for Advanced Manufacturing of High-Performance Micro/Meso Scaled Surface Functional Structures. Through a collaboration with Shanghai Jiaotong University under the Mainland/GBA Research Funding Scheme, we secured a set-up fund of HK$7.5 million for this centre. In addition, we have engaged in a science and technology project collaboration with Shenzhen University, South China University of Technology, and City University of Hong Kong. Furthermore, we have successfully secured four General Research Grants in collaboration with other institutions. These collaborations include partnerships with the Korea Advanced Institute of Science and Technology, Wuhan University of Technology, HKUST, and ESPCI, PSL Research University. Moreover, we have initiated a collaborative project with Huawei Technologies Co. Ltd., a leading technology company. This collaborative project aims to explore and develop innovative solutions in a specific area of interest.

To foster postdoctoral research exchanges and collaborations, we have established four Joint Postdoc Schemes in collaboration with non-local renowned institutions. These collaborations involve Tsinghua University, Fudan University, the National University of Singapore, and Peking University. In addition to these collaborations, we have partnered with other universities, including Shanghai Jiaotong University, Fudan University, Harbin Institute of Technology, and Huazhong University of Science and Technology, to recruit Research Assistants. These collaborations provide valuable opportunities for talented researchers to contribute to our research endeavours.

Our research reputation is further evidenced by the success in securing highly competitive research grants. The Research Grants Council announced in June 2023 the results of General Research Fund (GRF) and Early Career Scheme (ECS). Nine of our GRF/ECS proposals were funded in 2023/24 exercise and ME's success rate for the GRF was 36%. The total external fund secured by the Department in the fiscal year of 2022/23 was more than HK$74 million. Our research teams in a wide spectrum have 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 reporting year, our students and staff shined in various national and international competitions. A ME undergraduate team scored the Champion (Group Project Winner) of 2021/22 Best Final Year Environment Project, hosted by the Hong Kong Institution of Engineers (HKIE). Two ME PhD students received the Best Innovation Award in Cathay Hackathon 2022. Two ME teams were awarded the 1st Runner-up and Best AI Implementation Award in the AI x HK Opencup 2022. An undergraduate team won the Champion in Hong Kong Techathon 2023. A PhD and undergraduate team clinched the First Prize in "600 Light Year" in the 15th National University Student Social Practice and Science Contest on Energy Saving & Emission Reduction of 2022. Two PhD graduates won 2022 Runner-up Best Paper Award in Structural Health Monitoring awarded by ASME International.

Prof. Wang Zuankai was awarded the prestigious Croucher Senior Research Fellowship, BOCHK Science and Technology Innovation Prize and the "Problem Unveiling" Spark Award presented by Huawei. Prof. Chen Guohua was elected the Chairman of the World Chemical Engineering Council (WCEC). Prof. Cheng Li was elected the President-elect of the International Institute of Noise Control Engineering (I-INCE). Prof. Fu Mingwang was awarded the Royal Society Wolfson Visiting Fellowship. Dr Jiao Zengbao received the IAAM Scientist Award from the International Association of Advanced Materials (IAAM) and elected a Fellow of IAAM. I was elected a Distinguished Fellow of the International Institute of Acoustics and Vibration (IIAV). Dr Zhang Xiao received the Most Popular Cover Award at eScience Summit - New Energy Youth Session. Dr Ma Yuan was awarded the PolyU Young Innovative Researcher Award (YIRA) for 2023. Dr An Liang and our graduate Dr Wang Lei were elected the Young Technological Pioneers by the Hong Kong Young Scientists Association.

The start of a new academic year presents a blend of possibilities and hurdles. While certain difficulties endure, the prospects ahead shine just as brightly. As we glance toward the future, we remain steadfast in harnessing our remarkable talents in education, research, sharing knowledge, and engaging with the community.

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 Consortiums

- Consortium for Advanced Materials Research
- Consortium for Combustion and Pollution Control
- Consortium for Fluid-Structure Interactions
- 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
Chair 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
Assistant Director (Waste Reduction)
Environmental Protection Department, HKSAR

Mr Richard CW Chan, JP
Deputy Director
Trading Services
Electrical & Mechanical Services Department, HKSAR

Mr Chan Hing Keung
Chief of Operations Engineering Service & Innovation
MTR Corporation Limited

Dr Henry KH Chu
Associate Professor
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Mr Edmond Lai
Chief Digital Officer
Hong Kong Productivity Council

Ir Kevin CK Lau
Senior Director - Generation
CLP Power Hong Kong Limited

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

Dr Hui Tang
Associate Head & Associate Professor
Department of Mechanical Engineering
The Hong Kong Polytechnic University

Dr Xiao Zhang
Assistant 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

Prof Massimo Ruzzene
Acting Vice Chancellor for Research & Innovation and Dean of the Institutes
Slade Professor of Mechanical Engineering
Research & Innovation Office
University of Colorado Boulder

Dr Bruce L Wang
Founder and CEO
EcoFlow Inc.

Mr Lingang Zhu
Director, Structure and Stress Division
Shanghai Aircraft Design and Research Institute
Commercial Aircraft of China Ltd.

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 HM Yao
Departmental Learning Outcomes Assessment Committee	Dr HM Yao
Departmental Publicity Committee	Dr YS Choy
Space Allocation Committee	Prof. ZQ Su
Programme Committees	
• Departmental Undergraduate Programmes Committee	Dr HM Yao
• Departmental Postgraduate Programmes Committee	Dr ZB Jiao
• MSc in ME Award Committee	Dr ZB Jiao
Work-Integrated-Education Committee	Dr WO Wong
Departmental Health and Safety Committee	Dr Curtis Ng

Research Consortium Director

	Director
Consortium for Advanced Materials Research	Prof. MW Fu
Consortium for Combustion and Pollution Control	Prof. TL Chan
Consortium for Fluid-Structure Interactions	Dr H Tang
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 2023)

Head and Chair 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
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

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

Chair Professor of Thermal and Environmental Engineering

CHAO Yu Hang, Christopher (Prof.) 趙汝恒教授 BSc(Eng), MS, PhD, FHKEng, FHKIE, FASME, FIMechE, FCIBSE, FISIAQ	Aerosol and gaseous contaminant transport in indoor environments; Solar and waste heat driven cooling and refrigeration system; Passive radiative cooling; Nanofluid heat transfer; Bio inspired heat transfer; Fire dynamics and combustion

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

Chair Professor of Advanced Manufacturing

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

Chair Professor of Thermal-Fluid and Energy Engineering

WANG Liqiu (Prof.) 王立秋教授 PhD (UA); MEng (SDU); BEng (SDU)	Nature-inspired and microfluidics-enabled engineering; Soft and smart manufacturing; Soft materials; Thermal-fluids; Energy

Chair Professor of Nature-Inspired Engineering

WANG Zuankai (Prof.) 王鑽開教授 PhD (RPI); MS (CAS); BS (JLU)	Nature-inspired surfaces and materials, additive manufacturing, energy harvesting, fluid dynamics, soft matter, interfaces and surfaces

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
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
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
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
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
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
YU Xiang (Dr) 余翔博士 BEng; PhD (HK PolyU)	Vibro-acoustic modelling; Acoustic metamaterial; Noise and vibration control; Advanced functional material; Lattice structure and porous material; Hearing and auditory perception; Active noise cancellation; Smart actuator; Acoustic black hole
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	
JIANG Mengnan (Dr) 蔣孟男博士 PhD (DUT); MS (XJTU); BS (HUC)	Heat and mass transfer under extreme environments, refrigeration, interface and surface, and drag reduction
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
LI On Nei, Annie (Miss)	Executive Officer
CHENG Sze Ting, Joanne (Ms)	Executive Officer
LAW On Ki (Miss)	Assistant 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
CHOI Tsz Kwan, Jasmine (Ms)	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
NG Pak Kwan, John (Mr)	Assistant Technical Officer
YAN Chiu Hang (Mr)	Assistant Technical Officer

Staff Movement (1 July 2022 – 30 Jun 2023)

Concurrent Appointment
Dr HM Yao, appointed as Associate Head (Teaching)
Prof. ZK Wang, appointed as Associate Vice President (Research and Innovation)

Promotion
Prof. ZQ Su, promoted to Chair Professor
Prof. MW Fu, promoted to Chair Professor
Dr Henry Chu, promoted to Associate Professor
Dr ZB Jiao, promoted to Associate Professor

New Appointment
Prof. LQ Wang, Chair Professor
Prof. ZK Wang, Chair Professor
Dr X Yu, Assistant Professor
Dr MN Jiang, Research Assistant Professor
Miss Annie Li, Executive Officer
Miss Onki Law, Assistant Officer
Ms Jasmine Choi, Technical Officer

Retirement
Prof. TL Chan, Professor
Dr Y Liu, Associate Professor

Staff Departure
Prof. GH Chen, Chair Professor
Prof. Wallace Leung, Distinguished Research Professor
Dr P Zhang, Associate Head and Associate Professor
Miss Hilary Yuen, Executive Officer
Mr CY Chan, Assistant Technical Officer

Research Personnel

Research Staff

Research Fellow (Full-time)

Qin Xusong (Dr) 覃 旭 松	PhD, The Hong Kong University of Science and Technology, HK

Postdoctoral Fellow (Full-time)

AL MAHMUD Tarek Hasan (Dr) 哈 森	PhD, University of Science and Technology of China, China
Bi Xiaobo (Dr) 毕 晓 波	PhD, University of California San Diego, USA
Chen Bohan (Dr) 陈 博 涵	PhD, Yanshan University, China
Chen Yafeng (Dr) 陈 亚 枫	PhD, Hunan University, China
Cui Miaomiao (Dr) 崔 苗 苗	PhD, City University of Hong Kong, HK
Deng Fuquan (Dr) 邓 福 泉	PhD, Xi'an Jiaotong University, China
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
Gao Shouwei (Dr) 高 寿 伟	PhD, City University of Hong Kong, HK
Ge Bingcheng (Dr) 葛 炳 成	PhD, Yanshan University, China
Han Lei (Dr) 韩 雷	PhD, Beihang University, China
Hu Yunxia (Dr) 胡 云 霞	PhD, Harbin Institute of Technology, China
Huang Jihui (Dr) 黄 纪 绘	Doctor, Shanghai Jiao Tong Univeristy, China
Li Cuicui (Dr) 李 翠 翠	PhD, Northeastern University, China
Lian Jiaoyuan (Dr) 连 娇 愿	PhD, Zhejiang University, China
Lin Cong (Dr) 林 聪	PhD, Chongqing University, China
Lin Dongmei (Dr) 林 冬 梅	PhD, The Hong Kong Polytechnic University, HK
Lin Zhiwei (Dr) 林 志 伟	Doctor's degree of Engineering, Chongqing University, China
Liu Fatang (Dr) 刘 发 堂	PhD, Harbin Institute of Technology, 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) 马 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
RAZA Hassan (Dr)	PhD, The Hong Kong Polytechnic University, HK
Shao Xiaodong (Dr) 邵 小 东	PhD, University of Genoa, Italy
Shen Qingliang (Dr) 沈 庆 凉	PhD, Northwestern Polytechnical University, China
Shi Xingyi (Dr) 石 星 逸	PhD, The Hong Kong Polytechnic University, HK
Song Lukai (Dr) 宋 鲁 凯	PhD, Beihang University, China
Wang Jixiang (Dr) 王 霁 翔	PhD, Beihang University, China
Wang Kai (Dr) 王 凯	PhD, Hunan University, China
Wang Wei (Dr) 王 伟	PhD, Northwestern Polytechnical University, China
Wang Xin (Dr) 王 鑫	PhD, Southeast University, China
Wang Xuchao (Dr) 王 旭 超	PhD, Shandong University, China
Wang Zhijie (Dr) 王 志 杰	PhD, Yanshan Univeristy, China
Wei Linyang (Dr) 魏 琳 扬	PhD, Harbin Institute of Technology, China
Wong Man Chung (Dr) 黃 文 聰	PhD, The Hong Kong Polytechnic University, HK
Xiao Lei (Dr) 肖 蕾	PhD, Tongji University, China
Xu Huaiyuan (Dr) 徐 怀 远	Doctor, Tianjin Univeristy, China
Xu Wanghuai (Dr) 徐 王 淮	PhD, City University of Hong Kong, HK
Xu Zeyu (Dr) 徐 泽 宇	Doctor, University of Science and Technology of China, China
Xue Lufeng (Dr) 薛 陆 丰	PhD, Texas A&M University, USA
Yang Heng (Dr) 杨 恒	PhD, Northwestern Polytechnical University, China
Yang Jing (Dr) 杨 静	PhD, Beijing University of Chemical Technology, China
Yu Ho Man (Dr) 余 浩 文	PhD, The Hong Kong Polytechnic University, HK
Zhang Baoping (Dr) 张 宝 萍	PhD, Fudan University, China
Zhang Hanyin (Dr) 张 涵 茵	PhD, South China University of Technology, China
Zhang Hongfu (Dr) 张 洪 福	PhD, Harbin Institute of Technology, China
Zhang Huanhuan (Dr) 张 欢 欢	PhD, City University of Hong Kong, HK
Zhang Ruihan (Dr) 张 瑞 寒	PhD, The Hong Kong University of Science and Technology, HK
Zheng Huanxi (Dr) 郑 焕 玺	PhD, City University of Hong Kong, 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
Zou Xiaohong (Dr) 邹 小 红	PhD, Nanjing TECH University, China

Research Associate (Full-time)

AKHTAR Awais (Dr)	PhD, The Hong Kong Polytechnic University, HK
ARIF Muhammad Irsalan (Dr)	PhD, The Hong Kong Polytechnic University, HK
Cheng Junye (Dr) 程 俊 业	PhD, City University of Hong Kong, HK
Duan Anqing (Dr) 段 案 清	PhD, Beihang University, China
ESAN Oladapo Christopher (Dr)	PhD, The Hong Kong Polytechnic University, HK
Jiang Zhiyan 姜 知 言	MSc, The Hong Kong Polytechnic University, HK
Qiu Shi (Dr) 邱 实	PhD, Beihang University, China

Wang Yubao (Dr) 王玉宝	PhD, Shandong University, China
Wang Zhaokun (Dr) 王兆坤	PhD, The Hong Kong Polytechnic University, HK
Zhou Bingchen (Dr) 周冰晨	PhD, The Hong Kong Polytechnic University, HK

Research Associate (Part-time)

Wong Chun Nam (Dr) 黄振南	PhD, University of Maryland, Baltimore Country, USA
Yang Wentao 杨文韬	MSc, City University of Hong Kong, HK

Research Assistant (Full-time)

Cai Wang 蔡旺	BEng, University of Science and Technology Beijing, China
Chen Junjie 陈俊杰	BEng, Northwestern Polytechnical University, China
Dang Yanpei 党炎培	BEng, Zhengzhou University of Light Industry, China
DELA CRUZ Xavier Roi Mangulabnan	BEng, The Hong Kong Polytechnic University, HK
Feng Zhenyong 冯振勇	MSc, Northwestern Polytechnical University, China
Han Wenkai 韩汶凯	MSc, Guangzhou University, China
Jiang Pengcheng 蒋鹏程	MSc, Chongqing University, China
Lam Kai Yin 林啟賢	BEng, The Hong Kong Polytechnic University, HK
Lee Hoi Yin 李凱然	BEng, The Hong Kong Polytechnic University, HK
Li Jiayi 李嘉怡	MSc, National University of Singapore, Singapore
Li Jinwang 李金汪	BEng, Chongqing University, China
Li Wei 李伟	MSc, University of Science and Technology Beijing, China
Lin Xiaorong 林晓蓉	Master in Materials Science and Engineering, Harbin Instituteof Technology, China
Liu Zhuoyuan 刘卓远	MSc, The Hong Kong Polytechnic University, HK
Lo Yuen Wing 卢炫颖	BEng, The Hong Kong Polytechnic University, HK
Ng Kwok Leung 吳國良	BSc, City University of Hong Kong, HK
Pi Rendong 皮任东	MSc. Shandong University, China
RAI Sanjaya	BEng, The Hong Kong Polytechnic University, HK
Shi Yuting 施雨婷	Master of Science, Carnegie Mellon University, USA
Sun Hong 孙红	BEng, Northwestern Polytechnical University, China
Sun Ruqi 孙汝奇	PhD, The Hong Kong Polytechnic University, HK
Tang Xuyang 汤旭阳	MSc, Shanghai Jiao Tong University, China
Tian Guangzhi 田广智	MSc, The Hong Kong University of Science and Technology, HK
Wang Jiaxuan 王家轩	MSc, Beijing Institute of Technology, China
Wang Leizhi 王垒智	MEng, Nanjing Tech University, China
Wang Yan 王炎	BEng, University of Science and Technology of China, China
Wong Chun Kit 黄俊杰	BEng, The Hong Kong Polytechnic University, HK
Wu Na (Dr) 吴娜	PhD, Swiss federal institute of technology Zuricch (ETHz), Switzerland
Xie Yujie 谢玉洁	MSc, The Hong Kong Polytechnic University, HK
Xu Junju 许均菊	Bachelor of Nuclear Engineering and Technology, Sun Yat-sen university, China
Yu Pui Hin 余沛轩	BEng, The Hong Kong Polytechnic University, HK
Yuan Huanling 袁焕灵	MSc, University of Macau, Macau
Zeng Chiyu 曾驰宇	MSc, University College London, UK
Zhang Xinyu 张心宇	MSc, Dalian University of Technology, China

Research Assistant (Part-time)

An Shuowei 安烁威	MSc, Harbin Engineering 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
He Yi 何意	Master, Tongji University, China
Jiang Like 蒋力克	BEng, XiangTan University, China
LABAZANOVA Luiza	MSc, Skolkovo Institute of Science and Technology, Russia
Li Ying 李颖	MSc, Central South University, China
Liu Fayu 劉法鈺	Master, Sun Yat-sen University, China
Liu Jinan 刘津安	MSc, The Hong Kong Polytechnic University, HK
Liu Zhirui 刘志睿	BEng, Chang'an University, China
LYAPUNOV Nikolay	PhD student, The Hong Kong Polytechnic University, HK
Ma Siyao 马思遥	MSc, The University of Hong Kong, HK
Ma Wanyu 马婉玉	MSc, Harbin Institute of Technology, China
Sun Xiang 孙祥	MSc, Xi'an Jiaotong University, China
VICTOROVA Maria (Dr)	PhD, The Hong Kong Polytechnic University, HK
Wang Yiling 王逸凌	BEng, China University of Geoscience, China
Weng Qingsong 瓮青松	MSc, City University of Hong Kong, HK
Xuan Yanzhuang 宣彦庄	BEng, Nanjing Normal University, China
Yang Jianwei 杨建伟	MEng, Xiamen University, China
Yeung Wai Kin 杨伟坚	MSc, The Hong Kong Polytechnic University, HK
Yuen Oi Lam 阮爱琳	Bachelor of Education, The Open University of Hong Kong, HK
Zeng Yijun 曾奕鋆	Msc, The University of Science and Technology, China
Zhang Jingrao 张竞娆	BEng, Taiyuan University of Technology, China
Zhang Wei 张威	Master, Sun Yat-sen University, China
Zhu Yinggang 朱迎港	BEng, Southern University of Science and Technology, China

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

Chen Hongpeng 陈泓芃	MSc Student, The Hong Kong Polytechnic University, HK
Chung Hing Kit 鍾鑫傑	MSc Student, The Hong Kong Polytechnic University, HK
Hu Dien 胡迪恩	MSc Student, The Hong Kong Polytechnic University, HK
Li Jieming 李介明	MSc Student, The Hong Kong Polytechnic University, HK
Li Junxi 李俊曦	MSc Student, The Hong Kong Polytechnic University, HK
LIU Zhirui 刘志睿	MSc Student, The Hong Kong Polytechnic University, HK
Luo Guojie 雒国杰	MSc Student, The Hong Kong Polytechnic University, HK
Ouyang Peng 欧阳鹏	MSc Student, The Hong Kong Polytechnic University, HK
Wang Kai Chen 王恺忱	MSc Student, The Hong Kong Polytechnic University, HK
Wang Yibo 王意博	MSc Student, The Hong Kong Polytechnic University, HK
Yu Antong 余岸潼	MSc Student, The Hong Kong Polytechnic University, HK
Zhang Tanhao 张潭昊	MSc Student, The Hong Kong Polytechnic University, HK

Research Students (as at 30 April 2023)

PhD Student (Full-time/Part-time) 128

Male 73% | Female 27%

MPhil Student (Full-time/Part-time) 3

Male 67% | Female 33%

PolyU Research Postgraduate (RPg) education provides full-time PhD students with a range of admission scholarships, enabling them to pursue their research interests and achieve impactful goals. A number of competitive scholarships were awarded to outstanding ME research postgraduates.

Scholarship	Recipient	Chief Supervisor
Hong Kong PhD Fellowship Scheme (HKPFS)	GUO Xinze	Prof. SU Zhongqing
	MA Ming	Prof. SU Zhongqing
	MA Weixin	Prof. SU Zhongqing
	TANG Mingcong	Dr AN Liang
PolyU Presidential PhD Fellowship Scheme (PPPFS)	CHEN Keyu	Dr David NAVARRO-ALARCON
	FENG Yuchao	Dr CHU Kar Hang Henry
	HUO Xiaoyu	Dr AN Liang
	LI Wenzhi	Dr AN Liang
	LIU Yifan	Prof. CHENG Li
	REN Xiuyun	Dr YU Xiaoliang
	WU Yifei	Dr RUAN Haihui

The Department has been actively engaged in pursuing research collaborations, providing students with opportunities to acquire professionally recognized qualifications from the vibrant teaching and learning approach. During this reporting period, we have successfully secured several collaborative research training and Joint PhD programmes.

Research Collaborations	Collaborative Institution
Collaborative Training Programme	EIT Institute for Advanced Study
	Southern University of Science and Technology
	Songshan Lake Materials Laboratory
Joint PhD Programme	Harbin Institute of Technology
	Northwestern Polytechnical University
	Xi'an Jiaotong University

Honours & Awards

(1 July 2022 – 30 Jun 2023)

Prof. CHENG Li
- President-elect of the I-INCE (International Institute of Noise Control Engineering)

Prof. FU Mingwang
- Royal Society Wolfson Visiting Fellowship
- Faculty of Engineering Research Grant Achievement Award 2021

Prof. SU Zhongqing
- Distinguished Fellow of the International Institute of Acoustics and vibration (IIAV)

Prof. WANG Zuankai
- Croucher Senior Research Fellowship
- BOCHK Science and Technology Innovation Prize
- "Problem Unveiling" Spark Award presented by Huawei

Dr AN Liang
- Research & Scholarly Activities (Outstanding Young Researcher), Faculty Awards for Outstanding Achievement 2021
- Young Technological Pioneer, Hong Kong Young Scientists Association
- Faculty of Engineering Research Grant Achievement Award 2021
- Faculty of Engineering Merit Award in Teaching (Individual) 2022

Dr JIAO Zengbao
- Fellow of IAAM (International Association of Advanced Materials)
- IAAM Scientist Award, International Association of Advanced Materials
- Outstanding Reviewer Award 2021, Journals of Acta Materialia and Scripta Materialia
- Outstanding Reviewer Award 2022, Journals of Acta Materialia and Scripta Materialia
- Faculty of Engineering Research Grant Achievement Award 2021
- Faculty of Engineering Merit Award in Research and Scholarly Activities: Outstanding Young Researcher (Individual) 2022

Dr MA Yuan
- PolyU Young Innovative Researcher Award (YIRA) 2023

Dr RUAN Haihui
- Faculty of Engineering Merit Award in Knowledge Transfer: Industry (Individual) 2022

Dr TANG Hui
- Faculty of Engineering Merit Award in Research and Scholarly Activities: Outstanding Researcher (Individual) 2022

Dr YAO Haimin
- Vebleo Fellow

Dr ZHANG Xiao
- Most Popular Cover Award at eScience Summit - New Energy Youth Session

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
- Co-chair, Noise & Vibration Subcommittee, Hong Kong Institute of Acoustics
- Co-chair, Professional Development & Education Subcommittee, Hong Kong Institute of Acoustics

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

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

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
- Fellow of the Hong Kong Institute of Engineers (FHKIE)
- Fellow of Royal Society Wolfson Visiting Fellow

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)
- Distinguished Fellow of International Institutes of Acoustics and Vibration

Prof. WANG Zuankai
- Fellow of International Society of Bionic Engineering (ISBE)
- Fellow of the Hong Kong Academy of Engineering Sciences (HKAES)
- Croucher Senior Research Fellowship
- Research Grants Council (RGC) Senior Research Fellow

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

Dr JIAO Zengbao
- Fellow of International Association of Advanced Materials (FIAAM)

Dr WU Maochun
- Fellow of International Association of Advanced Materials (FIAAM)

Dr Yao Haimin
- Vebleo Fellow

Dr Zhang Xiao
- Fondazione Oronzio e Niccolò De Nora Fellowship

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 AN Liang
- Associate Editor, Journal of Energy Storage

Dr CHENG Song
- Guest Editor, Energies

Dr CHOY Yat Sze
- Section Editor, Journal of Acoustics
- Section Editor, Journal of Low Frequency Noise Vibration and Active Control

Dr Jiao Zengbao
- Advisory Board Member, MetalMat
- Editorial Board Member, Acta Metallurgica Sinica
- Editorial Board Member, International Journal of Minerals, Metallurgy and Materials
- Associate Editor, Materialia
- Associate Editor, Frontiers in Materials
- Editorial Board Member, Materials Research Letters
- Guest Editor, Frontiers in Materials

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 MA Yuan
- Guest Editor, Microsystem Technologies

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

Dr WU Maochun
- Editorial Board Member, Acta Physico - Chimica Sinica

Dr ZHANG Xiao
- Guest Editor, Energies
- Editorial Board Member, SmartMat
- Editorial Board Member, Research and Application of Materials Science

Distinguished Lecture / Keynote Speech at International Conference / Symposium

Prof. CHENG Li
- "Micro-perforation absorption in Complex Acoustic Environment", International Symposium on the Material Acoustics, Technologies and Industrialization, Apr 20-22, 2023, Changshu, China.
- "Electro-mechanically Enhanced Acoustic Black Hole Effects", 4th International Conference on Vibration and Energy Harvesting Applications, Apr 14-16, 2023, Xiangtan, China,
- "Acoustic Black Holes for Wave Manipulation and Advanced Structural Design", International Conference on Vibration Problems, Feb 5-9, 2023, Doha, Qatar.
- "Flexural wave manipulations through Acoustic Black Hole design for vibration and sound control applications", 3rd International Conference on Acoustics and Vibration, Dec 19-21, 2022, Sousse, Tunisia.
- "Sound and Vibration Research", 2022 International Conference and Exhibition on Audio-engineering Technology, Nov 5-6, 2022, Shenzhen, China.
- "Acoustic Black Hole Effects for Vibroacoustic Applications", 19th Asia Pacific Vibration Conference, Nov 1-3, 2022, Qingdao, China.
- "Vibro-acoustic Modeling and Design with Integrated Control Elements", 24th International Congress on Acoustics, Oct 24-28, 2022, Gyeongju, South Korea.

Prof. FU Mingwang
- "Damage and fracture in multi-scaled deformation-based manufacturing", 14th International Conference on Numerical methods in industrial forming processes (Unmiform), AGH University of Sci and Tech., Jun 25-29, 2023, Krakow, Poland.
- "Size effects (SE) and SE affected process behaviors and performances in in multi-scaled materials processing and deformation-based manufacturing", 4th Asian Pacific Symposium on Technology of Plasticity, May 15-19, 2023, Gangneung, Republic of Korea .
- "Progressive forming of bulk microparts by directly using sheet-metals: Issues and challenges", Asian Society for Precision Engineering and Nanotechnology (ASPEN022) Nov 1-18, 2022, Singapore.

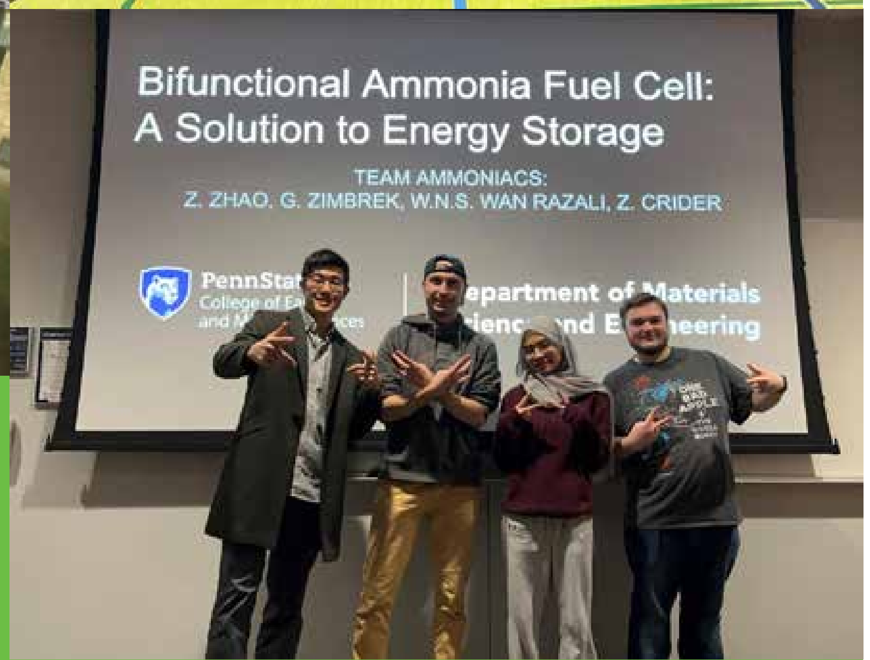
Prof. SU Zhongqing
- Conference Chair at SPIE Conference on Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, Mar 12-16, 2023, Long Beach, CA., USA.
- Conference Co-chair at Health Monitoring of Structural and Biological Systems, SPIE Conference Series on Smart Structures/NDE, Mar 12-16, 2023, Long Beach, CA., USA.
- "Model-driven quantitative nonlinear ultrasonics", the 9th Asia-Pacific Workshop on Structural Health Monitoring (APWSHM-2022), Dec 7-9, 2022, Cairns, Queensland, Australia.

Prof. WANG Liqiu
- "Small is big: magic nano droplet, 9th Nanotech & Nanomaterials Research Conference; Jun 12-14, 2023; Rome, Italy.
- "Light or fiber touch", 8th International Conference on Nanotechnology; Oct 31–Nov 2, 2022; Boston, USA.

Prof. WANG Zuankai
- "Nature-inspired Surfaces of Things (SOT)", Micro Flow and Interfacial Phenomena Conference, June 19-21, 2023, Evanston, Illinois, USA.
- "Nature-inspired Surfaces of Things (SOT)", 18th IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE NEMS 2023), May 14-17, 2023, Jeju, South Korea.

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 Three specialisms: • MSc in Mechanical Engineering (Aerospace Engineering) • MSc in Mechanical Engineering (Air/Noise Pollution Management) • MSc in Mechanical Engineering (Product Development and Analysis)	Mixed-mode (Self-financed)
Engineering Doctorate	Mixed-mode (Self-financed)

Student Enrollment

Programme	Year 1 Intake 2022/23	Total no. of Students 2022/23
Full-time BEng(Hons) Scheme in Mechanical Engineering	103	178
Full-time BEng(Hons) in Mechanical Engineering (including Double Degree students)	15	195
Full-time BEng(Hons) in Product Analysis and Engineering Design	10	40
Part-time BEng(Hons) in Mechanical Engineering	0	1
MSc/PgD in Mechanical Engineering	81	197
MPhil/PhD in Mechanical Engineering	53	131
Part-time Engineering Doctorate	0	1
Total	262	743

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	4.2	4.1
Teaching & learning activities helped me to achieve the subject learning outcomes	4.2	4.1
Assessments require demonstration of knowledge/ skills/ understanding of subject	4.2	4.2
Able to understand the criteria for grading	4.2	4.1
Staff		
Teaching was well-organized	4.2	4.1
Staff member was helpful	4.2	4.2
Useful and timely feedback	4.2	4.1
Encouraged students to ask questions/ discuss ideas	4.2	4.2
Encouraged students to learn independently	4.2	4.2
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 2022/2023 academic year.

Study Programme	BEng (Hons) in Mechanical Engineering
Student Name	CHEONG Kai Lun +
	CHU Sheung Yam Ivan +
	KHAN Hamad +
	WONG Ting Sen +
	YEUNG Lok Yau +
	ZHANG Wen +

+ First Class Honours

Study Programme	MSc in Mechanical Engineering
Student Name	CHAN Pak Hong *
	CHAN Yuen Yu *
	CHENG Chung Kiu *
	HU Haochen *
	LUO Haojun *
	MAK Siu Fai *
	SHAO Jingheng *

Study Programme	BEng (Hons) in Mechanical Engineering
Student Name	CHUNG Cheuk Ting Tiffany *

* 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 2022/2023 academic year.

Recipient	
ANG Mehriell Eliana Siajuat	LIANG Wendi
CHAN Chun Ho	LO Yat Fu
CHAN Hoi Yi	MALIK Muhammad Aayan
CHOI Jae Won	PAL Ileana
CHU Sheung Yam Ivan	RASHEED Farrukh
FERNANDO Devani Vidanalage Nivain Devnith	WANG Dapeng
GONG Ziqi	WEERASINGHE Kasuntha Gimshan
HE Zhengyang	WONG Po Kiu Bosco
HOSSAIN Md Abrar Faisal	WU Yuting
HU Jipeng	YEUNG Lok Yau
KO Wai Kai	ZENG Bailin
LAI Wing Yan	ZHANG Shuyu
LEE Chun Wa	

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
Outstanding Student Award 2022, Department of Mechanical Engineering	CHU Sheung Yam Ivan
Scholarship	Recipient
BYME Engineering (Hong Kong) Limited Scholarship	CHAN Chun Ho
Calry Chiu Chui Yin Scholarship	ZHANG Wen
Chiang Chen Industrial Charity Foundation Scholarship	CHAN Chun Ho
CLP Scholarship in Mechanical Engineering	WEERASINGHE Kasuntha Gimshan
Commercial Radio 50th Anniversary Scholarship	SZETO Cheuk Yin
Department of Mechanical Engineering Scholarship for Hall Residents	RASHEED Farrukh
	ZHANG Zhewei
Distinguished Athletes Scholarship	TAI Tsz Tsun
Dr Ng-Tat-lun Memorial Scholarship	CHU Sheung Yam Ivan
HASEL Scholarship	TSE Man Ho Moses
HK Electric Scholarship	CHAN Man Fung
HKSAR Government Scholarship	YIU Chung Ki
	ZHANG Zhewei
HKSAR Government Scholarship Fund - Reaching Out Award	ANG Mehriell Eliana Siajuat
	CHEN Shanlin
	CHU Sheung Yam Ivan
	FENG Zhen

HKSAR Government Scholarship Fund - Reaching Out Award	HOSSAIN Md Abrar Faisal
	HU Jipeng
	LEE Tsz Kin
	LEUNG Hoi Tun
	LIANG Zhaojian
	RASHEED Farrukh
	YAO Jichen
	ZHANG Zhewei
	ZHANG Ziqi
	ZHAO Zhen
HKSAR Government Scholarship Fund - Talent Development Scholarship	YAO Jichen
	ZHANG Zhewei
Hong Kong Plastics Manufacturers Association Scholarship	LAM Chun Hei
Lee Hysan Scholarship for Service-Learning Exchange	CHOWDHURY Mushfiqur Rahman
	HU Jipeng
	RASHEED Farrukh
Mitsubishi Electric (Hong Kong) Limited Scholarship	YEUNG Lok Yau
Outstanding Graduates Scholarship	CHAN Pak Hong
	CHAN Yuen Yu
	CHENG Chung Kiu
	HU Haochen
	LUO Haojun
	MAK Siu Fai
	SHAO Jingheng
Professor Leung Tin-pui Memorial Scholarship	WANG Dapeng
REC Engineering Company Limited Scholarship	SZE Shun Tung
Simatelex Charitable Foundation Scholarship	LEE Chun Wa
Targeted Scholarship Scheme - Belt & Road Scholarship (Myanmar) and The Hong Kong Polytechnic University Cultural Ambassador Scholarship	THAZIN WIN HLAING
Targeted Scholarship Scheme - Belt & Road Scholarship (Other Counties)	FERNANDO Devani Vidanalage Nivain Devnith
	RASHEED Farrukh
	WEERASINGHE Kasuntha Gimshan
Targeted Taught Postgraduate Programmes Fellowship	AU Tsz Him Vincent
	CHAN Chi Kan
	CHAN Chi Kin
	CHAN Ka Chuen
	CHAN Yuen Yu
	CHENG Chung Kiu
	CHENG Ming Ho
	CHEUNG Ching Yee
	CHEUNG Ho Ming
	CHEUNG Hong Sui
	CHEUNG Man Kit
	CHOW Ho Chak

Targeted Taught Postgraduate Programmes Fellowship	CHU Kwok Hin Travis
	CHU San Tim
	CHUI Tsz Ho
	KONG Yau Sek
	KWOK Chun Hin
	LEE Tsz Wo
	LEUNG Cheuk Man
	LEUNG Ka Shun
	LEUNG Wing Hong
	LI Tsz Ting
	LUI Hiu Lam
	LUI Wai Ki Alston
	LUI Wan Kit Maurice
	MAK Tsz Ying
	MAK Wai Kin
	NG Shu San
	NG Tsz Fung
	SHEK Chun Hung
	SIN Ka Wing
	SIU Yuen Ying
	SO Tsz Kin
	TAM Kit Yu
	TAM Shiu Hong Jeffrey
	TANG Sin Ying
	TSANG Ho Sum
	TSE Hiu Yan
	TSE Hung Kwan
	WOO Brian Kai Hon
	YAU Wing Ting
	YEUNG Kai Hei
	YEUNG Pak Piu
	YIP Chun Lam
	YU Chun Hei
	YU Heung Lin
The Cheng Foundation Scholarship	CHU Sheung Yam Ivan
The Hong Kong Polytechnic University and Department of Mechanical Engineering Joint Scholarship for Non-local (International) Students	SOORIYAARACHCHI Dasithi Nadunya
The Hong Kong Polytechnic University Entry Scholarship (Academic)	AHMAD Aymen Azan
	CHOWDHURY Audri
	CHOWDHURY Mushfiqur Rahman
	HOSSAIN Md Abrar Faisal
	KHAN Hamad
	MALIK Muhammad Aayan
	MUZTABA Mushfique Tanzim
	ORPA Muntaha Noor

The Hong Kong Polytechnic University Entry Scholarship (Academic)	PAL Ileana
	PASHA Jabed
	QAMAR Abdullah
	ZHANG Wen
The Hong Kong Polytechnic University-APEC Entry Scholarship	ANG Mehriell Eliana Siajuat
	CHEONG Kai Lun
	KAWILARANG Darren Dean
	KWEON Tae Hyeon
	WONG Ting Sen
Undergraduate Reaserch and Innovation Scheme Scholarship	CHOWDHURY Mushfiqur Rahman
	FERNANDO Devani Vidanalage Nivain Devnith
	HE Zhengyang
	KIM Jaeyoun
	LIANG Wendi
	MALIK Muhammad Aayan
	WANG Dapeng
	WEERASINGHE Kasuntha Gimshan
	ZHANG Zhewei
	ZHAO Zhen
VTech Group of Companies Scholarship	FERNANDO Devani Vidanalage Nivain Devnith
Wong Tit-shing Student Exchange Scholarship	JIANG Wentao
	QIU Liuming
	ZHANG Zhewei
	ZHANG Ziqi
	ZHAO Zhen

Bursary
Delong Bursary
Stephen Kam Chuen Cheong Memorial 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
Ampd Energy
Applied Technology Integration Ltd
Associated Engineers Ltd. (Hong Kong)
BENT-TECH Company Limited
Cathay Pacific Catering Services
China State Construction Engineering (Hong Kong) Limited
Chubb Fire & Security
Clear Robotics Limited
Electrical and Mechanical Service Department, HKSARG
Fresh Up Group Limited
Gammon Construction Limited
Hong Kong Productivity Council
Hong Kong Aerospace Technology Group (HKATG)
Hong Kong Tramways Limited
InnoSpire Technology Limited
Majestic Engineering Co Ltd

Organization
Maximum Racing
MTR Corporation Limited
Noble Engineering Development Co.Ltd.
NV5 Global, Inc.
Paperclip Design Limited
REC Engineering Company Limited
Reliance Engineering (HK) Company Limited
Shun Cheong Building Services Limited
The Hari Hong Kong
The Hong Kong and China Gas Company Limited
The Lab (Asia) Limited
Time Medical Limited
Vibro (H.K.) Limited
VSL Hong Kong Limited
WSP Hong Kong Ltd
Yau Lee construction company limited
Young's Engineering Co Ltd

Offshore Placement

Organization	Country
Airbus China	Mainland China
AVL Ibérica S.A.	Spain
Beijing ZHZ Technology Co. Ltd (Shenzhen)	Mainland China
Cathay Pacific	Mainland China
ETAS Korea	South Korea
Harbin Hafei Airbus Composite Manufacturing Centre, Co. Ltd.	Mainland China
Institute of Intelligent Machines,Chinese Academy of Sciences	Mainland China
Occidental of Oman, Inc	Oman
Shanghai Aircraft Manufacturing Co,. Ltd	Mainland China
Shanghai Electric Group Generator Factory	Mainland China
Shenzhen Lilutong Connector Co. Ltd	Mainland China
Shibaura Institute of Technology	Japan
Toronto Metropolitan University	Canada
北京中航智科技有限公司（深圳）	Mainland China

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
AUGUSTIN Lilian Guy Alain	Global Education for European Engineers and Entrepreneurs	France
BORISOV Alexander	Institut Polytechnique des Sciences Avancées	France
BOUAZZA Nawel	Institut National Des Sciences Appliquees De Lyon	France
DOESSLAND Anders Melaaen	Norwegian University Of Science And Technology	Norway
KPA Begnion Paul-Epiphane	Institut Polytechnique des Sciences Avancées	France
LESKO Matej	Czech Technical University In Prague	Czech Republic
LIU WINTER Adison	The University Of Queensland	Australia
MESSANI Ryan	Institut Polytechnique des Sciences Avancées	France
SCHMIDT William Skriver	Technical University Of Denmark	Denmark
SEIDEL Gregor Victor Vincent	Rwth Aachen University	Germany
SHEN Damien Pierre Yucheng	Institut National Des Sciences Appliquees De Lyon	France
SU Mingwu	Shenzhen University	China
VAN BIESBERGEN Brechtje Antonia Mercedes	University Of Twente	Netherlands
VON DER PFORDTEN Leonard Ludwig	Rwth Aachen University	Germany
ZHAO Shengyu	Shenzhen University	China

Outbound

Student Name	Institution	Country
CHAN Ka Ming	Czech Technical University In Prague	Czech Republic
HOSSAIN Md Abrar Faisal	University Of Cambridge	United Kingdom
JIANG Wentao	Rwth Aachen University	Germany
LEE Sum Yin	University Of Southern Denmark	Denmark
LEUNG Hoi Tun	Hochschule Konstanz U.Of Appl. Sciences	Germany
PAL Ileana	University Of Cambridge	United Kingdom
QIU Liuming	Institut National Des Sciences Appliquees De Lyon	France
WONG Gin Wai	Hochschule Konstanz U.Of Appl. Sciences	Germany
WONG Hiu Yung	Hochschule Konstanz U.Of Appl. Sciences	Germany
WONG Yi Chun	Hochschule Konstanz U.Of Appl. Sciences	Germany
ZENG Bailin	University Of Cambridge	United Kingdom
ZHANG Zhewei	Technical University Of Munich	Germany
ZHANG Ziqi	Rwth Aachen University	Germany
ZHAO Zhen	The Pennsylvania State University	United States

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
Benyapa Yawanopas	Chulalongkorn University	Thailand
Jon Kolltveit	Norwegian University of Science and Technology	Norway
Uddhav Sharma	Jecrc University	India
Wilson Fernando Mora Yasig	Polytechnic University of Madrid	Spain

Outbound

Student Name	Institution/Company	Country
Leung Chun Wai	AVL IBÉRICA, S.A.	Spain
Malik Muhammad Aayan	Occidental of Oman, Inc	Oman
Muztaba Mushfique Tanzim	Rajamangala University of Technology Phra Nakhon	Thailand

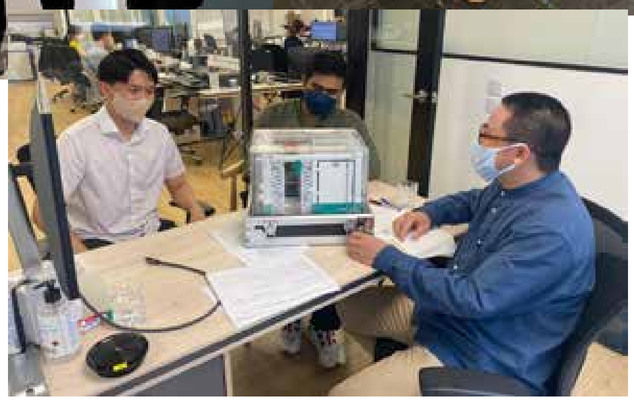
Cooperative Education (Co-op)

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 94% 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 2022

Organization
Aerovision Technology Limited
Ampd Energy Limited
Annecy Solutions Ltd.
Applied Technology Integration Limited
Associated Engineers, Limited (AEL)
Aurabeat Technology Limited
GP Electronics (HK) Limited
HK Productivity Council
IDC China
Kingfisher Asia Ltd
Paperclip Design Limited
REC Engineering Company Ltd.
The Hari Hong Kong
Time Medical Limited



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.

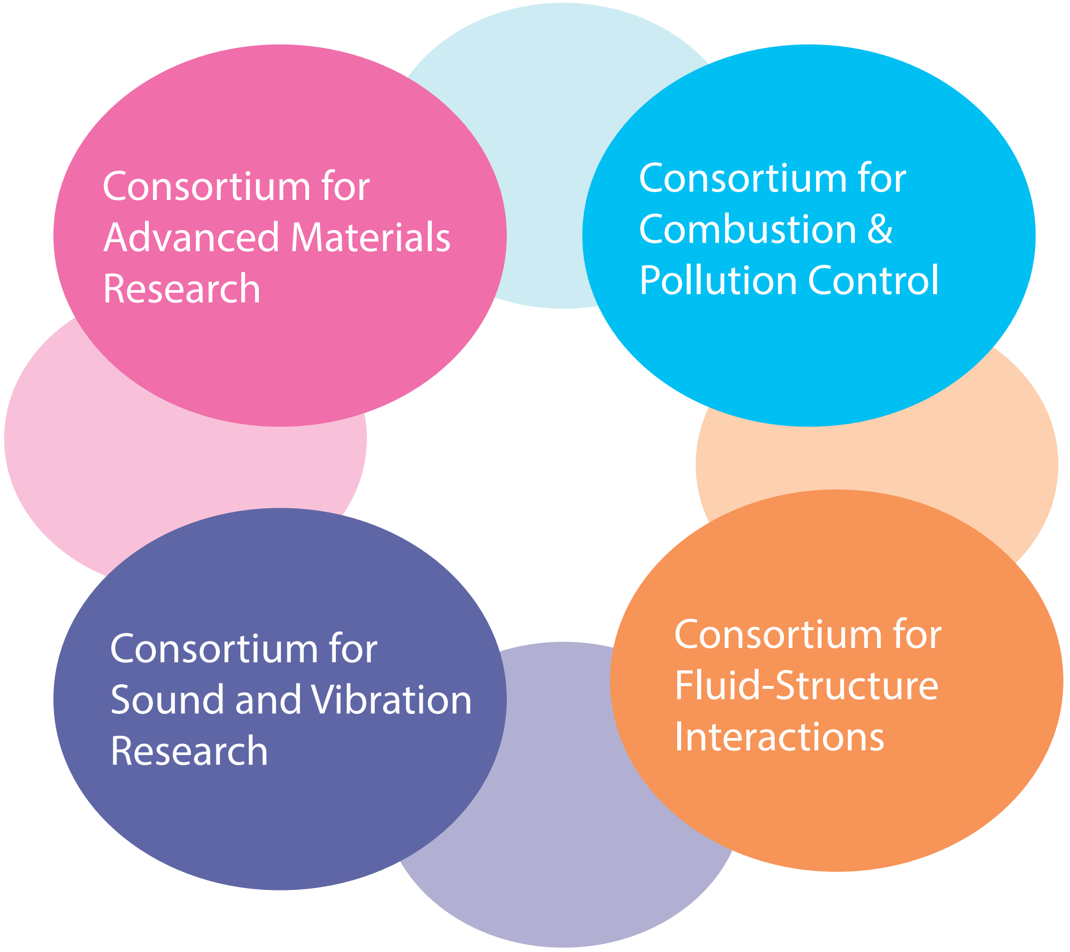
Competition	Organizer	Award
The 15th National University Student Social Practice and Science Contest on Energy Saving & Emission Reduction of 2022	National University Student Contest on Energy Saving & Emission Reduction Committee	First Prize in "600 LIGHT YEAR"
ASME Smart Materials, Adaptive Structures, and Intelligent Structures Conference, Dearborn, Michigan	The American Society of Mechanical Engineers	2022 Runner-up Best Paper Award in Structural Health Monitoring
Cathay Hackathon 2022	Cathay Pacific	Best Innovation Award
AI x HK OPENCUP 2022	Hong Kong Baptist University and Hong Kong Society of Artificial Intelligence and Robotics	1st Runner-up Best AI Implementation Award
2021/2022 Best Final Year Environmental Project Award	Hong Kong Institution of Engineers	Group Project Winner (Champion)
Hong Kong Techathon 2023	The Hong Kong Science and Technology Parks Corporation	Champion (Smart Cities & Sustainability)
The 26th Annual Conference of HKSTAM 2023	Hong Kong Society of Theoretical and Applied Mechanics	Best Student Presentation Award
2023 eScience Summit (New Energy Youth Session)	eScience Editorial Board and the Haihe Institute of Carbon Neutral Research	Most Popular Cover Award
PolyU Research Student Conference 2023	PolyU Graduate School	Best Presentation Award
Three Minute Thesis Competition (3MT®)	PolyU Faculty of Engineering	1st Runner-up & People's Choice
Three Minute Thesis Competition (3MT®)	PolyU Graduate School	People's Choice

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 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 consortiums where a critical mass of experts is available in each have been identified.



Consortium for Advanced Materials Research

Research Group

Director: Prof. FU Mingwang
Deputy Director: Dr ZHENG Guangping
Members: Dr JIAO Zengbao
Dr LIU Qiang
Dr MA Yuan
Dr RUAN Haihui
Dr YAO Haimin
Dr YU Xiang
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 around HK$27 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Prof. FU Mingwang	Multiscale defects in metal additive manufacturing and their avoidance via defect and part size scale oriented process control and optimization	General Research Fund
	Constitutive modeling and failure prediction of stainless steel thin sheet with a composition gradient	Joint Supervision Scheme with the Chinese Mainland, Taiwan and Macao Universities - Other Chinese Mainland, Taiwan and Macao Universities
	Multi-scaled 3D printing equipment with in-situ control and monitoring of process for fabrication of metal-matrix composite structures with gradient-properties	Large Equipment Fund
	Joint Research Centre for Design and Net-shape Forming of Micro-/ Meso-scaled Surface Functional Structures	Mainland / GBA Research Funding Scheme
	Multi-scale modelling of the multi-stage micro forming of miniature metallic parts and the generalized process optimization methodology establishment	PolyU Distinguished Postdoctoral Fellowship Scheme
	Postdoc Matching Fund Scheme - Heng YANG	Postdoc Matching Fund Scheme
	Adaptive 3D Printing: Design, Manufacturing, Modeling and Optimization	RGC Collaborative Research Fund (CRF) (PolyU as Co-PI/ Collaborator)
Dr ZHENG Guangping	Transition metal phosphide-graphene aerogel composite electrode enabled electrocatalytic production of green ammonia with high efficiency and on a large scale from N2-dissolved ionic liquids	Innovation and Technology Fund - Innovation and Technology Support Programme (ITF-ITSP)
Dr JIAO Zengbao	Nanostructural Evolution and Synergistic Strengthening of Additively Manufactured High-entropy Superalloys for High-temperature Applications	Joint Postdoc Scheme with Non-local Institutions
	Postdoc Matching Fund Scheme - Bohan CHEN	Postdoc Matching Fund Scheme
Dr MA Yuan	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation	RGC Early Career Scheme
Dr RUAN Haihui	Electret-based wave energy converters for marine monitoring	CORE Project fund
	Modeling of pyrolysis towards precision glassy carbon geometry: an endeavor for high-temperature precision glass molding	General Research Fund
Dr YU Xiang	A new paradigm for designing reconfigurable lattice metamaterials for elastic wave manipulation and vibration control	Postdoc Matching Fund Scheme
	Development of deployable wave manipulation structures with origami-architected acoustic metamaterials	Start-up Fund for New Recruits
Dr YU Xiaoliang	FTTR 户型图重建	Huawei Technologies Co. Ltd. (Collaborative)
	MXene Modified Al Current Collector for High-Voltage Sodium Metal Batteries	Joint Postdoc Scheme with Non-local Institutions
	Studies on Robotics and Autonomous Systems	Research Matching Grant Scheme (RMGS)
	高电压钠金属电池的低温电解液设计与界面调控机制研究	廣東省基礎與應用基礎研究項目
	基于功能化涂碳集流体的先进无负极钠金属电池开发及产业化中试	科技成果转移转化
Dr ZHANG Xiao	Electrochemical extraction and concentration of high-purity CO2 gas from seawater	Faculty Reserve
	非晶態鈀基硫 / 磷納米材料酸性介質中電催化氧還原合成雙氧水的研究	NSFC Young Scientists Fund 國家自然科學基金委員會青年科學基金項目

Research Output

In 2022/23, CAMR members also worked out a lot of profound research outputs including 3 authored books/ book chapters, 99 journal papers, and 2 conference proceedings.

Consortium for Combustion and Pollution Control

Research Group

Director: Prof. CHAN Tat Leung
Deputy Director: Dr An Liang
Members: Prof. WANG Liqiu
Prof. WANG Zuankai
Dr CHENG Song
Dr JIANG Mengnan
Dr LI Mengying
Dr MA Yuan
Dr WU Maochun
Dr ZHANG Peng
Dr ZHANG Xiao

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$43 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Dr AN Liang	A smart mini-grid system for renewable energy conversion, storage, and utilization	Carbon Neutrality Funding Scheme
	Creation of an electrochemical nitrogen cycle for renewable energy conversion, storage and utilization	Centrally Funded Postdoctoral Fellowship Scheme (for current Postdoctoral Fellows)
	Ammonia as an emerging energy carrier for renewable energy conversion and storage	Faculty Reserve
	电化学能源系统	Hong Kong Scholars Program
	Postdoc Matching Fund Scheme - Xiaohong ZOU	Postdoc Matching Fund Scheme
	Building a fabric structure for efficient moisture wicking, transport, and evaporation	Projects of RISports
Prof. WANG Liqiu	Photopyroelectric Microfluidics: A Contamination-Free Fluidic Processor	General Research Fund
	Asymmetric fibers for efficient fog harvesting	General Research Fund
	Building excellence and impacts in micro and nano technology	Strategic Hiring Scheme - Assistant Professor to Professor
Prof. WANG Zuankai	Tackling the classical Leidenfrost effect	Croucher Senior Research Fellowships
	Research Centre for Nature-Inspired Science and Engineering	Financial Support for Non-PAIR Research Centres
	Surface engineering approach to simultaneously boosting the Leidenfrost point and heat dissipation capability	General Research Fund
	Develop Bioinspired Multifunctional Coating: antifouling, anticorrosion, drag reduction, and energy harvesting	Hong Kong Scholars Program
	Bio-adhesive electricity generator for long-term powering implantable biomedical electronics	PolyU Distinguished Postdoctoral Fellowship Scheme
	Superwettability: From Fundamentals to Applications	RGC Senior Research Fellow Scheme (SRFS)
Prof. WANG Zuankai	Robust Artificial Skin: Innovations for antifouling, anticorrosion, drug reduction and energy harvesting	Strategic Hiring Scheme - Assistant Professor to Professor
	Fusing Slippery surface and bulk-effect architecture for efficient water energy harvesting	深港澳科技計劃項目 (C 類項目)
	高效水伏器件的设计、构筑与集成	重大项目
Dr CHENG Song	Trans- and Super-Critical Fuel Chemistry for Predictive Modelling, Control and Optimization of Hypersonic Aircrafts and Rockets	Joint Postdoc Scheme with Non-local Institutions
	可持续航空替代燃料掺混燃烧机理与实验研究	廣東省基礎與應用基礎研究項目
Dr JIANG Mengnan	Levitation of heavy objects under the Leidenfrost effect for drag reduction	Start-up Fund for RAPs under the Strategic Hiring Scheme
Dr LI Mengying	Novel Hybrid Approach for High-fidelity Intra-hour Forecasting of Directional Solar Irradiance	RGC Early Career Scheme
Dr MA Yuan	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation	RGC Early Career Scheme
Dr WU Maochun	Bubble Dynamics and Mass Transport in Tri-electrode Zinc-Air Flow Batteries	General Research Fund
Dr ZHANG Xiao	Electrochemical extraction and concentration of high-purity CO2 gas from seawater	Faculty Reserve
	非晶態鈀基硫 / 磷納米材料酸性介質中電催化氧還原合成雙氧水的研究	NSFC Young Scientists Fund 國家自然科學基金委員會青年科學基金項目

Research Output

In 2022/23, CCPC members also worked out a lot of profound research outputs including 1 authored books/ book chapters, 38 journal papers, and 1 conference proceeding.

Consortium for Fluid-Structure Interactions

Research Group

Director: Dr TANG Hui

Members: Dr LEUNG Chi Kin Randolph
Dr LIU Yang
Dr MA Yuan
Dr RUAN Haihui
Dr WANG Chenglei
Dr YAO Haimin
Dr YU Xiang

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, CFSI 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$5 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Dr TANG Hui	Machine Learning for Fluid Mechanics	Hong Kong Scholars Program
	Development of an integrated test and simulation platform for the evaluation of sports-footwear microclimate and aerodynamic performance	Projects of RISports
Dr MA Yuan	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation	RGC Early Career Scheme
Dr RUAN Haihui	Electret-based wave energy converters for marine monitoring	CORE Project fund
	Modeling of pyrolysis towards precision glassy carbon geometry: an endeavor for high-temperature precision glass molding	General Research Fund
Dr WANG Chenglei	Dynamics of Rheological Droplets on Rigid/ Flexible Substrates During Condensation/ Evaporation and Effects on Heat Transfer	Joint Postdoc Scheme with Non-local Institutions
Dr YU Xiang	A new paradigm for designing reconfigurable lattice metamaterials for elastic wave manipulation and vibration control	Postdoc Matching Fund Scheme
	Development of deployable wave manipulation structures with origami-architected acoustic metamaterials	Start-up Fund for New Recruits

Research Output

In 2022/23, CFSI members also worked out a lot of profound research outputs including 1 authored books/book chapters, 46 journal papers and 7 conference proceedings.

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 MA Yuan
Dr SUN Yuxiang
Dr WONG Wai On
Dr YU Xiang

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$7 million.

Principal Investigator	Project Title	Funding Scheme/ Source
Prof. CHENG Li	Sonic Black Holes in a Perforated Boundary-modulated Retarding Structure	General Research Fund
	Acoustic/structural wave manipulation and control for vibration/ noise abatement and structural health monitoring Applications	Hong Kong Scholars Program
Prof. SU Zhongqing	Non-Hermiticity enabled topological phenomena in acoustic systems	Centrally Funded Postdoctoral Fellowship Scheme
	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	General Research Fund
Dr CHOY Yat Sze	Aircraft engine noise control using thin and smart material	Hong Kong Scholars Program
	Theory and methodology of vectorial mathematical modelling and dimensional reliability for multi-objective engineering systems	Joint Supervision Scheme with the Chinese Mainland, Taiwan and Macao Universities
Dr MA Yuan	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation	RGC Early Career Scheme
Dr YU Xiang	A new paradigm for designing reconfigurable lattice metamaterials for elastic wave manipulation and vibration control	Postdoc Matching Fund Scheme
	Development of deployable wave manipulation structures with origami-architected acoustic metamaterials	Start-up Fund for New Recruits

Research Output

In 2022/23, CSVR members also worked out a lot of profound research outputs including 69 journal papers and 11 conference proceedings.

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	:	Construction of Bismuth-based Nano/Micro-structures and their Applications in Photoelectrochemical Cells for Solar-driven Ambient Ammonia Production
Investigators	:	L An and R Chen (Chongqing University (China / Chongqing))
Source of Funding	:	NSFC/RGC Joint Research Scheme
Amount Sponsored	:	HKD 1,186,456.00

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	:	Shenzhen Municipal Science and Technology Innovation Commission 深圳市科技創新委員會
Amount Sponsored	:	RMB 400,000.00

Project Title	:	电化学能源系统
Investigators	:	L An
Source of Funding	:	Hong Kong Scholars Program
Amount Sponsored	:	HKD 461,160.00

Project Title	:	High Nickel Content Layered Metal Oxides as High Energy Cathode Materials for Energy Storage
Investigators	:	L An, HT Huang (AP) and GH Chen (City University of Hong Kong (Hong Kong))
Source of Funding	:	Charities & Foundation (Projects of RISE)
Amount Sponsored	:	HKD 500,000.00

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

Project Title	:	基于航天、军工、仿生学等新型跨界降噪技术在家电领域的研究和应用
Investigators	:	L Cheng
Source of Funding	:	2020 年核心技術攻關項目
Amount Sponsored	:	HKD 600,850.00

Project Title	:	Nonlinear Guided Wave Manipulation through Topologically Customized Meta-devices for Structural Health Monitoring Applications
Investigators	:	L Cheng, YS Wang (Tianjin University (China / Tianjin)) and HW Dong (Tianjin University (China / Tianjin))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 825,601.00

Project Title	:	Acoustic/structural wave manipulation and control for vibration/noise abatement and structural health monitoring Applications
Investigators	:	L Cheng
Source of Funding	:	Hong Kong Scholars Program
Amount Sponsored	:	HKD 461,160.00

Project Title	:	Sonic Black Holes in a Perforated Boundary-modulated Retarding Structure
Investigators	:	L Cheng, X Yu and XQ Zhang (Wuhan University of Technology (China / Hubei))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 1,879,559.00

Project Title	:	声振耦合系统的仿真、测试及控制
Investigators	:	L Cheng and X Yu
Source of Funding	:	国家重点实验室开放基金
Amount Sponsored	:	HKD 120,000.00

Project Title	:	可持续航空替代燃料掺混燃烧机理与实验研究
Investigators	:	S Cheng
Source of Funding	:	廣東省基礎與應用基礎研究項目
Amount Sponsored	:	HKD 108,660.00

Project Title	:	Acoustics behavior of orifice with shallow backing cavity under grazing flow for development of perforated panel type metamaterial for fan noise control
Investigators	:	YS Choy
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 883,995.00

Project Title	:	Modelling and design of compact metamaterial absorbers for aeroacoustic noise suppression
Investigators	:	YS Choy
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 558,743.00

Project Title	:	Aircraft engine noise control using thin and smart material
Investigators	:	YS Choy
Source of Funding	:	Hong Kong Scholars Program
Amount Sponsored	:	HKD 461,160.00

Project Title	:	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
Investigators	:	KH Chu, YX Sun and D Navarro Alarcon
Source of Funding	:	Innovation and Technology Fund - Innovation and Technology Support Programme (ITF-ITSP)
Amount Sponsored	:	HKD 899,300.00

Project Title	:	Design of a parallel continuum robot with vision sensors for force-related task execution
Investigators	:	KH Chu and James K. Mills (University of Toronto (Canada))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 825,601.00

Project Title	:	Size effect based deformation and fatigue behaviors and performance enhancement of the lattice structures developed by SLM
Investigators	:	MW Fu
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 825,601.00

Project Title	:	Simulation of wire arc additive manufacturing (WAAM)
Investigators	:	MW Fu
Source of Funding	:	Wuhan Yini Technolgy Co., Ltd (Collaborative)
Amount Sponsored	:	HKD 271,500.00

Project Title	:	Multiscale defects in metal additive manufacturing and their avoidance via defect and part size scale oriented process control and optimization
Investigators	:	MW Fu
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 1,073,644.00

Project Title	:	Adaptive 3D Printing: Design, Manufacturing, Modeling and Optimization
Investigators	:	MW Fu and WH Liao (The Chinese University of Hong Kong (Hong Kong))
Source of Funding	:	RGC Collaborative Research Fund (CRF)
Amount Sponsored	:	HKD 1,500,000.00

Project Title	:	Designing self-healing high-entropy alloys for advanced nuclear applications
Investigators	:	ZB Jiao, JJ Kai (City University of Hong Kong (Hong Kong)), SJ Zhao (City University of Hong Kong (Hong Kong)) and T Yang (City University of Hong Kong (Hong Kong))
Source of Funding	:	RGC Collaborative Research Fund (CRF)
Amount Sponsored	:	HKD 1,000,000.00

Project Title	:	Competing deformation mechanisms of complex alloys at thermomechanical extremes
Investigators	:	ZB Jiao, XL Wang (City University of Hong Kong (Hong Kong)), T Yang (City University of Hong Kong (Hong Kong)) and CT Liu (City University of Hong Kong (Hong Kong))
Source of Funding	:	RGC Collaborative Research Fund (CRF)
Amount Sponsored	:	HKD 1,000,000.00

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 (Non-PolyU Researcher), 邱实 (Non-PolyU Researcher), 范磊 (Non-PolyU Researcher), 牛梦超 (Non-PolyU Researcher), 李雯哲 (Non-PolyU Researcher), 方洁怡晨 (Non-PolyU Researcher), 周冰晨 (Non-PolyU Researcher) and 倪冰雨 (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	:	RMB 638,000.00

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 (Non-PolyU Researcher), 邱实 (Non-PolyU Researcher), 许鹏宇 (Non-PolyU Researcher), 王恺忱 (Non-PolyU Researcher), 牛梦超 (Non-PolyU Researcher), 李雯哲 (Non-PolyU Researcher), 方洁怡晨 (Non-PolyU Researcher), 张熙正 (Non-PolyU Researcher), 张同祯 (Non-PolyU Researcher), 周冰晨 (Non-PolyU Researcher)
Source of Funding	:	深圳市科技計劃 - 基礎研究項目
Amount Sponsored	:	RMB 590,000.00

Project Title	:	Atomic-scale interface structure and plastic deformation mechanisms of ultrastrong and ductile high-entropy alloys with coherent nano-lamellar structures
Investigators	:	ZB Jiao and GP Zheng
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 825,601.00

Project Title	:	Passive Control of Cavity Aeroacoustic Resonance Using Localized Surface Compliance
Investigators	:	RCK Leung
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 883,995.00

Project Title	:	Development of tyre/road noise sound power measurement technology in Hong Kong traffic based on close-proximity method
Investigators	:	RCK Leung
Source of Funding	:	Hong Kong Government (Environment and Conservation Fund)
Amount Sponsored	:	HKD 1,198,600.00

Project Title	:	Toward 2060 Carbon Neutrality: Life-cycle Planning and Design of Photovoltaic Integrated Green Roof (PVIGR) Systems for Hong Kong and the Greater Bay Area (ME)
Investigators	:	MY Li, MS Wong (LSGI), Z Wang (The Hong Kong University of Science and Technology (Hong Kong)), LY Li (City University of Hong Kong (Hong Kong)) and YH Chu (City University of Hong Kong (Hong Kong))
Source of Funding	:	RGC Collaborative Research Fund Young Collaborative Research Grant (CRF YCRG)
Amount Sponsored	:	HKD 874,000.00

Project Title	:	Novel Hybrid Approach for High-fidelity Intra-hour Forecasting of Directional Solar Irradiance
Investigators	:	MY Li
Source of Funding	:	Early Career Scheme
Amount Sponsored	:	HKD 775,420.00

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	:	Re-inventing Surface Haptics for Robust Human-Machine Interactions: from New Modelling to Psychophysical Evaluation
Investigators	:	Y Ma
Source of Funding	:	Early Career Scheme
Amount Sponsored	:	HKD 1,192,029.00

Project Title	:	自动化光伏盐田技术的合作研发
Investigators	:	D Navarro Alarcon and MY Li
Source of Funding	:	國際科技合作 / 港澳臺科技合作
Amount Sponsored	:	HKD 267,850.00

Project Title	:	Robot Thermal Servoing: Fundamental Models and Applications
Investigators	:	D Navarro Alarcon
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 727,050.00

Project Title	:	伯恩光學 - 香港理工大學玻璃研究聯合實驗室
Investigators	:	HH Ruan
Source of Funding	:	Biel Crystal (HK) Manufactory Limited (Collaborative)
Amount Sponsored	:	HKD 6,000,000.00

Project Title	:	Modeling of pyrolysis towards precision glassy carbon geometry: an endeavor for high-temperature precision glass molding
Investigators	:	HH Ruan and BL Huang (ABCT)
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 1,017,507.00

Project Title	:	Electret-based wave energy converters for marine monitoring
Investigators	:	HH Ruan and YQ Fu
Source of Funding	:	CORE Project fund
Amount Sponsored	:	HKD 300,000.00

Project Title	:	Non-invasive Ultrasound Monitoring of Blood Viscosity Using A Stretchable, Conformal, and Wearable Nanocomposite Sensing Array: Fundamental Research & Proof of Concept
Investigators	:	ZQ Su, M Yang (BME) and HU Yu (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 883,995.00

Project Title	:	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
Investigators	:	ZQ Su and H Sohn (Korea Advanced Institute of Science and Technology (South Korea))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 1,028,932.00

Project Title	:	损伤诱发弹性波非线性特征的研究及其在飞行器 FRP 材料健康监测中的应用
Investigators	:	ZQ Su, 王柄涵 (Non-PolyU Researcher), 洪铭 (Non-PolyU Researcher), 徐浩 (Non-PolyU Researcher) and 刘伟健 (Non-PolyU Researcher)
Source of Funding	:	国家重点实验室开放基金
Amount Sponsored	:	HKD 200,000.00

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 and 冯振 (Non-PolyU Researcher)
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	:	Active flow control through deep reinforcement learning
Investigators	:	H Tang and F Ren (Northwestern Polytechnical University (China / Shaanxi))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 863,101.00

Project Title	:	Machine Learning for Fluid Mechanics
Investigators	:	H Tang
Source of Funding	:	Hong Kong Scholars Program
Amount Sponsored	:	HKD 461,160.00

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	:	重大研究计划项目
Amount Sponsored	:	HKD 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	:	廣東省基礎與應用基礎研究項目
Amount Sponsored	:	RMB 100,000.00

Project Title	:	Photopyroelectric Microfluidics: A Contamination-Free Fluidic Processor
Investigators	:	LQ Wang
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 909,835.53

Project Title	:	Asymmetric fibers for efficient fog harvesting
Investigators	:	LQ Wang
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 512,578.19

Project Title	:	Superwettability: From Fundamentals to Applications
Investigators	:	ZK Wang
Source of Funding	:	RGC Senior Research Fellow Scheme
Amount Sponsored	:	HKD 11,918,080.00

Project Title	:	Tackling the classical Leidenfrost effect
Investigators	:	ZK Wang and MN Jiang
Source of Funding	:	Croucher Senior Research Fellowships
Amount Sponsored	:	HKD 3,352,443.55

Project Title	:	Surface engineering approach to simultaneously boosting the Leidenfrost point and heat dissipation capability
Investigators	:	ZK Wang and D Quéré (ESPCI, PSL Research University (France))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 326,240.40

Project Title	:	Fusing Slippery surface and bulk-effect architecture for efficient water energy harvesting
Investigators	:	ZK Wang and HX Zheng, WH Xu, XT Yan (Shenzhen University (China / Guangdong)), H Wu (South China University of Technology (China / Guangdong)), YX Song (City University of Hong Kong (Hong Kong)) and YK Jin (City University of Hong Kong (Hong Kong))
Source of Funding	:	深港澳科技計劃項目 (C 類項目)
Amount Sponsored	:	HKD 533,442.23

Project Title	:	Shaping Gas Fuel Storage: Understanding the Thermal Properties of Porous Metal-Organic Frameworks
Investigators	:	ZK Wang and ZG Li (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding	:	RGC Collaborative Research Fund (CRF)
Amount Sponsored	:	HKD 700,000.00

Project Title	:	高效水伏器件的设计、构筑与集成
Investigators	:	ZK Wang
Source of Funding	:	重大项目
Amount Sponsored	:	HKD 3,100,000.00

Project Title	:	Understanding the role of heat and mass transfer for achieving dendrite-free zinc-based flow batteries
Investigators	:	MC Wu and TS Zhao (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 815,601.00

Project Title	:	Bubble Dynamics and Mass Transport in Tri-electrode Zinc-Air Flow Batteries
Investigators	:	MC Wu and TS Zhao (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding	:	RGC General Research Fund
Amount Sponsored	:	HKD 1,085,462.00

Project Title	:	Development of Safe and Energy-dense All-solid-state Lithium Batteries
Investigators	:	MC Wu, BL Huang (The Hong Kong University of Science and Technology (Hong Kong)) and JB Xu (The Hong Kong University of Science and Technology (Hong Kong))
Source of Funding	:	RGC Research Impact Fund
Amount Sponsored	:	HKD 1,428,572.00

Project Title	:	FTTR 户型图重建
Investigators	:	XL Yu and YX Sun
Source of Funding	:	Huawei Technologies Co. Ltd. (Collaborative)
Amount Sponsored	:	HKD 1,495,000.00

Project Title	:	基于功能化涂碳集流体的先进无负极钠金属电池开发及产业化中试
Investigators	:	XL Yu, 黄卓帆 (Non-PolyU Researcher), 陈俊杰 (Non-PolyU Researcher), 郭建恒 (Non-PolyU Researcher), 赵宇 (Non-PolyU Researcher), 胡亮 (Non-PolyU Researcher), 林雨潇 (Non-PolyU Researcher), 李佳峰 (Non-PolyU Researcher), 姜洁如 (Non-PolyU Researcher) and 任秀云 (Non-PolyU Researcher)
Source of Funding	:	內蒙古自治區科學技術廳 - 科技成果轉移轉化
Amount Sponsored	:	RMB 400,000.00

Project Title	:	高电压钠金属电池的低温电解液设计与界面调控机制研究
Investigators	:	XL Yu, BC Ge, JJ Chen and L Hu
Source of Funding	:	廣東省基礎與應用基礎研究項目
Amount Sponsored	:	HKD 108,660.00

Project Title	:	无负极锂金属电池梯度功能化电极制备技术研究及示范
Investigators	:	XL Yu and 李佳峰 (山东大学)
Source of Funding	:	2023 年自治區重點研發和成果轉化計劃 (科技支撐黃河流域生態保護和高質量發展)
Amount Sponsored	:	RMB 300,000.00

Project Title	:	Studies on Robotics and Autonomous Systems
Investigators	:	XL Yu, YX Sun, D Navarro Alarcon and KH Chu
Source of Funding	:	Research Matching Grant Scheme (RMGS)
Amount Sponsored	:	HKD 496,650.00

Project Title	:	非晶態鈀基硫 / 磷納米材料酸性介質中電催化氧還原合成雙氧水的研究
Investigators	:	X Zhang
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 330,000.00

Project Title	:	A safe, efficient and facile approach for hydrogen storage and generation: catalytic hydrolysis of solid-state hydrogen storage materials
Investigators	:	GP Zheng, JY Cheng, WT Yang, T Li and XC Zheng (Zhengzhou University (China / Henan))
Source of Funding	:	Hong Kong Government (Environment and Ecology Bureau)
Amount Sponsored	:	HKD 3,305,100.00

Project Title	:	Transition metal phosphide-graphene aerogel composite electrode enabled electrocatalytic production of green ammonia with high efficiency and on a large scale from N2-dissolved ionic liquids
Investigators	:	GP Zheng
Source of Funding	:	Innovation and Technology Fund - Innovation and Technology Support Programme (ITF-ITSP)
Amount Sponsored	:	HKD 3,876,050.00

Project Title	:	Hydrogen generation from hydrolysis of ammonia borane as catalyzed by graphene aerogel supported multicomponent transition-metal phosphides
Investigators	:	GP Zheng
Source of Funding	:	Charities & Foundation (Projects of RISE)
Amount Sponsored	:	HKD 330,510.00

Project Title	:	Transition Metal Phosphide-graphene Aerogel Composite Electrode Enabled Electrocatalytic Production of Green Ammonia with High Efficiency and on A Large Scale from N2-dissolved Ionic Liquids
Investigators	:	GP Zheng
Source of Funding	:	Innovation and Technology Fund - Innovation and Technology Support Programme (ITF-ITSP)
Amount Sponsored	:	HKD 382,605.00

Projects funded by Central Research Grant

Project Title	:	Postdoc Matching Fund Scheme - Fatang LIU
Investigators	:	L An
Amount Sponsored	:	HKD 456,750.00

Project Title	:	Building a fabric structure for efficient moisture wicking, transport, and evaporation
Investigators	:	L An and L Li (SFT)
Amount Sponsored	:	HKD 300,000.00

Project Title	:	A smart mini-grid system for renewable energy conversion, storage, and utilization
Investigators	:	L An
Amount Sponsored	:	HKD 1,760,000.00

Project Title	:	Creation of an electrochemical nitrogen cycle for renewable energy conversion, storage and utilization
Investigators	:	L An
Amount Sponsored	:	HKD 836,280.00

Project Title	:	Green Manufacturing of Lithium-ion battery Electrodes
Investigators	:	L An, XY Shi, ZF Pan and Y Liu
Amount Sponsored	:	HKD 500,000.00

Project Title	:	Optimization of acetaldehyde chemical kinetic model via high-dimensional model representation and machine learning
Investigators	:	S Cheng
Amount Sponsored	:	HKD 250,000.00

Project Title	:	Fundamental of Multi-scaled Smart Manufacturing (MSSM)
Investigators	:	MW Fu, S To (ISE), SQ Shi, HC Man (ISE) and X Song (The Chinese University of Hong Kong (Hong Kong))
Amount Sponsored	:	HKD 2,050,000.00

Project Title	:	Ultrafast Coining of Titanium Alloy Micro-Structured Surfaces Employing Skin Effect and Electroplasticity
Investigators	:	MW Fu and LF Peng (Shanghai Jiao Tong University (China / Shanghai))
Amount Sponsored	:	HKD 578,100.00

Project Title	:	Development of hybrid post-processing techniques for property enhancement of 3D printed metallic components
Investigators	:	MW Fu
Amount Sponsored	:	HKD 500,000.00

Project Title	:	Multi-scaled 3D printing equipment with in-situ control and monitoring of process for fabrication of metal-matrix composite structures with gradient-properties
Investigators	:	MW Fu, X Zhao (BME) and KC Chan (ISE)
Amount Sponsored	:	HKD 2,300,000.00

Project Title	:	Levitation of heavy objects under the Leidenfrost effect for drag reduction
Investigators	:	MN Jiang
Amount Sponsored	:	HKD 250,000.00

Project Title	:	Low-carbon and large-scale manufacturing of nanostructured alloys with superior mechanical properties
Investigators	:	ZB Jiao
Amount Sponsored	:	HKD 500,000.00

Project Title	:	Nanostructural Evolution and Synergistic Strengthening of Additively Manufactured High-entropy Superalloys for High-temperature Applications
Investigators	:	ZB Jiao and CW Fei (Fudan University (China / Shanghai))
Amount Sponsored	:	HKD 578,100.00

Project Title	:	Development of Novel High-entropy Superalloys with Superior High Temperature Properties via Additive Manufacturing
Investigators	:	ZB Jiao
Amount Sponsored	:	HKD 500,000.00

Project Title	:	The Design of Solar Driven Multi-generation System Informed by High Fidelity Solar Forecasts
Investigators	:	MY Li
Amount Sponsored	:	HKD 200,000.00

Project Title	:	Developing Advanced Human-Machine Mechanical Interface
Investigators	:	Y Ma
Amount Sponsored	:	HKD 250,000.00

Project Title	:	Hybrid Surface haptics: Towards Effective Virtual Features Rendering
Investigators	:	Y Ma
Amount Sponsored	:	HKD 154,610.00

Project Title	:	Robot Motion Skill Representation and Adaptation with Structure-Aware Movement Primitives
Investigators	:	D Navarro Alarcon, AQ Duan (BME) and A Cherubini (University of Montpellier / LIRMM (France))
Amount Sponsored	:	HKD 154,610.00

Project Title	:	Non-Hermiticity enabled topological phenomena in acoustic systems
Investigators	:	ZQ Su
Amount Sponsored	:	HKD 836,280.00

Project Title	:	Control of Flow-induced Vibration of a Mooring Cylinder with Bio-inspired Surface
Investigators	:	H Tang and WX Huang (Tsinghua University (China / Beijing))
Amount Sponsored	:	HKD 578,100.00

Project Title	:	Development of an integrated test and simulation platform for the evaluation of sports-footwear microclimate and aerodynamic performance
Investigators	:	H Tang, FW Zhao (SFT), KL Yick (SFT) and TM Cheung (RISports)
Amount Sponsored	:	HKD 300,000.00

Project Title	:	Dynamics of Rheological Droplets on Rigid/ Flexible Substrates During Condensation/ Evaporation and Effects on Heat Transfer
Investigators	:	CL Wang and MQ Zhang (National University of Singapore (Singapore))
Amount Sponsored	:	HKD 578,100.00

Project Title	:	Building excellence and impacts in micro and nano technology
Investigators	:	LQ Wang
Amount Sponsored	:	HKD 1,551,600.00

Project Title	:	Bio-adhesive electricity generator for long-term powering implantable biomedical electronics
Investigators	:	ZK Wang
Amount Sponsored	:	HKD 1,288,513.00

Project Title	:	Robust Artificial Skin: Innovations for antifouling, anticorrosion, drug reduction and energy harvesting
Investigators	:	ZK Wang
Amount Sponsored	:	HKD 2,539,800.00

Project Title	:	Understanding the role of heat and mass transfer for achieving dendrite-free zinc-based flow batteries (internal project)
Investigators	:	MC Wu
Amount Sponsored	:	HKD 1,651,600.00

Project Title	:	Development of deployable wave manipulation structures with origami-architected acoustic metamaterials
Investigators	:	X Yu
Amount Sponsored	:	HKD 750,000.00

Project Title	:	Development of acoustic sensing technology for detection of body sound signals
Investigators	:	X Yu and L Cheng
Amount Sponsored	:	HKD 300,000.00

Project Title	:	A new paradigm for designing reconfigurable lattice metamaterials for elastic wave manipulation and vibration control
Investigators	:	X Yu
Amount Sponsored	:	HKD 730,800.00

Project Title	:	MXene Modified Al Current Collector for High-Voltage Sodium Metal Batteries
Investigators	:	XL Yu and YD Cao (Tsinghua University (China / Beijing))
Amount Sponsored	:	HKD 578,100.00

Project Title	:	Electrochemical oxygen reduction to hydrogen peroxide at practical rates in strong acid
Investigators	:	X Zhang
Amount Sponsored	:	HKD 1,651,600.00

Project Title	:	Solid electrolyte reactor for electrochemical CO2 capture and concentration from flue gas
Investigators	:	X Zhang
Amount Sponsored	:	HKD 154,610.00

Project Title	:	Closed-loop electrochemical CO2 capture and concentration from flue gas
Investigators	:	X Zhang
Amount Sponsored	:	HKD 500,000.00

Project Title	:	Flow Battery Inspired Electrochemical Carbon Capture
Investigators	:	X Zhang
Amount Sponsored	:	HKD 500,000.00

Project Title	:	Electrochemical extraction and concentration of high-purity CO2 gas from seawater
Investigators	:	X Zhang, KC Chan (ISE) and Y Chen (The Chinese University of Hong Kong (Hong Kong))
Amount Sponsored	:	HKD 500,000.00

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	Y S Choy XJ Jing, CITY UNIVERSITY OF HONG KONG
ABDULLAH Ali	Broadband Aeroacoustic Liner Concept for Subsonic Grazing Flow	R C K Leung
AKBAR Muhammad Ayaz	Design and Optimization of Single-particle Impact Damper	W O Wong
AKHTAR Awais	Thin Film Coatings with Ultra-high Stability for Precision Glass Molding	H H Ruan
AN Shuowei (0000-0001-9933-9677)	Manipulation of Mechanical Waves with Meta-structures	L. Cheng ZHU Jie, TONGJI UNIVERSITY
CHANG Le	Acoustic-Black-Hole-Enabled Meta-lattice for Elastic Wave Manipulation Using Dynamic Stiffness Method	L. Cheng
CHAO Xu	Design, Analysis and Testing of Biomimetic Underwater Robots	NAVARRO-ALARCON, David XJ Jing, CITY UNIVERSITY OF HONG KONG
CHEN Keyu	Incremental Paradigm for Pose Graph Optimization in Cycle Space	NAVARRO-ALARCON, David Dr YX Sun, CITY UNIVERSITY OF HONG KONG
CHEN Mingxi	Machine Learning of Mechanical and Thermodynamic Properties of Multicomponent Alloys	JIAO, ZB XIANG Xiaodong, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
CHEN Shanlin	Integrated Remote Sensing and Machine Learning Techniques for Solar Forecasting and Resource Assessment	LI Mengying H Tang
CHEN Zongnan	Applications of Dielectric Barrier Discharge Plasma Actuator for Flow Control	C Y Wen
DENG Fang	Collective Locomotion of Self-propelled Flapping Flexible Fiols	WANG Chenglei H Tang
DENG Nan	Plane of Array Solar Irradiance Forecasting Based on Deep Learning and Physical Methods	LI Mengying
ESAN Oladapo Christopher	Operating Fuel Cells with an Electrically Rechargeable Liquid Fuel	AN, Liang H Tang
FAN Haiyan	Non-Hermitian Topological Phases in Elastic and Acoustic Lattices	Z Q Su Tuo LIU, CHINESE ACADEMY OF SCIENCES
FAN Lei	Topological Elastic Metamaterials in Perforated Plates: Design, Validation and Applications	Z Q Su Dr J ZHU, TONGJI UNIVERSITY
FANG Jieyichen	Phase Stability, Transformations, and Mechanical Properties of FCC-Based Medium/High-Entropy Alloys	JIAO, ZB M W Fu

Student Name	Project Title	Supervisor
FENG Yuan	Numerical Simulation of Heat and Mass Transfer in Fuel Cells	AN, Liang WANG Shuai, HARBIN INSTITUTE OF TECHNOLOGY
FENG Yuchao	A Study on Explainable Decision Making for Autonomous Driving	CHU, Henry Dr YX Sun, CITY UNIVERSITY OF HONG KONG
FENG Zhen	A Study on Semantic Scene Understanding with Multi-modal Fusion for Autonomous Driving	SUN YX NAVARRO-ALARCON, David Prof. GUO Yanning, HARBIN INSTITUTE OF TECHNOLOGY
FENG Zhenyong	Size-dependent Deformation and Fracture Behaviour of Heterogenous Materials: Crystal Plasticity and Phase Field	M W Fu
GAO Shuang	Attention-Based Semantic Bird-Eye-View Grid Map Generation for Autonomous Driving	NAVARRO-ALARCON, David Dr YX Sun, CITY UNIVERSITY OF HONG KONG Prof WANG Qiang, HARBIN INSTITUTE OF TECHNOLOGY
GOHAR Ghulam Abbas	Chemical Kinetics of Electrolyte and Cathode Materials for Enhancing Fire Safety in Lithium-ion Batteries (Tentative)	AN, Liang Dr Hao ZHAO, PEKING UNIVERSITY Dr P ZHANG, CITY UNIVERSITY OF HONG KONG
GONG Chen	Mechanisms and Vibroacoustic Benefits of Vibro-Impact-Enabled Nonlinear Meta-Structures	L. Cheng
GONG Gu	Real-time Multi-modal Sensor Fusion in 6-DOF Pose Tracking	NAVARRO-ALARCON, David HE Zhen, HARBIN INSTITUTE OF TECHNOLOGY WANG Qiang, HARBIN INSTITUTE OF TECHNOLOGY
GUO Jiaming	Thermal Stability, Mechanical Properties, and Deformation Behavior of Coherent Nano-Lamellar High-Entropy Alloys	JIAO, ZB
GUO Xinze	Generation and Manipulation of Self-bending Acoustic Waves in Homogeneous Waveguide Using Metasurface	Z Q Su
HAMEED Imran	Learning Swimming Gaits and Navigation on a Biomimetic Marine Robot	NAVARRO-ALARCON, David XJ Jing, CITY UNIVERSITY OF HONG KONG
HE Yi	Optoacoustics-based Defect Inspection and Material Characterization for Multiscale Structures (Tentative)	Z Q Su Dr WANG Kai, XIAMEN UNIVERSITY
HOU Jiexin	Design of Superhydrophobic Surfaces with Mixed Contact Angle Hysteresis for Directional Liquid Transport and Applications	WANG, ZK
HOU Zhao	Active Flow Control of a Revolutionary Bluff Body Based on DRL and MRT-LBM-LES	H Tang
HU Dien	Size Effect on Deformation and Fatigue Behaviors of Additive Manufactured Triply Periodic Minimum Surfaces Lattice Structures	M W Fu

Student Name	Project Title	Supervisor
HU Liang	Advanced Electrolyte Design for High Performance Anode-Free Sodium Metal Batteries	YU, Xiaoliang CHEN GH, CITY UNIVERSITY OF HONG KONG
HU Xiaodan	New Surface Haptic Technology Using Tunable Patterned Nanowrinkles	MA Yuan H Yao
HUO Shengzeng	Keypoint-based Bimanual Shaping of Deformable Linear Objects under Environmental Constraints	NAVARRO-ALARCON, David
HUO Xiaoyu	Development of a Passive Liquid Fuel Cell Using E-fuel and Hydrogen Peroxide for Submarine and Spacecraft Application	AN, Liang
JIANG Qian	Study of Magnetic Hyperthermia Based Cancer Treatment Using a Holistic Simulation Framework (Tentative)	H Tang Y Liu
JIANG Qinghong	Material Removal Mechanism and Surface Integrity of Wrought and SLM-ed Ti6Al4V Alloys in Ultra-High-Speed Machining	M W Fu Prof. ZHANG B, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
JIANG Shujuan	Theoretical Study on the Electronic, Piezoelectric and Ferromagnetic Properties in 2D Materials	G P Zheng
KWONG Tak Chun	Environmental Noise Control Strategy Based on Psychophysiological Acoustics Assessment Method	Y S Choy CHU, Henry L. Cheng LUN Pak Kong
LI Ang	Developing High-performance Rechargeable Aqueous Zinc Battery for Renewable Energy Storage	WU Maochun AN, Liang
LI Hangxing	Interior Noise Control of Vibro-acoustic System Using Vibration and Acoustic Absorbers	W O Wong L. Cheng
LI Haotian	A Study on Implicit Neural Representations for Dynamic Environment Perception	CHU, Henry Dr YX Sun, CITY UNIVERSITY OF HONG KONG
LI Jinze	Slow-sound Meta-structures for Multi-functional Acoustic Design	L. Cheng YU Xiang, Lucien
LI Sihui	Sonic Black Holes in a Perforated Boundary-Modulated Retarding Structure	L. Cheng
LI Tian	The Influences of Glass-glass Interfaces on Mechanical Properties of Metallic Nanoglasses: Insights from Experimental Studies and Molecular Dynamics Simulations	G P Zheng
LI Tingjian	Quantization of Ultrasonic Imaging with Nonlinear Lamb Waves	L. Cheng YANG Yong, EIT INSTITUTE FOR ADVANCED STUDY (EIAS)
LI Wenzhi	Full-spectrum Utilization of Solar Energy Employing Spectral Beam Splitting Photovoltaic/Thermal Systems	AN, Liang
LI Ying	Investigation on the Aero-acoustic Behaviour of Orifice under Grazing Flow and Design of Compact Microperforated Panel Absorbers for Ducted System	Y S Choy
LI Zhiyi	Synergistic Alloying Effects, Microstructural Evolution, and Mechanical Properties of High-strength Steels	JIAO, ZB WEI Yujie, EIT INSTITUTE FOR ADVANCED STUDY (EIAS)

Student Name	Project Title	Supervisor
LIANG Zhaojian	Theoretical Investigations of the Transient Characteristics of Solid Oxide Electrolyzer Cells (SOEC) Under Unstable Operational Conditions	LI Mengying AN, Liang
LIANG Zhihua	Bio-inspired Design and Construction of Bacterial Cellulose-based Structural Material and Its Applications	H Yao
LIU Hangchen	Development of Periodic Electric Surface Structure to Inhibit Leidenfrost Effect and Enhance Boiling Heat Transfer	WANG, ZK
LIU Jinan	Propulsion and Steering of Artificial Flagellated Micro-swimmers (Tentative)	H H Ruan
LIU Qiutong	Modelling and Experimental Development of Multi-Modal Human Machine Interactions	MA Yuan H Tang
LIU Yun	Ammonia as an Energy Carrier for Renewable Energy Conversion and Storage (Tentative)	AN, Liang
LIU Yutong	Ultra-conformal Dual-conductive Polymer Coating on Next-generation Materials for High-performance Lithium-ion Battery	LIU, John Qiang CHEN GH, CITY UNIVERSITY OF HONG KONG
LIU Ze	Topologically Customized Metamaterial Devices for Nonlinear-Guided-Wave-Based Structural Health Monitoring	L. Cheng
LU Jingyi	Heterogeneous Surface for Passive Radiative Cooling and Electromagnetic Interference Shielding	WANG, ZK
LU Tianhui	Sustainable Marine Infrastructure Enhanced by Seawater Sea-Sand Concrete and Fibre-Reinforced Polymer Composites	Z Q Su YU, Tao CEE, tao1yu, CEE LM ZHOU, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
LUO Guojie	Acoustic Tweezers for Particle and Cell Micromanipulation Using Microfluidic Devices	Z Q Su Mo Yang, htmems, BME
LYU Shipeng	A Generic Programming Method for Robotic Motion Tasks by Human Body Language	NAVARRO-ALARCON, David ZENG Wenjun Kevin, EIT INSTITUTE FOR ADVANCED STUDY (EIAS)
MA Ming	A Tunable Metasurface for Enhancing Acoustic Transmission in Biomedical Ultrasound Applications: Theoretical Investigation and Experimental Demonstration	Z Q Su
MA Siyao	Manipulation of Magneto-Structural Transformation and Related Caloric Effects in Ni-Mn-Su-Based Magnetic Shape Memory Alloys	G P Zheng Prof ZHANG Xue Xi, HARBIN INSTITUTE OF TECHNOLOGY
MA Wanyu	Reactive Task Planning for Robotic Sequential Manipulation of Rigid/Soft Objects	NAVARRO-ALARCON, David
MA Weixin	A Study on Global Localization for Autonomous Driving in GNSS-degraded Environments	Z Q Su NAVARRO-ALARCON, David Dr YX SUN, CITY UNIVERSITY OF HONG KONG
NASEEM Sufyan	Alloy Design, Thermal Stability, and Mechanical Properties of Heat-resistant Steels Strengthened by Nanoscale Precipitation	JIAO, ZB

Student Name	Project Title	Supervisor
NI Bingyu	Formation, Stability, and Mechanical Properties of Nanostructured Metal-Intermetallic Composites	JIAO, ZB Prof XIANG Xiaodong, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
QIAO Xiaoru	Development of Acoustic Meta-surface for Wave Manipulation and Noise Attenuation	Y S Choy CHIANG Yan Kei, UNIVERSITY OF NEW SOUTH WALES
RAZA Hassan	High Entropy Materials (HEMs) for High-Performance Lithium-Sulfur Batteries	CHEN Guohua
REN Xinrui	Near Real-Time Optimization of High-Dimensional Chemical Reaction Kinetic Models	CHENG, Song Ryan H Tang
REN Xiuyun	Formulation of Thermally Stable Electrolytes for High-performance Sodium Metal Batteries	YU, Xiaoliang H Yao
RUAN Jianyuan	Real-Time LiDAR Simultaneous Localization and Meshing	ZHANG, Dan
SONG Yang	AI-assisted and Digital Twin Enabled Guided Waves for Damage Detection and Health Monitoring of Laminate Structures	L. Cheng
SUN Xiang	Geometrically Nonlinear Features of Acoustic Black Hole (ABH) Beams and Nonlinearity-Enhanced ABH Effects (Tentative)	L. Cheng
TANG Kairui	Droplet and Magnet Generator	WANG, ZK
TANG Mingcong	Synthesis of Octahedron Platinum-transition Metal	AN, Liang
TANG Ruoyue	Nitrous Oxide Blended Monopropellant Residue/Soot Clumping and Sensitization	CHENG, Song Ryan AN, Liang
TIAN Yishen	Beneficial Nonlinear Stiffness of Properties with Bio-inspired Polygon Structure Design	CAO Deng Qing, HARBIN INSTITUTE OF TECHNOLOGY JING XJ, CITY UNIVERSITY OF HONG KONG
TONG Xu	Study on Size Effects in Meso/Microformed Complex Shape Parts by Physical Experiments and Crystal Plasticity Finite Element Method Simulations	M W Fu
WANG Chuyang	Sound Source Localization in Reverberant Environments with a Mobile Robot	CHU, Henry L. Cheng Y S Choy
WANG Fangyuan	Development of Variational Autoencoder Based Subgoal Inference Methods for Long Horizon Manipulation Tasks	NAVARRO-ALARCON, David ZENG Wenjun Kevin, EIT INSTITUTE FOR ADVANCED STUDY (EIAS)
WANG Fei	Coupled CFD-Monte Carlo Simulation of Soot Aerosol Dynamics in Combustion Flows	AN, Liang T L Chan
WANG Hongbo	Development of High-Efficiency Rain-Based Electric Energy Harvesters	WANG, ZK
WANG Man	Synthesis and Characterization of Novel Electrode Materials for High-Performance Supercapacitors	CHEN Guohua Juan YANG, XI'AN JIAOTONG UNIVERSITY
WANG Mingrui	On the Oxidation and Autoignition of Trans- and Super-critical Fluid: Theory, Modelling, and Experiments	CHENG, Song Ryan P ZHANG, CITY UNIVERSITY OF HONG KONG

Student Name	Project Title	Supervisor
WANG Qingqing	A Hybrid Additive Manufacturing Approach for Producing Functionalized Fiber-reinforced Polymer Composite Structures	Z Q Su ZHOU LM, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
WANG Wei	Phase-Field Modelling of Mechani-electrochemical Process in Solid-state Batteries and Other Systems	H H Ruan
WEI Sheng	Sound Insulation Based On Energy Conversion Between Coupled Vibration Modes	Y S Choy
WENG Qingsong	Synthesis and Characterization of Cobalt-Less Nickel-Rich Layered Cathode Materials for High-Energy-Density Lithium-Ion Batteries	LIU, John Qiang CHEN GH, CITY UNIVERSITY OF HONG KONG HUANG Xuejie, 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	M W Fu TANG, HP, hptang, ASRC Xin, Y, icyxin, ASRC
WU Baoxin	Developing High-efficiency Electrocatalysts with Excellent Stability for Water Splitting	AN, Liang ZHANG Xiao ZENG Lin, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
WU Lizhen	Investigation of Multiple Transport Phenomena Coupled with Electrochemical Reactions in the Proton Exchange Membrane Electrolyzer Cell	AN, Liang
WU Yifei	Investigation of Crystallization Kinetics in Chalcogenide Glasses and Their Hot Embossing Process	H H Ruan
XIA Qing	Electrochemical Coupling of Alcohol Oxidation and CO2 Reduction to Produce Carbon-based Products at a Commercial Current Density	ZHANG Xiao AN, Liang
XIE Chuyi	Enabling High-Performance Lithium Metal Batteries Through Nanostructure Engineering	LIU, John Qiang G P Zheng CHEN GH, CITY UNIVERSITY OF HONG KONG
XIE Yuying	Spatial Solar Forecasting Based on Integrated Remote-sensing and Deep-learning Techniques	LI Mengying
XU Fujing	Study on Graphene Aerogels Functionalized with Co-P Based High Entropy Alloys as Efficient Catalyst for Ammonia Borane Hydrolysis	G P Zheng WEI Yujie, EIT INSTITUTE FOR ADVANCED STUDY (EIAS)
XU Xin	Design, Modeling, Force Sensing and Dynamic Control for Parallel Continuum Robot	CHU, Henry NAVARRO-ALARCON, David (Dr), dnavar, ME
YANG Tao	Vortex-Dynamics and Synchronization of Multiple Flickering Diffusion Flames	MA Yuan Dr P Zhang, CITY UNIVERSITY OF HONG KONG
YANG Wentao	Study on the Energy Storage Property of High Entropy Ceramic	G P Zheng ZHAO Jin Kui, SONGSHAN LAKE MATERIALS LABORATORY

Student Name	Project Title	Supervisor
YANG Yi	Investigation of Glassy-Carbon Structure Formation: Experiments and Modelling	H H Ruan
YE Ling	Design and Fabrication of High-Energy and Long-Life Zinc Ion Capacitors	H H Ruan
YEUNG Wai Kin	Machine Learning Based Active Flow Control	H Tang
YU Qiang	First-principles Study of Stability, Mechanical Properties, and Deformation Mechanisms of Multicomponent Intermetallic Alloys	JIAO, ZB
YU Zhenyu	Research on the Mechanical Performance and Microstructure Evolution of High-temperature Titanium Alloy Fabricated by WA2M	M W Fu YU Shengfu, HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
ZENG Lingwei	Flow Control of Bluff Body (Tentative)	H Tang Y Liu
ZHAI Yanjie	Efficient Electrochemical Hydrazine Oxidation Integrated with Intermediate Utilization	ZHANG Xiao AN, Liang
ZHANG Bin	Fourier-Based Multi-Agent Formation Control to Track Evolving Closed Boundaries	NAVARRO-ALARCON, David JOSE Guadalupe ROMERO, MEXICO AUTONOMOUS INSTITUTE OF TECHNOLOGY
ZHANG Hanwen	Structural Optimization of Electrodes Based on Solid-state Li-metal Batteries	M W Fu MA Yongsheng, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
ZHANG Kouer	Green Ammonia Production through Electrochemical Nitrate Reduction Reaction	AN, Liang ZHANG Xiao
ZHANG Tongzhen	Microstructural Evolution and Mechanical Properties of Additively Manufactured multicomponent Intermetallic Alloys	JIAO, ZB
ZHANG Wanglinhan	Wearable Ultrasonics for Continuous Glucose Monitoring	Z Q Su
ZHANG Xin	TBC	CHENG, Song Ryan P Zhang, CITY UNIVERSITY OF HONG KONG
ZHANG Yuanman	Artificial-Intelligence and Digital-Twin Assisted Structural Health Monitoring with Guided Waves for Thick-Walled Hollow Cylinders	L. Cheng
ZHANG Yuzhou	Precision Shaping and Strengthening of Glass Assisted by Neural Networks	H H 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	Investigation of Enhanced Binder Removal for Lithium-Ion Batteries Direct Recovery via Froth Flotation	LIU, John Qiang CHEN GH, CITY UNIVERSITY OF HONG KONG Prof LIU Ke, SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY
ZHAO Liangjing	Variation of Spectral Characteristic Vasomotion at Different Locations (Tentative)	H Tang Y Liu

Student Name	Project Title	Supervisor
ZHENG Hao	Force Sensing Capable Surgical Tools with Inverse Dexterous Workspace for Robot-Assisted Surgery	CHU, Henry
ZHI Hui	Cooperative Planning and Control of the Multi-robot System Composed of Deformable Link Connections for Non-prehensile Object Manipulation	NAVARRO-ALARCON, David
ZHOU Zengcheng	Modeling and Control of Bio-Inspired Underwater Robots	NAVARRO-ALARCON, David XJ Jing, CITY UNIVERSITY OF HONG KONG

PhD (Part-Time)

LABAZANOVA Luiza	Mobile Self-Reconfigurable Soft-Rigid (2SR) Robots	NAVARRO-ALARCON, David Thrishantha NANAYAKKARA, IMPERIAL COLLEGE LONDON
LEE Hoi Yin	Interaction and Automation in Robotics: From Assistance to Collaboration	NAVARRO-ALARCON, David
NASEER Muhammad Rehan	Control of Deep Cavity Aeroacoustics Using Flow-Induced Surface Vibration of Wall Mounted Flexible Panel	R C K Leung

MPhil (Full-Time)

HAFEEZ Saiqa	Dynamics Computational Analysis of PEO/PVDF/SN Composite Solid-State Electrolyte for Lithium-Ion Batteries (Tentative)	YU, Xiaoliang CHEN GH, CITY UNIVERSITY OF HONG KONG
KANDASAMY Subash	High Entropy Oxides (HEO) for Chlorine Evolution Reaction	LIU, John Qiang AN, Liang CHEN GH, CITY UNIVERSITY OF HONG KONG
ZHU Yinggang	Ammonia Electro-Synthesis from Nitrogen and Water Using a Cyclic Lithium-mediated Method	CHEN Guohua (Prof.), ghchen, ME

MPhil (Part-Time)

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

Research Collaborations

In the year of 2022/2023, the Department has worked hard to establish collaborative research activities with the following educational institutions and organizations:

Institution / Organization	Region
Agency for science, technology and research	Singapore
AGH university of Technology	Poland
Argonne National Laboratory	USA
ASML	USA
Baidu Inc.	Mainland China
Beihang University	Mainland China
Beijing Institute of Technology	Mainland China
Beijing University of Technology	Mainland China
Brandenburg University of Technology Cottbus–Senftenberg	Germany
Central South University	Mainland China
China Oilfield Services Limited	Mainland China
Chinese Academy of Sciences	Mainland China
Chongqing University	Mainland China
City University of Hong Kong	Hong Kong
Curtin University	Australia
Dalian Institute of Chemical Physics, Chinese Academy of Sciences	Mainland China
Delft University of Technology	Netherlands
Fudan University	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
Harvard University	USA
Henan University	Mainland China
Hohai University	Mainland China
Hong Kong Jockey Club	Hong Kong
Huawei Technologies Co., Ltd.	Mainland China
Huazhong University of Science and Technology	Mainland China
Imperial College London	UK
INSA-Lyon	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
Jilin University	Mainland China
King Abdullah University of Science and Technology (KAUST)	Saudi Arabia
Korea Advanced Institute of Science and Technology	South Korea
Lawrence Livermore National Laboratory	USA
Le Mans Université	France
Midea	Mainland China
Monash University	Australia

Nanjing university of Aeronautics ans Astronautics	Mainland China
Nanyang Technological University	Singapore
National Renewable Energy Laboratory	USA
National Research Council	Italy
National University of Singapore	Singapore
New South Wales University	Australia
Northwestern Polytechnical University	Mainland China
Oak Ridge National Laboratory	USA
Pacific Northwest National Laboratory	USA
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
Sandia National Laboratories	USA
Shandong University	Mainland China
Shanghai Jiaotong University	Mainland China
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences	Mainland China
Shenzhen University	Mainland China
Sichuan University	Mainland China
Southern University of Science and Technology	Mainland China
Stevens Institute of Technology	USA
Sun Yat-sen University	Mainland China
Texas A&M University	USA
The Hong Kong University of Science and Technology	Hong Kong
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 Galway	Ireland
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	Beijing
University of Technology Sydney	Sydney
University of Toronto	Canada
University of Toulon	France
Xiamen University	Mainland China
Xian Jiaotong University	Mainland China
Yale University	USA
Zhejiang Lab	Mainland China

Research Outputs

Summary	
Patent	1
Book	2
Book Chapter	3
Journal	227
Conference Proceeding	15
Total no. of archival publications	248

Patent:

1. 周伟 , Yao, H, 袁丁 , 褚旭阳 & 连云崧 Apr. 19 2022, " 一种激光诱导多尺度微通道自组装成形加工方法 ", Patent No. ZL202011293076.X.

Book:

1. Jiao, Z & Yang, T (eds) 2022, "Advanced Multicomponent Alloys: From Fundamentals to Applications", 1 edn, Springer Singapore, 303p. https://doi.org/10.1007/978-981-19-4743-8
2. Liu, Y 2022, "The Mapping between Traditional Chinese Medicine and Signaling Molecules", Cambridge Scholars Publishing, 625p.

Book Chapter:

1. Shi, X, Bi, Y, Esan, OC & An, L 2022, "Membranes for vanadium-air redox flow batteries", in 60 Years of the Loeb-Sourirajan Membrane: Principles, New Materials, Modelling, Characterization, and Applications, Elsevier, pp. 155-175. https://doi.org/10.1016/B978-0-323-89977-2.00014-2

2. Qiu, S & Jiao, Z 2022, "Ni-Base Superalloys: Alloying and Microstructural Control", in Materials Horizons: From Nature to Nanomaterials, Springer Nature, pp. 133-154. https://doi.org/10.1007/978-981-19-4743-8_6

3. Niu, M, Kong, H, Zhou, B, Wang, W & Jiao, Z 2022, "Intermetallic-Precipitation-Strengthened Steels", in Materials Horizons: From Nature to Nanomaterials, Springer Nature, pp. 247-265. https://doi.org/10.1007/978-981-19-4743-8_10

Journal:

1. Wu, L, An, L, Jiao, D, Xu, Y, Zhang, G & Jiao, K 2022, 'Enhanced oxygen discharge with structured mesh channel in proton exchange membrane electrolysis cell', Applied Energy, vol. 323, 119651. https://doi.org/10.1016/j.apenergy.2022.119651

2. Shen, Y, Yan, X, An, L, Shen, S, An, L & Zhang, J 2022, 'Portable proton exchange membrane fuel cell using polyoxometalates as multi-functional hydrogen carrier', Applied Energy, vol. 313, 118781. https://doi.org/10.1016/j.apenergy.2022.118781

3. Wang, Y, Yin, H & An, L 2022, 'An Upcoming Global Challenge: Efficient Recycling for End-of-Life Lithium-Ion Batteries', Global Challenges, vol. 6, no. 12, 2200184. https://doi.org/10.1002/gch2.202200184

4. Esan, OC, Shi, X, Dai, Y, An, L & Zhao, TS 2022, 'Operation of liquid e-fuel cells using air as oxidant', Applied Energy, vol. 311, 118677. https://doi.org/10.1016/j.apenergy.2022.118677

5. Wu, Y, Liu, H, Wang, Y, An, L & Xu, X 2022, 'Spatially resolved electrochemical performance and temperature distribution of a segmented solid oxide fuel cell under various hydrogen dilution ratios and electrical loadings', Journal of Power Sources, vol. 536, 231477. https://doi.org/10.1016/j.jpowsour.2022.231477

6. Zhang, R, Shi, X, Esan, OC & An, L 2022, 'Organic Electrolytes Recycling From Spent Lithium-Ion Batteries', Global Challenges, vol. 6, no. 12, 2200050. https://doi.org/10.1002/gch2.202200050

7. Liu, Y, Pan, Z, Esan, OC, Xu, X & An, L 2022, 'Performance Characteristics of a Direct Ammonia Fuel Cell with an Anion Exchange Membrane', Energy and Fuels, vol. 36, no. 21, pp. 13203-13211. https://doi.org/10.1021/acs.energyfuels.2c02951

8. Shi, X, Huo, X, Esan, OC, Dai, Y, An, L & Zhao, TS 2022, 'Manipulation of Electrode Composition for Effective Water Management in Fuel Cells Fed with an Electrically Rechargeable Liquid Fuel', ACS Applied Materials and Interfaces, vol. 14, no. 16, pp. 18600-18606. https://doi.org/10.1021/acsami.2c03203

9. Liu, Y, Pan, Z, Esan, OC, Liu, X, Wang, H & An, L 2022, 'Efficient electrocatalytic nitrogen reduction to ammonia with FeNi-Co/carbon mat electrodes', Journal of Alloys and Compounds, vol. 927, 166973. https://doi.org/10.1016/j.jallcom.2022.166973

10. Pan, Z, Liu, Y, Zhang, Z, Zhao, Z, Zhu, J, Chen, R & An, L 2022, 'A bifunctional electrochemical flow cell integrating ammonia production and electricity generation for renewable energy conversion and storage', International Journal of Hydrogen Energy, vol. 47, no. 90, pp. 38361-38371. https://doi.org/10.1016/j.ijhydene.2022.09.007

11. Feng, H, Liu, D, Zhang, Y, Shi, X, Esan, OC, Li, Q, Chen, R & An, L 2022, 'Advances and Challenges in Photoelectrochemical Redox Batteries for Solar Energy Conversion and Storage', Advanced Energy Materials, vol. 12, no. 24, 2200469. https://doi.org/10.1002/aenm.202200469

12. Pan, Z, Zhang, Z, Tahir, A, Esan, OC, Liu, X, Wang, H & An, L 2022, 'Ultralow loading FeCoNi alloy nanoparticles decorated carbon mat for hydrogen peroxide reduction reaction and its application in direct ethylene glycol fuel cells', International Journal of Energy Research, vol. 46, no. 10, pp. 13820-13831. https://doi.org/10.1002/er.8100

13. Pan, Z, Liu, Y, Tahir, A, Christopher Esan, O, Zhu, J, Chen, R & An, L 2022, 'A discrete regenerative fuel cell mediated by ammonia for renewable energy conversion and storage', Applied Energy, vol. 322, 119463. https://doi.org/10.1016/j.apenergy.2022.119463

14. Liu, Y, Chen, R, Zhu, X, Ye, D, Yang, Y, Li, J, Wang, D, An, L & Liao, Q 2022, '3D radially-grown TiO2 nanotubes/Ti mesh photoanode for photocatalytic fuel cells towards simultaneous wastewater treatment and electricity generation', Journal of Cleaner Production, vol. 381, 135200. https://doi.org/10.1016/j.jclepro.2022.135200

15. Jiang, X & Chan, TL 2022, 'Lagrangian particle tracking with new weighted fraction Monte Carlo method for studying the soot particle size distributions in premixed flames', International Journal of Numerical Methods for Heat and Fluid Flow, vol. 32, no. 6, pp. 1961-1998. https://doi.org/10.1108/HFF-04-2021-0247

16. Li, L, Wang, J, Zhang, L, Duan, H, Deng, Y & Chen, G 2022, 'Rational design of a heterogeneous double-layered composite solid electrolyte via synergistic strategies of asymmetric polymer matrices and functional additives to enable 4.5 V all-solid-state lithium batteries with superior performance', Energy Storage Materials, vol. 45, pp. 1062-1073. https://doi.org/10.1016/j.ensm.2021.10.047

17. Cheng, S, Saggese, C, Goldsborough, SS, Wagnon, SW & Pitz, WJ 2022, 'Unraveling the role of EGR olefins at advanced combustion conditions in the presence of nitric oxide: Ethylene, propene and isobutene', Combustion and Flame, vol. 245, 112344. https://doi.org/10.1016/j.combustflame.2022.112344

18. Liu, Y, Cheng, L & Du, J 2022, 'Multi-modal thermoacoustic instability suppression via locally resonant and Bragg bandgaps', Journal of the Acoustical Society of America, vol. 152, no. 6, pp. 3471-3482. https://doi.org/10.1121/10.0016554

19. Mi, Y, Cheng, L, Zhai, W & Yu, X 2022, 'Broadband low-frequency sound attenuation in duct with embedded periodic sonic black holes', Journal of Sound and Vibration, vol. 536, 117138. https://doi.org/10.1016/j.jsv.2022.117138

20. Shan, S & Cheng, L 2022, 'Two-dimensional scattering features of the mixed second harmonic A0 mode Lamb waves for incipient damage localization', Ultrasonics, vol. 119, 106554. https://doi.org/10.1016/j.ultras.2021.106554

21. Zhou, T & Cheng, L 2022, 'Planar Swirl-shaped Acoustic Black Hole Absorbers for Multi-directional Vibration Suppression', Journal of Sound and Vibration, vol. 516, 116500. https://doi.org/10.1016/j.jsv.2021.116500

22. Fang, X, Wen, J, Cheng, L, Yu, D, Zhang, H & Gumbsch, P 2022, 'Programmable gear-based mechanical metamaterials', Nature Materials, vol. 21, no. 8, pp. 869-876. https://doi.org/10.1038/s41563-022-01269-3

23. Ji, H, Han, B, Cheng, L, Inman, DJ & Qiu, J 2022, 'Frequency attenuation band with low vibration transmission in a finite-size plate strip embedded with 2D acoustic black holes', Mechanical Systems and Signal Processing, vol. 163, 108149. https://doi.org/10.1016/j.ymssp.2021.108149

24. Liu, Y, Du, J & Cheng, L 2022, 'Thermoacoustic modal instability and its suppression with locally resonant flexible membranes', Combustion and Flame, vol. 237, 111859. https://doi.org/10.1016/j.combustflame.2021.111859

25. Ma, L, Zhou, T & Cheng, L 2022, 'Acoustic Black hole effects in Thin-walled structures: Realization and mechanisms', Journal of Sound and Vibration, vol. 525, 116785. https://doi.org/10.1016/j.jsv.2022.116785

26. Shan, S, Liu, Z, Cheng, L & Pan, Y 2022, 'Metamaterial-enhanced coda wave interferometry with customized artificial frequency-space boundaries for the detection of weak structural damage', Mechanical Systems and Signal Processing, vol. 174, 109131. https://doi.org/10.1016/j.ymssp.2022.109131

27. Sun, R, Wong, W & Cheng, L 2022, 'Optimal design of a tunable electromagnetic shunt damper for dynamic vibration absorber', Mechatronics, vol. 83, 102763. https://doi.org/10.1016/j.mechatronics.2022.102763

28. Sun, R, Wong, W & Cheng, L 2022, 'A tunable hybrid damper with Coulomb friction and electromagnetic shunt damping', Journal of Sound and Vibration, vol. 524, 116778. https://doi.org/10.1016/j.jsv.2022.116778

29. Sun, R, Wong, W & Cheng, L 2022, 'Hybrid electromagnetic shunt damper with Coulomb friction and negative impedance converter', International Journal of Mechanical Sciences, vol. 230, 107552. https://doi.org/10.1016/j.ijmecsci.2022.107552

30. Wrona, S, Pawelczyk, M & Cheng, L 2022, 'Sound transmission through a panel with a hybrid active and semi-active control system', Journal of Sound and Vibration, vol. 536, 117172. https://doi.org/10.1016/j.jsv.2022.117172

31. Zhang, L, Kerschen, G & Cheng, L 2022, 'Nonlinear features and energy transfer in an Acoustic Black Hole beam through intentional electromechanical coupling', Mechanical Systems and Signal Processing, vol. 177, 109244. https://doi.org/10.1016/j.ymssp.2022.109244

32. An, S, Liu, T, Chen, Y, Cheng, L & Zhu, J 2022, 'Routing Edge States in an Anisotropic Elastic Topological Insulator', Physical Review Applied, vol. 18, no. 5, 054071. https://doi.org/10.1103/PhysRevApplied.18.054071

33. Liu, Z, Dong, HW, Yu, GL & Cheng, L 2022, 'Achieving ultra-broadband and ultra-low-frequency surface wave bandgaps in seismic metamaterials through topology optimization', Composite Structures, vol. 295, 115863. https://doi.org/10.1016/j.compstruct.2022.115863

34. Liu, Z, Shan, SB, Dong, HW & Cheng, L 2022, 'Topologically customized and surface-mounted meta-devices for Lamb wave manipulation', Smart Materials and Structures, vol. 31, no. 6, 065001. https://doi.org/10.1088/1361-665X/ac64db

35. Osika, M, Ziaja-Sujdak, A, Radecki, R, Cheng, L & Staszewski, WJ 2022, 'Nonlinear Modes in Shear Horizontal Wave Propagation–Analytical and Numerical Analysis', Journal of Sound and Vibration, vol. 540, 117247. https://doi.org/10.1016/j.jsv.2022.117247

36. Teng, S, Chen, X, Chen, G, Cheng, L & Bassir, D 2022, 'Structural damage detection based on convolutional neural networks and population of bridges', Measurement: Journal of the International Measurement Confederation, vol. 202, 111747. https://doi.org/10.1016/j.measurement.2022.111747

37. Yu, M, Fang, X, Yu, D, Wen, J & Cheng, L 2022, 'Collision enhanced hyper-damping in nonlinear elastic metamaterial', Chinese Physics B, vol. 31, no. 6, 064303. https://doi.org/10.1088/1674-1056/ac48fc

38. Fan, X, Sheng, P, Wen, J, Chen, W & Cheng, L 2022, 'A nonlinear metamaterial plate for suppressing vibration and sound radiation', International Journal of Mechanical Sciences, vol. 228, 107473. https://doi.org/10.1016/j.ijmecsci.2022.107473

39. Zhao, SD, Oudich, M, Shen, C, Zhang, C, Cheng, L, Wang, YS & Fang, D 2022, 'Reflective Metasurfaces with Multiple Elastic Mode Conversions for Broadband Underwater Sound Absorption', Physical Review Applied, vol. 17, no. 4, 044013. https://doi.org/10.1103/PhysRevApplied.17.044013

40. Ji, H, Zhao, X, Wang, N, Huang, W, Qiu, J & Cheng, L 2022, 'A Circular Eccentric Vibration Absorber With Circumferentially Graded Acoustic Black Hole Features', Journal of Vibration and Acoustics, Transactions of the ASME, vol. 144, no. 2, 4053475. https://doi.org/10.1115/1.4053475

41. Zheng, Y, Ma, S, Benassi, E, Feng, Y, Xu, S, Luo, N, Liu, Y, Cheng, L, Qin, Y, Yuan, M, Wang, Z, Wang, D & Zhou, F 2022, 'Surface engineering and on-site charge neutralization for the regulation of contact electrification', Nano Energy, vol. 91, 106687. https://doi.org/10.1016/j.nanoen.2021.106687

42. An, S, Liu, T, Fan, H, Gao, H, Gu, Z, Liang, S, Huang, S, Zheng, Y, Chen, Y, Cheng, L & Zhu, J 2022, 'Second-order elastic topological insulator with valley-selective corner states', International Journal of Mechanical Sciences, vol. 224, 107337. https://doi.org/10.1016/j.ijmecsci.2022.107337

43. Dong, HW, Shen, C, Zhao, SD, Qiu, W, Zheng, H, Zhang, C, Cummer, SA, Wang, YS, Fang, D & Cheng, L 2022, 'Achromatic metasurfaces by dispersion customization for ultra-broadband acoustic beam engineering', National

Science Review, vol. 9, no. 12, nwac030. https://doi.org/10.1093/nsr/nwac030

44. Cheng, S, Goldsborough, SS, Wagnon, SW, Whitesides, R, McNenly, M, Pitz, WJ, Lopez-Pintor, D & Dec, JE 2022, 'Replicating HCCI-like autoignition behavior: What gasoline surrogate fidelity is needed?', Applications in Energy and Combustion Science, vol. 12, 100091. https://doi.org/10.1016/j.jaecs.2022.100091

45. Yang, W, Choy, Y, Wang, Z & Li, Y 2022, 'Sound radiation and suppression of an unbaffled long enclosure using Helmholtz resonators', Mechanical Systems and Signal Processing, vol. 165, 108408. https://doi.org/10.1016/j.ymssp.2021.108408

46. Chen, L, Chen, G, Huang, L, Choy, YS & Sun, W 2022, 'Multiple Sound Source Localization, Separation, and Reconstruction by Microphone Array: A DNN-Based Approach', Applied Sciences (Switzerland), vol. 12, no. 7, 3428. https://doi.org/10.3390/app12073428

47. Fei, C, Liu, H, Patricia Liem, R, Choy, Y & Han, L 2022, 'Hierarchical model updating strategy of complex assembled structures with uncorrelated dynamic modes', Chinese Journal of Aeronautics, vol. 35, no. 3, pp. 281-296. https://doi.org/10.1016/j.cja.2021.03.023

48. Yuan, HL, Lai, CYY, Wong, MNK, Kwong, TC, Choy, YS, Mung, SWY & Chan, CCH 2022, 'Interventions for Sensory Over-Responsivity in Individuals with Autism Spectrum Disorder: A Narrative Review', Children, vol. 9, no. 10, 1584. https://doi.org/10.3390/children9101584

49. Yuan, HL, Lai, CYY, Wong, MNK, Kwong, TC, Choy, YS, Mung, SWY & Chan, CCH 2022, 'Possible Neural Mechanisms Underlying Sensory Over-Responsivity in Individuals with ASD', Current Developmental Disorders Reports, vol. 9, no. 4, pp. 89-97. https://doi.org/10.1007/s40474-022-00257-1

50. Cui, Z, Ma, W, Lai, J, Chu, HK & Guo, Y 2022, 'Coupled Multiple Dynamic Movement Primitives Generalization for Deformable Object Manipulation', IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 5381-5388. https://doi.org/10.1109/LRA.2022.3156656

51. Lai, J, Lu, B, Zhao, Q & Chu, HK 2022, 'Constrained Motion Planning of a Cable-Driven Soft Robot with Compressible Curvature Modeling', IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 4813-4820. https://doi.org/10.1109/LRA.2022.3152318

52. Zhao, Q, Lai, J, Hu, X & Chu, HK 2022, 'Dual-Segment Continuum Robot With Continuous Rotational Motion Along the Deformable Backbone', IEEE/ASME Transactions on Mechatronics, vol. 27, no. 6, 09774843, pp. 4994-5004. https://doi.org/10.1109/TMECH.2022.3171259

53. Hu, D, Zheng, JY & Fu, M 2022, 'Study on size-related product quality of multiscale central-punched cups fabricated by compound forming directly using brass sheet', International Journal of Advanced Manufacturing Technology, vol. 120, no. 11-12, pp. 7235-7249. https://doi.org/10.1007/s00170-022-09222-z

54. Tong, X, Zheng, JY & Fu, MW 2022, 'Numerical and experimental study of the size effect on deformation behavior and quality of microembossed multi-channel structures', Journal of Manufacturing Processes, vol. 78, pp. 363-375. https://doi.org/10.1016/j.jmapro.2022.04.047

55. Zheng, JY, Fang, JYC & Fu, MW 2022, 'Flow-induced folding in multi-scaled bulk forming of axisymmetric flanged parts and its prediction and avoidance', International Journal of Advanced Manufacturing Technology, vol. 119, no. 9-10, pp. 5863-5883. https://doi.org/10.1007/s00170-021-08382-8

56. Zheng, JY, Ran, J & Fu, MW 2022, 'Constitutive modeling of multiscale polycrystals considering grain structures and orientations', International Journal of Mechanical Sciences, vol. 216, 106992. https://doi.org/10.1016/j.ijmecsci.2021.106992

57. Zheng, Z, Zhan, M & Fu, MW 2022, 'Microstructural and geometrical size effects on the fatigue of metallic materials', International Journal of Mechanical Sciences, vol. 218, 107058. https://doi.org/10.1016/j.ijmecsci.2021.107058

58. Fu, J, Li, H, Song, X & Fu, MW 2022, 'Multi-scale defects in powder-based additively manufactured metals and alloys', Journal of Materials Science and Technology, vol. 122, pp. 165-199. https://doi.org/10.1016/j.jmst.2022.02.015

59. Qu, S, Ding, J, Fu, J, Fu, M & Song, X 2022, 'Anisotropic material properties of pure copper with fine-grained microstructure fabricated by laser powder bed fusion process', Additive Manufacturing, vol. 59, 103082. https://doi.org/10.1016/j.addma.2022.103082

60. Tian, W, Qi, L & Fu, MW 2022, 'Multi-scale and multi-step modeling of thermal conductivities of 3D braided composites', International Journal of Mechanical Sciences, vol. 228, 107466. https://doi.org/10.1016/j.ijmecsci.2022.107466

61. Ma, J, Li, H, He, ZR, Yang, H & Fu, MW 2022, 'Complex unloading behavior of titanium alloy in cold and thermal-mechanical working', International Journal of Mechanical Sciences, vol. 233, 107672. https://doi.org/10.1016/j.ijmecsci.2022.107672

62. Cai, W, Wang, C, Sun, C, Qian, L & Fu, MW 2022, 'Microstructure evolution and fracture behaviour of TWIP steel under dynamic loading', Materials Science and Engineering: A, vol. 851, 143657. https://doi.org/10.1016/j.msea.2022.143657

63. Fang, JYC, Liu, WH, Luan, JH, Yang, T, Fu, MW & Jiao, ZB 2022, 'Dual effects of pre-strain on continuous and discontinuous precipitation of L12-strengthened high-entropy alloys', Journal of Alloys and Compounds, vol. 925, 166730. https://doi.org/10.1016/j.jallcom.2022.166730

64. He, Z, Zhang, K, Zhu, H, Lin, Y, Fu, MW & Yuan, S 2022, 'An anisotropic constitutive model for forming of aluminum tubes under both biaxial tension and pure shear stress states', International Journal of Plasticity, vol. 152, 103259. https://doi.org/10.1016/j.ijplas.2022.103259

65. Yu, H, Wang, Z, Zhang, B, Ning, Y & Fu, MW 2022, 'Irregular growth of the γ ′ phase in a Ni-based superalloys under slow cooling rate', Materials Letters, vol. 307, 131067. https://doi.org/10.1016/j.matlet.2021.131067

66. Zhang, R, Xu, Z, Peng, L, Lai, X & Fu, MW 2022, 'Intragranularly misoriented grain boundary evolution affected by local constraints and grain size in micro-scale deformation of ultra-thin metallic sheets', International Journal of Plasticity, vol. 157, 103377. https://doi.org/10.1016/j.ijplas.2022.103377

67. Cai, W, Sun, C, Wang, C, Qian, L, Li, Y & Fu, MW 2022, 'Modelling of the intergranular fracture of TWIP steels working at high temperature by using CZM-CPFE method', International Journal of Plasticity, vol. 156, 103366. https://doi.org/10.1016/j.ijplas.2022.103366

68. Fang, JYC, Liu, WH, Luan, JH, Yang, T, Wu, Y, Fu, MW & Jiao, ZB 2022, 'Competition between continuous and discontinuous precipitation in L12-strengthened high-entropy alloys', Intermetallics, vol. 149, 107655. https://doi.org/10.1016/j.intermet.2022.107655

69. Feng, ZY, Li, H, Zhang, D, Guo, XX, Chen, YQ & Fu, MW 2022, 'Multi-aspect size effect transition from micro to macroscale: Modelling and experiment', International Journal of Plasticity, vol. 156, 103364. https://doi.org/10.1016/j.ijplas.2022.103364

70. Fu, J, Ding, J, Qu, S, Zhang, L, Wang, MY, Fu, MW & Song, X 2022, 'Improved light-weighting potential of SS316L triply periodic minimal surface shell lattices by micro laser powder bed fusion', Materials and Design, vol. 222, 111018. https://doi.org/10.1016/j.matdes.2022.111018

71. Gao, PF, Yan, XG, Li, FG, Zhan, M, Ma, F & Fu, MW 2022, 'Deformation mode and wall thickness variation in conventional spinning of metal sheets', International Journal of Machine Tools and Manufacture, vol. 173, 103846. https://doi.org/10.1016/j.ijmachtools.2021.103846

72. Sun, H, Li, H, Yi, L, Liu, Y, Du, J & Fu, MW 2022, 'Prediction and control of bending quality of double-layered gap tube', International Journal of Mechanical Sciences, vol. 228, 107474. https://doi.org/10.1016/j.ijmecsci.2022.107474

73. Sun, H, Li, H, Gong, F, Liu, Y, Li, G & Fu, M 2022, 'Filler parameters affected wrinkling behavior of aluminum alloy double-layered gap tube in rotary draw bending process', International Journal of Advanced Manufacturing Technology, vol. 119, no. 7-8, pp. 5261-5276. https://doi.org/10.1007/s00170-021-08375-7

74. Wang, C, Sun, C, Cai, W, Qian, L, Guo, X & Fu, MW 2022, 'Evolution of partial dislocation slip–mediated deformation twins in single crystals: a discrete dislocation plasticity model and an analytical approach', International Journal of Plasticity, vol. 152, 103230. https://doi.org/10.1016/j.ijplas.2022.103230

75. Wang, C, Wang, H, Chen, G, Zhu, Q, Zhang, P & Fu, MW 2022, 'Experiment and modeling based studies of the mesoscaled deformation and forming limit of Cu/Ni clad foils using a newly developed damage model', International Journal of Plasticity, vol. 149, 103173. https://doi.org/10.1016/j.ijplas.2021.103173

76. Xu, Z, Jiang, T, Huang, J, Peng, L, Lai, X & Fu, MW 2022, 'Electroplasticity in electrically-assisted forming: Process phenomena, performances and modelling', International Journal of Machine Tools and Manufacture, vol. 175, 103871. https://doi.org/10.1016/j.ijmachtools.2022.103871

77. Zhang, L, Ma, Q, Ding, J, Qu, S, Fu, J, Fu, MW, Song, X & Wang, MY 2022, 'Design of elastically isotropic shell

lattices from anisotropic constitutive materials for additive manufacturing', Additive Manufacturing, vol. 59, 103185. https://doi.org/10.1016/j.addma.2022.103185

78. Zheng, Z, Zhao, P, Zhan, M, Li, H, Lei, Y & Fu, MW 2022, 'Understanding of the fatigue crack nucleation in metallic sealing rings by explicitly incorporating the deformation history from manufacturing to service', International Journal of Fatigue, vol. 164, 107174. https://doi.org/10.1016/j.ijfatigue.2022.107174

79. Zheng, Z, Zhao, P, Zhan, M, Shen, S, Wang, Y & Fu, MW 2022, 'The roles of rise and fall time in load shedding and strain partitioning under the dwell fatigue of titanium alloys with different microstructures', International Journal of Plasticity, vol. 149, 103161. https://doi.org/10.1016/j.ijplas.2021.103161

80. Gao, P, Yan, X, Wang, Y, Li, H, Zhan, M, Ma, F & Fu, M 2022, 'An online intelligent method for roller path design in conventional spinning', Journal of Intelligent Manufacturing. https://doi.org/10.1007/s10845-022-02006-y

81. Qingliang, S, Guangmeng, Y, Caixiang, X, Hejun, L, Qiang, S, Jinhua, L & Fu, MW 2022, 'Control of multi-scale cracking for improvement of the reliability of carbon/carbon composites via design of interlaminar stress', Composite Structures, vol. 297, 115985. https://doi.org/10.1016/j.compstruct.2022.115985

82. Yang, H, Li, H, Sun, H, Zhang, YH, Liu, X, Zhan, M, Liu, YL & Fu, MW 2022, 'Anisotropic plasticity and fracture of alpha titanium sheets from cryogenic to warm temperatures', International Journal of Plasticity, vol. 156, 103348. https://doi.org/10.1016/j.ijplas.2022.103348

83. Hou, JX, Cao, BX, Xiao, B, Jiao, ZB & Yang, T 2022, 'Compositionally complex coherent precipitation-strengthened high-entropy alloys: a critical review', Rare Metals, vol. 41, no. 6, pp. 2002-2015. https://doi.org/10.1007/s12598-021-01953-4

84. Ren, Y, Du, J, Liu, B, Jiao, ZB, Tian, Y, Baker, I & Wu, H 2022, 'Microstructure, mechanical properties and biocompatibility of laser metal deposited Ti–23Nb coatings on a NiTi substrate', Materials Science and Engineering A, vol. 848, 143402. https://doi.org/10.1016/j.msea.2022.143402

85. Wei, X, Cao, X, Luan, JH, Jiao, ZB, Liu, CT & Zhang, ZW 2022, 'Synergy of strengthening and toughening of a Cu-rich precipitate-strengthened steel', Materials Science and Engineering A, vol. 832, 142487. https://doi.org/10.1016/j.msea.2021.142487

86. Zhang, M, Zhu, J, Wang, J, Jiao, Z & Li, Y 2022, 'Boosting electrochemical performance of Li-S batteries by cerium-based MOFs coated with polypyrrole', Journal of Alloys and Compounds, vol. 901, 163649. https://doi.org/10.1016/j.jallcom.2022.163649

87. Fang, JYC, Liu, WH, Yang, T, Wu, Y & Jiao, ZB 2022, 'Multicomponent Precipitation and Strengthening in Intermetallic-Strengthened Alloys', Frontiers in Materials, vol. 9, 931098. https://doi.org/10.3389/fmats.2022.931098

88. Niu, MC, Yang, K, Luan, JH, Wang, W & Jiao, ZB 2022, 'Cu-assisted austenite reversion and enhanced TRIP effect in maraging stainless steels', Journal of Materials Science and Technology, vol. 104, pp. 52-58. https://doi.org/10.1016/j.jmst.2021.06.055

89. Yuan, JL, Wu, YC, Liaw, PK, Luan, JH, Jiao, ZB, Li, J, Han, PD & Qiao, JW 2022, 'Remarkable cryogenic strengthening and toughening in nano-coherent CoCrFeNiTi0.2 high-entropy alloys via energetically-tuning polymorphous precipitates', Materials Science and Engineering A, vol. 842, 143111. https://doi.org/10.1016/j.msea.2022.143111

90. Luan, H, Zhang, X, Ding, H, Zhang, F, Luan, JH, Jiao, ZB, Yang, YC, Bu, H, Wang, R, Gu, J, Shao, C, Yu, Q, Shao, Y, Zeng, Q, Chen, N, Liu, CT & Yao, KF 2022, 'High-entropy induced a glass-to-glass transition in a metallic glass', Nature Communications, vol. 13, no. 1, 2183. https://doi.org/10.1038/s41467-022-29789-1

91. Ren, Y, Wu, H, Liu, B, Liu, Y, Guo, S, Jiao, ZB & Baker, I 2022, 'A comparative study on microstructure, nanomechanical and corrosion behaviors of AlCoCuFeNi high entropy alloys fabricated by selective laser melting and laser metal deposition', Journal of Materials Science and Technology, vol. 131, pp. 221-230. https://doi.org/10.1016/j.jmst.2022.05.035

92. Zhang, Y, Liu, L, Han, J, Yang, J, Luan, J, Jiao, Z, Liu, CT & Zhang, Z 2022, 'Irradiation-induced solute trapping by preexisting nanoprecipitates in high-strength low-alloy steel', Materials Science and Engineering A, vol. 849, 143510. https://doi.org/10.1016/j.msea.2022.143510

93. Zhou, B, Yu, CY, Yang, T, Luan, JH, Xu, XQ & Jiao, ZB 2022, 'Atomistic study of Al partitioning and its influence on nanoscale precipitation of Cu-rich nanocluster-strengthened steels', Materials Characterization, vol. 184, 111687. https://doi.org/10.1016/j.matchar.2021.111687

94. Luo, J, Hou, C, Tang, F, Han, T, Li, Y, Luan, J, Jiao, Z, Song, X & Nie, Z 2022, 'Strengthening nanocrystalline immiscible bimetallic composite by high-entropy effect', Composites Part B: Engineering, vol. 243, 110127. https://doi.org/10.1016/j.compositesb.2022.110127

95. Mo, YT, Wang, C, Zhang, SY, Liu, X, Zha, M, Luan, JH, Jiao, ZB & Wang, HY 2022, 'Achieving high strength-ductility synergy through high-density coherent precipitation in twin-roll cast Al–Zn–Mg–Cu strips', Materials Science and Engineering A, vol. 850, 143592. https://doi.org/10.1016/j.msea.2022.143592

96. Yang, L, Liang, D, Cheng, Z, Duan, R, Zhong, C, Luan, J, Jiao, Z & Ren, F 2022, 'Simultaneous enhancement of strength and ductility via microband formation and nanotwinning in an L12-strengthened alloy', Fundamental Research. https://doi.org/10.1016/j.fmre.2022.05.024

97. Zhang, J, Wang, X, Li, X, Zheng, Y, Liu, R, Luan, J, Jiao, Z, Dong, C & Liaw, PK 2022, 'Native Oxidation and Complex Magnetic Anisotropy-Dominated Soft Magnetic CoCrFeNi-Based High-Entropy Alloy Thin Films', Advanced Science, vol. 9, no. 33, 2203139. https://doi.org/10.1002/advs.202203139

98. Hu, H, Liu, X, Chen, J, Lu, H, Liu, C, Wang, H, Luan, J, Jiao, Z, Liu, Y & Song, X 2022, 'High-temperature mechanical behavior of ultra-coarse cemented carbide with grain strengthening', Journal of Materials Science and Technology, vol. 104, pp. 8-18. https://doi.org/10.1016/j.jmst.2021.06.067

99. Tang, L, Jiang, FQ, Wróbel, JS, Liu, B, Kabra, S, Duan, RX, Luan, JH, Jiao, ZB, Attallah, MM, Nguyen-Manh, D & Cai, B 2022, 'In situ neutron diffraction unravels deformation mechanisms of a strong and ductile FeCrNi medium entropy alloy', Journal of Materials Science and Technology, vol. 116, pp. 103-120. https://doi.org/10.1016/j.jmst.2021.10.034

100. Zhou, X, Wang, B, Zeng, T, Yan, W, Luan, J, Wang, W, Yang, K & Jiao, Z 2022, 'Effect of Pre-deformation on Nanoscale Precipitation and Hardness of a Maraging Stainless Steel', Acta Metallurgica Sinica (English Letters), vol. 35, no. 12, pp. 2089-2100. https://doi.org/10.1007/s40195-022-01440-4

101. Cao, BX, Xu, WW, Yu, CY, Wu, SW, Kong, HJ, Zhang, TL, Luan, JH, Xiao, B, Jiao, ZB, Liu, Y, Yang, T & Liu, CT 2022, 'L12-strengthened multicomponent Co-Al-Nb-based alloys with high strength and matrix-confined stacking-fault-mediated plasticity', Acta Materialia, vol. 229, 117763. https://doi.org/10.1016/j.actamat.2022.117763

102. Cao, BX, Wei, DX, Zhang, XF, Kong, HJ, Zhao, YL, Hou, JX, Luan, JH, Jiao, ZB, Liu, Y, Yang, T & Liu, CT 2022, 'Intermediate temperature embrittlement in a precipitation-hardened high-entropy alloy: The role of heterogeneous strain distribution and environmentally assisted intergranular damage', Materials Today Physics, vol. 24, 100653. https://doi.org/10.1016/j.mtphys.2022.100653

103. Liu, L, Zhang, Y, Li, J, Fan, M, Wang, X, Wu, G, Yang, Z, Luan, J, Jiao, Z, Liu, CT, Liaw, PK & Zhang, Z 2022, 'Enhanced strength-ductility synergy via novel bifunctional nano-precipitates in a high-entropy alloy', International Journal of Plasticity, vol. 153, 103235. https://doi.org/10.1016/j.ijplas.2022.103235

104. Yu, J, Wu, W, Zhang, H, Shao, R, Zhang, F, Wang, H, Li, Z, Luan, J, Jiao, Z, Liu, CT, Sun, B, Bai, H & Wang, W 2022, 'Robust spin glass state with exceptional thermal stability in a chemically complex alloy', Physical Review Materials, vol. 6, no. 9, L091401. https://doi.org/10.1103/PhysRevMaterials.6.L091401

105. He, DS, Huang, Y, Myers, BD, Isheim, D, Fan, X, Xia, GJ, Deng, Y, Xie, L, Han, S, Qiu, Y, Wang, YG, Luan, J, Jiao, Z, Huang, L, Dravid, VP & He, J 2022, 'Single-element amorphous palladium nanoparticles formed via phase separation', Nano Research, vol. 15, no. 6, pp. 5575-5580. https://doi.org/10.1007/s12274-022-4173-1

106. Arif, I, Lam, GCY, Leung, RCK & Naseer, MR 2022, 'Distributed surface compliance for airfoil tonal noise reduction at various loading conditions', Physics of Fluids, vol. 34, no. 4, 046113. https://doi.org/10.1063/5.0087350

107. Arif, I, Lam, GCY & Leung, RCK 2022, 'Coupled structural resonance of elastic panels for suppression of airfoil tonal noise', Journal of Fluids and Structures, vol. 110, 103506. https://doi.org/10.1016/j.jfluidstructs.2022.103506

108. Huang, G, Seid, KH, Yang, Z & Leung, RCK 2022, 'Interaction and acoustics of separated flows from a D-shaped bluff body', International Journal of Numerical Methods for Heat and Fluid Flow, vol. 32, no. 4, pp. 1186-1203. https://doi.org/10.1108/HFF-08-2021-0543

109. Li, J, Zuo, H, Shen, C & Leung, RCK 2022, 'Low frequency noise control in duct based on locally resonant membrane with attached resonators', JVC/Journal of Vibration and Control. https://doi.org/10.1177/10775463221085860

110. Chen, S & Li, M 2022, 'Improved turbidity estimation from local meteorological data for solar resourcing and forecasting applications', Renewable Energy, vol. 189, pp. 259-272. https://doi.org/10.1016/j.renene.2022.02.107

111. Chu, Y, Li, M, Pedro, HTC & Coimbra, CFM 2022, 'A network of sky imagers for spatial solar irradiance assessment',

Renewable Energy, vol. 187, pp. 1009-1019. https://doi.org/10.1016/j.renene.2022.01.032

112. Guo, S, Song, G, Li, M, Zhao, X, He, Y, Kurban, A, Ji, W & Wang, J 2022, 'Multi-objective bi-level quantity regulation scheduling method for electric-thermal integrated energy system considering thermal and hydraulic transient characteristics', Energy Conversion and Management, vol. 253, 115147. https://doi.org/10.1016/j.enconman.2021.115147

113. Liang, Z, Zhang, F, Li, M & Ma, C 2022, 'Formation and evolution characteristics of hydrothermal flames inside a transpiring wall reactor: A transient numerical investigation', Journal of Supercritical Fluids, vol. 188, 105692. https://doi.org/10.1016/j.supflu.2022.105692

114. Xie, Y, Li, C, Li, M, Liu, F & Taukenova, M 2022, 'An overview of deterministic and probabilistic forecasting methods of wind energy', iScience, pp. 105804. https://doi.org/10.1016/j.isci.2022.105804

115. Chen, S, Liang, Z, Guo, S & Li, M 2022, 'Estimation of high-resolution solar irradiance data using optimized semi-empirical satellite method and GOES-16 imagery', Solar Energy, vol. 241, pp. 404-415. https://doi.org/10.1016/j.solener.2022.06.013

116. Liu, X, Zhou, X, Liu, Q, Diao, J, Zhao, C, Li, L, Liu, Y, Xu, W, Daali, A, Harder, R, Robinson, IK, Dahbi, M, Alami, J, Chen, G, Xu, GL & Amine, K 2022, 'Multiscale Understanding of Surface Structural Effects on High-Temperature Operational Resiliency of Layered Oxide Cathodes', Advanced Materials, vol. 34, no. 4, 2107326. https://doi.org/10.1002/adma.202107326

117. Wu, J, Lin, C, Liang, Q, Zhou, G, Liu, J, Liang, G, Wang, M, Li, B, Hu, L, Ciucci, F, Liu, Q, Chen, G & Yu, X 2022, 'Sodium-rich NASICON-structured cathodes for boosting the energy density and lifespan of sodium-free-anode sodium metal batteries', InfoMat, vol. 4, no. 4, e12288. https://doi.org/10.1002/inf2.12288

118. Liu, Q, Liu, Y, Zhao, C, Weng, Q, Deng, J, Hwang, I, Jiang, Y, Sun, C, Li, T, Xu, W, Du, K, Daali, A, Xu, GL, Amine, K & Chen, G 2022, 'Conformal PEDOT Coating Enables Ultra-High-Voltage and High-Temperature Operation for Single-Crystal Ni-Rich Cathodes', ACS Nano, vol. 16, no. 9, pp. 14527-14538. https://doi.org/10.1021/acsnano.2c04959

119. Cui, J, Wu, T, Liu, Y, Fu, BM, Jin, Y & Zhu, Z 2022, 'A three-dimensional simulation of the dynamics of primary cilia in an oscillating flow', Applied Mathematical Modelling, vol. 108, pp. 825-839. https://doi.org/10.1016/j.apm.2022.04.024

120. Liu, S, Zhao, L & Liu, Y 2022, 'The Origin of Vasomotion and Stochastic Resonance in Vasomotion', Frontiers in Bioengineering and Biotechnology, vol. 10, 819716. https://doi.org/10.3389/fbioe.2022.819716

121. Zhang, K, Zhao, J, Liu, Y & Chen, S 2022, 'Analytical prediction of electrowetting-induced jumping motion for droplets on textured hydrophobic substrates: Effects of the wetting states', Physics of Fluids, vol. 34, no. 3, 032001. https://doi.org/10.1063/5.0082832

122. Esan, OC, Shi, X, Pan, Z, Liu, Y, Huo, X, An, L & Zhao, TS 2022, 'A high-performance H2O2-based fuel cell for air-free applications', Journal of Power Sources, vol. 548, 232114. https://doi.org/10.1016/j.jpowsour.2022.232114

123. Wu, C, Yan, W, Chen, R, Liu, Y & Li, G 2022, 'Numerical study on targeted delivery of magnetic drug particles in realistic human lung', Powder Technology, vol. 397, 116984. https://doi.org/10.1016/j.powtec.2021.11.028

124. Li, J, Zhang, K, Lin, C, Xiao, L, Liu, Y & Chen, S 2022, 'Many-body dissipative particle dynamics with energy conservation: temperature-dependent long-term attractive interaction', Applied Mathematics and Mechanics (English Edition), vol. 43, no. 4, pp. 497-506. https://doi.org/10.1007/s10483-022-2840-7

125. Zhao, J, Chen, S, Zhang, K, Cao, D & Liu, Y 2022, 'Numerical study on the bouncing dynamics of droplets impacting on a macro-textured superhydrophobic surface', Computers and Fluids, vol. 238, 105383. https://doi.org/10.1016/j.compfluid.2022.105383

126. Lin, C, Chen, S, Wei, P, Xiao, L, Zhao, D & Liu, Y 2022, 'Dynamic characteristics of droplet impact on vibrating superhydrophobic substrate', Physics of Fluids, vol. 34, no. 5, 052005. https://doi.org/10.1063/5.0090184

127. Choi, C, Ma, Y, Li, X, Chatterjee, S, Sequeira, S, Friesen, R, Felts, JR & Hipwell, MC 2022, 'Surface haptic rendering of virtual shapes through change in surface temperature', Science Robotics, vol. 7, no. 63, eabl4543, pp. eabl4543. https://doi.org/10.1126/scirobotics.abl4543

128. Yu, D & Ma, Y 2022, 'Investigations of fast vacuum pump-down processes between parallel isothermal disks', IEEE Transactions on Semiconductor Manufacturing, vol. 35, Issue 3, pp. 556-568. https://doi.org/10.1109/TSM.2022.3177697

129. Chao, PCP, Kim, W & Ma, Y 2022, 'ASME ISPS 2021 editorial: the 30th ASME annual conference on information storage and processing systems, an on-line conference, USA', Microsystem Technologies, vol. 28, no. 10, pp. 2169-2170. https://doi.org/10.1007/s00542-022-05380-y

130. Ma, X, Kudtarkar, K, Chen, Y, Cunha, P, Ma, Y, Watanabe, K, Taniguchi, T, Qian, X, Hipwell, MC, Wong, ZJ & Lan, S 2022, 'Coherent momentum control of forbidden excitons', Nature Communications, vol. 13, no. 1, 6916. https://doi.org/10.1038/s41467-022-34740-5

131. Hu, L, Navarro-Alarcon, D, Cherubini, A, Li, M & Li, L 2022, 'On Radiation-Based Thermal Servoing: New Models, Controls, and Experiments', IEEE Transactions on Robotics, vol. 38, no. 3, pp. 1945 - 1958. https://doi.org/10.1109/TRO.2021.3119399

132. Romero, JG, Navarro-Alarcon, D, Nuno, E & Que, H 2022, 'A Globally Convergent Adaptive Velocity Observer for Nonholonomic Mobile Robots Affected by Unknown Disturbances', IEEE Control Systems Letters, vol. 7, pp. 85-90. https://doi.org/10.1109/LCSYS.2022.3186621

133. Muddassir, M, Limbert, G & Navarro-Alarcon, D 2022, 'Development of a numerical multi-layer model of skin subjected to pulsed laser irradiation to optimise thermal stimulation in photorejuvenation procedure', Computer Methods and Programs in Biomedicine, vol. 216, 106653. https://doi.org/10.1016/j.cmpb.2022.106653

134. Victorova, M, Lee, MKS, Navarro-Alarcon, D & Zheng, Y 2022, 'Follow the Curve: Robotic Ultrasound Navigation with Learning Based Localization of Spinous Processes for Scoliosis Assessment', IEEE Access, vol. 10, pp. 40216-40229. https://doi.org/10.1109/ACCESS.2022.3165936

135. Zhu, J, Cherubini, A, Dune, C, Navarro-Alarcon, D, Alambeigi, F, Berenson, D, Ficuciello, F, Harada, K, Kober, J, LI, X, Pan, J, Yuan, W & Gienger, M 2022, 'Challenges and Outlook in Robotic Manipulation of Deformable Objects', IEEE Robotics and Automation Magazine, vol. 29, no. 3, pp. 67-77. https://doi.org/10.1109/MRA.2022.3147415

136. Huo, S, Zhang, B, Muddassir, M, Chik, DTW & Navarro-Alarcon, D 2022, 'A Sensor-Based Robotic Line Scan System with Adaptive ROI for Inspection of Defects over Convex Free-Form Specular Surfaces', IEEE Sensors Journal, vol. 22, no. 3, pp. 2782 - 2792. https://doi.org/10.1109/JSEN.2021.3132428

137. Muddassir, M, Gomez Dominguez, D, Hu, L, Chen, S & Navarro-Alarcon, D 2022, 'Robotics Meets Cosmetic Dermatology: Development of a Novel Vision-Guided System for Skin Photo-Rejuvenation', IEEE/ASME Transactions on Mechatronics, vol. 27, no. 2, pp. 666 - 677. https://doi.org/10.1109/TMECH.2021.3075207

138. Zahra, O, Tolu, S, Zhou, P, Duan, A & Navarro-Alarcon, D 2022, 'A Bio-Inspired Mechanism for Learning Robot Motion From Mirrored Human Demonstrations', Frontiers in Neurorobotics, vol. 16, 826410. https://doi.org/10.3389/fnbot.2022.826410

139. Duan, A, Victorova, M, Zhao, J, Sun, Y, Zheng, Y & Navarro-Alarcon, D 2022, 'Ultrasound-Guided Assistive Robots for Scoliosis Assessment With Optimization-Based Control and Variable Impedance', IEEE Robotics and Automation Letters, vol. 7, no. 3, pp. 8106-8113. https://doi.org/10.1109/LRA.2022.3186504

140. Hu, L, Duan, A, Li, M, Cherubini, A, Li, L & Navarro-Alarcon, D 2022, 'Paint With the Sun: A Thermal-Vision Guided Robot to Harness Solar Energy for Heliography', IEEE Sensors Journal, vol. 22, no. 18, pp. 18130-18142. https://doi.org/10.1109/JSEN.2022.3195069

141. Ma, W, Zhang, B, Han, L, Huo, S, Wang, H & Navarro-Alarcon, D 2022, 'Action Planning for Packing Long Linear Elastic Objects Into Compact Boxes With Bimanual Robotic Manipulation', IEEE/ASME Transactions on Mechatronics, pp. 1-12. https://doi.org/10.1109/TMECH.2022.3223990

142. Muddassir, M, Limbert, G, Zhang, B, Duan, A, Tan, JJ & Navarro-Alarcon, D 2022, 'Model Predictive Thermal Dose Control of a Robotic Laser System to Automate Skin Photorejuvenation', IEEE/ASME Transactions on Mechatronics, pp. 1-11. https://doi.org/10.1109/TMECH.2022.3218806

143. Huo, S, Duan, A, Li, C, Zhou, P, Ma, W, Wang, H & Navarro-Alarcon, D 2022, 'Keypoint-Based Planar Bimanual Shaping of Deformable Linear Objects under Environmental Constraints with Hierarchical Action Framework', IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 5222-5229. https://doi.org/10.1109/LRA.2022.3154842

144. Akhtar, A & Ruan, H 2022, 'Review on thin film coatings for precision glass molding', Surfaces and Interfaces, vol. 30, 101903. https://doi.org/10.1016/j.surfin.2022.101903

145. Fu, Y & Ruan, H 2022, 'Experimental and theoretical investigations of a novel electret-based wave energy converter', Nano Energy, vol. 103, 107854. https://doi.org/10.1016/j.nanoen.2022.107854

146. Li, Q, Zhu, L & Ruan, H 2022, 'Electromagnetic–Thermo–Mechanical Coupling Behavior of Cu/Si Layered Thin Plate Under Pulsed Magnetic Field', Acta Mechanica Solida Sinica, vol. 35, no. 1, pp. 90-100. https://doi.org/10.1007/s10338-021-00250-y

147. Lin, C, Liu, K, Ruan, H & Wang, B 2022, 'Mechano-electrochemical phase field modeling for formation and modulation of dendritic Pattern: Application to uranium recovery from spent nuclear fuel', Materials and Design, vol. 213, 110322. https://doi.org/10.1016/j.matdes.2021.110322

148. Lin, C, Wang, J, Hung, K, Wong, EYC & Ruan, H 2022, 'Modeling of ion exchange in glass considering large viscoelastic deformation and mechano–electrochemical coupling', Journal of the American Ceramic Society, vol. 105, no. 8, pp. 5190-5202. https://doi.org/10.1111/jace.18496

149. Zhang, Y, Fan, J, Gan, B, Guo, X, Ruan, H & Zhu, L 2022, 'Constitutive modeling of mechanical behaviors in gradient nanostructured alloys with hierarchical dual-phased microstructures', Acta Mechanica, vol. 233, no. 8, pp. 3197-3212. https://doi.org/10.1007/s00707-022-03271-x

150. Akhtar, A, Wang, J, He, R, Yi Chun Wong, E, Hung, K & Ruan, H 2022, 'Microstructural evaluation of sputtered Ru–Pt multilayer anti-stick coatings for glass molding', Materials and Design, vol. 220, 110898. https://doi.org/10.1016/j.matdes.2022.110898

151. Yang, M, Li, W, Liu, X, Wang, H, Wu, Y, Wang, X, Zhang, F, Zeng, Q, Ma, D, Ruan, H & Lu, Z 2022, 'Configurational Entropy Effects on Glass Transition in Metallic Glasses', Journal of Physical Chemistry Letters, vol. 13, no. 33, pp. 7889-7897. https://doi.org/10.1021/acs.jpclett.2c01234

152. Sun, W, Wu, B, Fu, H, Yang, XS, Qiao, X, Zheng, M, He, Y, Lu, J & Shi, SQ 2022, 'Combining gradient structure and supersaturated solid solution to achieve superior mechanical properties in WE43 magnesium alloy', Journal of Materials Science and Technology, vol. 99, pp. 223-238. https://doi.org/10.1016/j.jmst.2021.04.074

153. Cao, M, Lu, Q, Su, Z, Radzieński, M, Xu, W & Ostachowicz, W 2022, 'A nonlinearity-sensitive approach for detection of "breathing" cracks relying on energy modulation effect', Journal of Sound and Vibration, vol. 524, 116754. https://doi.org/10.1016/j.jsv.2022.116754

154. Chen, Y, Lan, Z, Su, Z & Zhu, J 2022, 'Inverse design of photonic and phononic topological insulators: A review', Nanophotonics. Vol.11, no. 19, pp.4347-4362. https://doi.org/10.1515/nanoph-2022-0309

155. He, Y, Xiao, Y, Su, Z, Pan, Y & Zhang, Z 2022, 'Contact acoustic nonlinearity effect on the vibro-acoustic modulation of delaminated composite structures', Mechanical Systems and Signal Processing, vol. 163, 108161. https://doi.org/10.1016/j.ymssp.2021.108161

156. Gu, Z, Gao, H, Xue, H, Li, J, Su, Z & Zhu, J 2022, 'Transient non-Hermitian skin effect', Nature Communications, vol. 13, no. 1, 7668. https://doi.org/10.1038/s41467-022-35448-2

157. Li, Y, Wang, K, Feng, W, Wu, H, Su, Z & Guo, S 2022, 'Insight into excitation and acquisition mechanism and mode control of Lamb waves with piezopolymer coating-based array transducers: Analytical and experimental analysis', Mechanical Systems and Signal Processing, vol. 178, 109330. https://doi.org/10.1016/j.ymssp.2022.109330

158. Wang, Z, Zhang, S, Li, Y, Wang, Q, Su, Z & Yue, D 2022, 'A Cross-Scanning Crack Damage Quantitative Monitoring and Imaging Method', IEEE Transactions on Instrumentation and Measurement, vol. 71, 9600610. https://doi.org/10.1109/TIM.2022.3188031

159. Yang, X, Wang, K, Zhou, P, Xu, L & Su, Z 2022, 'Imaging damage in plate waveguides using frequency-domain multiple signal classification (F-MUSIC)', Ultrasonics, vol. 119, 106607. https://doi.org/10.1016/j.ultras.2021.106607

160. Gao, H, Xue, H, Gu, Z, Li, L, Zhu, W, Su, Z, Zhu, J, Zhang, B & Chong, YD 2022, 'Anomalous Floquet non-Hermitian skin effect in a ring resonator lattice', Physical Review B, vol. 106, no. 13, 134112. https://doi.org/10.1103/PhysRevB.106.134112

161. Guo, S, Ding, H, Li, Y, Feng, H, Xiong, X, Su, Z & Feng, W 2022, 'A hierarchical deep convolutional regression framework with sensor network fail-safe adaptation for acoustic-emission-based structural health monitoring', Mechanical Systems and Signal Processing, vol. 181, 109508. https://doi.org/10.1016/j.ymssp.2022.109508

162. Yang, J, Su, Y, He, Y, Zhou, P, Xu, L & Su, Z 2022, 'Machine learning-enabled resolution-lossless tomography for composite structures with a restricted sensing capability', Ultrasonics, vol. 125, 106801. https://doi.org/10.1016/j.ultras.2022.106801

163. Su, Y, Xu, L, Zhou, P, Yang, J, Wang, K, Zhou, LM & Su, Z 2022, 'In situ cure monitoring and In-service impact localization of FRPs using Pre-implanted nanocomposite sensors', Composites Part A: Applied Science and Manufacturing, vol. 154, 106799. https://doi.org/10.1016/j.compositesa.2021.106799

164. Fan, H, Gao, H, An, S, Gu, Z, Chen, Y, Huang, S, Liang, S, Zhu, J, Liu, T & Su, Z 2022, 'Observation of non-Hermiticity-induced topological edge states in the continuum in a trimerized elastic lattice', Physical Review B, vol. 106, no. 18, L180302. https://doi.org/10.1103/PhysRevB.106.L180302

165. Zeng, Z, Wu, N, Yang, W, Xu, H, Liao, Y, Li, C, Luković, M, Yang, Y, Zhao, S, Su, Z & Lu, X 2022, 'Sustainable-Macromolecule-Assisted Preparation of Cross-linked, Ultralight, Flexible Graphene Aerogel Sensors toward Low-Frequency Strain/Pressure to High-Frequency Vibration Sensing', Small, vol. 18, no. 24, 2202047. https://doi.org/10.1002/smll.202202047

166. Bhutta, MUM, Sun, Y, Lau, D & Liu, M 2022, 'Why-So-Deep: Towards Boosting Previously Trained Models for Visual Place Recognition', IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 1824-1831. https://doi.org/10.1109/LRA.2022.3142741

167. Cai, P, Wang, H, Sun, Y & Liu, M 2022, 'DQ-GAT: Towards Safe and Efficient Autonomous Driving with Deep Q-Learning and Graph Attention Networks', IEEE Transactions on Intelligent Transportation Systems, vol. 23, no. 11, pp. 21102-21112. https://doi.org/10.1109/TITS.2022.3184990

168. Gao, S, Wang, Q & Sun, Y 2022, 'S2G2: Semi-Supervised Semantic Bird-Eye-View Grid-Map Generation Using a Monocular Camera for Autonomous Driving', IEEE Robotics and Automation Letters, vol. 7, no. 4, pp. 11974-11981. https://doi.org/10.1109/LRA.2022.3208377

169. Sun, X, Wang, M, Lin, R, Sun, Y & Shin Cheng, S 2022, 'Deep-Learned Perceptual Quality Control for Intelligent Video Communication', IEEE Transactions on Consumer Electronics, vol. 68, no. 4, pp. 354-365. https://doi.org/10.1109/TCE.2022.3206114

170. Xu, Z, Liu, Y, Gan, L, Sun, Y, Wu, X, Liu, M & Wang, L 2022, 'RNGDet: Road Network Graph Detection by Transformer in Aerial Images', IEEE Transactions on Geoscience and Remote Sensing, vol. 60, 4707612. https://doi.org/10.1109/TGRS.2022.3186993

171. Xu, Z, Liu, Y, Gan, L, Hu, X, Sun, Y, Liu, M & Wang, L 2022, 'CsBoundary: City-Scale Road-Boundary Detection in Aerial Images for High-Definition Maps', IEEE Robotics and Automation Letters, vol. 7, no. 2, pp. 5063-5070. https://doi.org/10.1109/LRA.2022.3154052

172. Feng, Z, Guo, Y, Liang, Q, Bhutta, MUM, Wang, H, Liu, M & Sun, Y 2022, 'MAFNet: Segmentation of Road Potholes With Multimodal Attention Fusion Network for Autonomous Vehicles', IEEE Transactions on Instrumentation and Measurement, vol. 71, 3523712. https://doi.org/10.1109/TIM.2022.3200100

173. Bi, X, Tang, H & Zhu, Q 2022, 'Feasibility of hydrodynamically activated valves for salp-like propulsion', Physics of Fluids, vol. 34, no. 10, 101903. https://doi.org/10.1063/5.0126809

174. Bi, X, Tang, H & Zhu, Q 2022, 'Valve-mediated flow control in salp-like locomotion', Physics of Fluids, vol. 34, no. 5, 051913. https://doi.org/10.1063/5.0096004

175. Wang, C, Tang, H & Zhang, X 2022, 'Fluid-structure interaction of bio-inspired flexible slender structures: a review of selected topics', Bioinspiration & biomimetics, vol. 17, no. 4, 041002. https://doi.org/10.1088/1748-3190/ac68ba

176. Gao, L, Liu, Y, Tang, H & Deng, W 2022, 'Response of ~100 micron water jets to intense nanosecond laser blasts', Physical Review Fluids, vol. 7, no. 3, 034001. https://doi.org/10.1103/PhysRevFluids.7.034001

177. Wang, H, Zhao, C, Zeng, L, Mahbub Alam, M & Tang, H 2022, 'Control of the flow around a finite square cylinder with a flexible plate attached at the free end', Physics of Fluids, vol. 34, no. 2, 027109. https://doi.org/10.1063/5.0082181

178. Wang, H, Xu, D, Li, L, Zhou, K, Wen, X & Tang, H 2022, 'Evolution and Near-Wall Effect of the Vortex Structures Induced by In-Line Twin Synthetic Jets in a Crossflow', Actuators, vol. 11, no. 8, 234. https://doi.org/10.3390/act11080234

179. Wang, Z, Wang, C, Zhao, F, Qi, N, Lockington, D, Ramaesh, K, Stewart, PS, Luo, X & Tang, H 2022, 'Simulation of fluid-structure interaction during the phaco-emulsification stage of cataract surgery', International Journal of Mechanical Sciences, vol. 214, 106931. https://doi.org/10.1016/j.ijmecsci.2021.106931

180. Mesdjian, O, Wang, C, Gsell, S, D'Ortona, U, Favier, J, Viallat, A & Loiseau, E 2022, 'Longitudinal to Transverse Metachronal Wave Transitions in an in Vitro Model of Ciliated Bronchial Epithelium', Physical Review Letters, vol. 129, no. 3, 038101. https://doi.org/10.1103/PhysRevLett.129.038101

181. Jiang, Q, Ren, F, Wang, C, Wang, Z, Kefayati, G, Kenjeres, S, Vafai, K, Liu, Y & Tang, H 2022, 'On the magnetic nanoparticle injection strategy for hyperthermia treatment', International Journal of Mechanical Sciences, vol. 235, 107707. https://doi.org/10.1016/j.ijmecsci.2022.107707

182. Cui, M, Zhang, C, Mo, J & Wang, Z 2022, 'A general strategy to achieve high-fidelity electron-ion transduction', Matter, vol. 5, no. 12, pp. 4107-4109. https://doi.org/10.1016/j.matt.2022.10.018

183. Peng, Z, Shi, J, Xiao, X, Hong, Y, Li, X, Zhang, W, Cheng, Y, Wang, Z, Li, WJ, Chen, J, Leung, MKH & Yang, Z 2022, 'Self-charging electrostatic face masks leveraging triboelectrification for prolonged air filtration', Nature Communications, vol. 13, no. 1, 7835. https://doi.org/10.1038/s41467-022-35521-w

184. Xu, W, Jin, Y, Li, W, Song, Y, Gao, S, Zhang, B, Wang, L, Cui, M, Yan, X & Wang, Z 2022, 'Triboelectric wetting for continuous droplet transport', Science advances, vol. 8, no. 51, eade2085. https://doi.org/10.1126/sciadv.ade2085

185. Xiang, B, Li, Z & Wong, W 2022, 'Stiffness identification of magnetic suspension system based on zero-displacement and zero-current models', Mechanical Systems and Signal Processing, vol. 171, 108901. https://doi.org/10.1016/j.ymssp.2022.108901

186. Xiang, B, Wang, X & Wong, WO 2022, 'Process control of charging and discharging of magnetically suspended flywheel energy storage system', Journal of Energy Storage, vol. 47, 103629. https://doi.org/10.1016/j.est.2021.103629

187. Xu, Z & Wu, M 2022, 'Toward Dendrite-Free Deposition in Zinc-Based Flow Batteries: Status and Prospects', Batteries, vol. 8, no. 9, 117. https://doi.org/10.3390/batteries8090117

188. Lin, PZ, Sun, J, Wu, MC & Zhao, TS 2022, 'A multiscale model for proton exchange membrane fuel cells with order-structured catalyst layers', International Journal of Heat and Mass Transfer, vol. 195, 123092. https://doi.org/10.1016/j.ijheatmasstransfer.2022.123092

189. Jian, Q, Wang, T, Sun, J, Wu, M & Zhao, T 2022, 'In-situ construction of fluorinated solid-electrolyte interphase for highly reversible zinc anodes', Energy Storage Materials, vol. 53, pp. 559-568. https://doi.org/10.1016/j.ensm.2022.08.033

190. Lin, PZ, Sun, J, Shao, MH, Wu, MC & Zhao, TS 2022, 'Modeling proton exchange membrane fuel cells with fiber-based microporous layers', International Journal of Heat and Mass Transfer, vol. 198, 123398. https://doi.org/10.1016/j.ijheatmasstransfer.2022.123398

191. Zhang, L, Lin, Y, Peng, X, Wu, M & Zhao, T 2022, 'A High-Capacity Polyethylene Oxide-Based All-Solid-State Battery Using a Metal–Organic Framework Hosted Silicon Anode', ACS applied materials & interfaces, vol. 14, no. 21, pp. 24798–24805. https://doi.org/10.1021/acsami.2c04487

192. Lin, Y, Wang, T, Zhang, L, Peng, X, Huang, B, Wu, M & Zhao, T 2022, 'In-situ forming lithiophilic-lithiophobic gradient interphases for dendrite-free all-solid-state Li metal batteries', Nano Energy, vol. 99, 107395. https://doi.org/10.1016/j.nanoen.2022.107395

193. Yao, H & Zhang, C 2022, 'A generalized solution to the combo-crack problem—I. Pressure load on crack surface', Journal of the Mechanics and Physics of Solids, vol. 159, 104783. https://doi.org/10.1016/j.jmps.2022.104783

194. Yao, H & Zhang, C 2022, 'A generalized solution to the combo-crack problem—II. Remote load', Journal of the Mechanics and Physics of Solids, vol. 164, 104919. https://doi.org/10.1016/j.jmps.2022.104919

195. Zhang, J, Yao, H, Mo, J, Chen, S, Xie, Y, Ma, S, Chen, R, Luo, T, Ling, W, Qin, L, Wang, Z & Zhou, W 2022, 'Finger-inspired rigid-soft hybrid tactile sensor with superior sensitivity at high frequency', Nature Communications, vol. 13, no. 1, 5076. https://doi.org/10.1038/s41467-022-32827-7

196. Lin, J, Xie, Y, Li, M, Qian, J & Yao, H 2022, 'Harnessing impact-induced cracking via stiffness heterogeneity', Composites Science and Technology, vol. 223, 109440. https://doi.org/10.1016/j.compscitech.2022.109440

197. Lyu, L, Hu, J, Cheng, K, Lin, D, Li, K, Lu, Z, Yao, H & Zhou, L 2022, 'Insights into self-induced electrochemical activation of carbon cathode', Carbon, vol. 188, pp. 177-186. https://doi.org/10.1016/j.carbon.2021.11.064

198. Vellwock, AE, Su, P, Zhang, Z, Feng, D & Yao, H 2022, 'Reconciling the Conflict between Optical Transparency and Fouling Resistance with a Nanowrinkled Surface Inspired by Zebrafish's Cornea', ACS Applied Materials and Interfaces, vol. 14, no. 6, pp. 7617-7625. https://doi.org/10.1021/acsami.1c22205

199. Huang, X, Fu, J, Tan, H, Miu, Y, Xu, M, Zhao, Q, Xie, Y, Sun, S, Yao, H & Zhang, L 2022, 'Molecular movements of trehalose inside a single network enabling a rapidly-recoverable tough hydrogel', International Journal of Smart and Nano Materials, vol. 13, no. 4, pp. 575-596. https://doi.org/10.1080/19475411.2022.2116735

200. Li, X, Yu, X & Zhai, W 2022, 'Less Is More: Hollow-Truss Microlattice Metamaterials with Dual Sound Dissipation Mechanisms and Enhanced Broadband Sound Absorption', Small, vol. 18, no. 44, 2204145. https://doi.org/10.1002/smll.202204145

201. Lv, Y, Huang, S, Lu, S, Ding, W, Yu, X, Liang, G, Zou, J, Kang, F, Zhang, J & Cao, Y 2022, 'B2O3/LiBO2 dual-modification layer stabilized Ni-rich cathode for lithium-ion battery', Journal of Power Sources, vol. 536, 231510. https://doi.org/10.1016/j.jpowsour.2022.231510

202. Ma, T, Ren, X, Hu, L, Teng, W, Wang, X, Wu, G, Liu, J, Nan, D & Yu, X 2022, 'Functional Polymer Materials for Advanced Lithium Metal Batteries: A Review and Perspective', Polymers, vol. 14, no. 17, 3452. https://doi.org/10.3390/polym14173452

203. Ma, T, Ren, X, Hu, L, Teng, W, Wang, X, Wu, G, Liu, J, Nan, D, Li, B & Yu, X 2022, 'A Diluted Electrolyte for Long-Life Sulfurized Polyacrylonitrile-Based Anode-Free Li-S Batteries', Polymers, vol. 14, no. 16, 3312. https://doi.org/10.3390/polym14163312

204. Zhong, G, Ma, J, Jia, T, Cai, K, Huang, S, Ren, X, Yin, R, Yu, K, He, Y, Qiu, L, Ding, W, Yu, X, Kang, F & Cao, Y 2022, 'Triazine crosslinked polyionic liquid: An electrolyte-stable, lithiophilic and electrostatic shielding layer for uniform lithium plating/stripping', Nano Energy, vol. 103, 107828. https://doi.org/10.1016/j.nanoen.2022.107828

205. Zhai, Y, Han, P, Yun, Q, Ge, Y, Zhang, X, Chen, Y & Zhang, H 2022, 'Phase engineering of metal nanocatalysts for electrochemical CO2 reduction', eScience, vol. 2, no. 5, pp. 467-485. https://doi.org/10.1016/j.esci.2022.09.002

206. Wang, J, Zhai, Y, Dang, F, Zhao, L, Xia, Q, Li, D, Zhang, D & Zhang, X 2022, 'Iridium-Decorated Carbon Nanotubes as Cathode Catalysts for Li-CO2 Batteries with a Highly Efficient Direct Li2CO3 Formation/Decomposition Capability', Materials Lab. Vol. 1, 220010. https://doi.org/10.54227/mlab.20220010

207. Li, L, Yun, Q, Zhu, C, Sheng, G, Guo, J, Chen, B, Zhao, M, Zhang, Z, Lai, Z, Zhang, X, Peng, Y, Zhu, Y & Zhang, H 2022, 'Isoreticular Series of Two-Dimensional Covalent Organic Frameworks with the kgd Topology and Controllable Micropores', Journal of the American Chemical Society, vol. 144, no. 14, pp. 6475-6482. https://doi.org/10.1021/jacs.2c01199

208. Li, T & Zheng, G 2022, 'The Anelastic Behaviors of Co–Fe–Ni–P Metallic Nano-glasses: Studies on the Viscous Glass–Glass Interfaces', Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, vol. 53, no. 10, pp. 3736-3748. https://doi.org/10.1007/s11661-022-06781-4

209. Li, T & Zheng, G 2022, 'The influences of glass-glass interfaces and Ni additions on magnetic properties of transition-metal phosphide nano-glasses', AIP Advances, vol. 12, no. 8, 085229. https://doi.org/10.1063/5.0088043

210. Liu, Y & Zheng, G 2022, 'The design of aluminum-matrix composites reinforced with AlCoCrFeNi high-entropy alloy nanoparticles by first-principles studies on the properties of interfaces', Nanomaterials, vol. 12, no. 13, 2157. https://doi.org/10.3390/nano12132157

211. Qiu, S, Zheng, G & Jiao, ZB 2022, 'Alloying effects on phase stability, mechanical properties, and deformation behavior of CoCrNi-based medium-entropy alloys at low temperatures', Intermetallics, vol. 140, 107399. https://doi.org/10.1016/j.intermet.2021.107399

212. Yang, W & Zheng, G 2022, 'High energy storage density and efficiency in nanostructured (Bi0.2Na0.2K0.2La0.2Sr0.2)TiO3 high-entropy ceramics', Journal of the American Ceramic Society, vol. 105, no. 2, pp. 1083-1094. https://doi.org/10.1111/jace.18129

213. Yang, W & Zheng, G 2022, 'Tunning the dielectric and energy storage properties of high entropy ceramics (Bi0.2Na0.2K0.2La0.2Sr0.2)(Ti1-xScx)O3 by Sc-doping at B-site in perovskite structure', Journal of Electroceramics, vol. 49, no. 2, pp. 53-62. https://doi.org/10.1007/s10832-022-00292-9

214. Jiang, S, Yin, H & Zheng, G 2022, 'Monolayer GaOCl: a novel wide-bandgap 2D material with hole-doping-induced ferromagnetism and multidirectional piezoelectricity', Nanoscale, vol. 14, no. 31, pp. 11369-11377. https://doi.org/10.1039/D2NR02821B

215. Yang, W, Uddin, S, Zaman, A & Zheng, G 2022, 'The influences of B-site doping on ferroelectric and energy-storage properties of Bi0.5(Na0.82K0.18)0.5TiO3–LiSbO3 ceramics', Physica Scripta, vol. 97, no. 8, 085404. https://doi.org/10.1088/1402-4896/ac82d1

216. Cheng, J, Zhang, H, Ning, M, Raza, H, Zhang, D, Zheng, G, Zheng, Q & Che, R 2022, 'Emerging Materials and Designs for Low- and Multi-Band Electromagnetic Wave Absorbers: The Search for Dielectric and Magnetic Synergy?', Advanced Functional Materials, vol. 32, no. 23, 2200123. https://doi.org/10.1002/adfm.202200123

217. Hou, C, Cheng, J, Zhang, H, Lu, Z, Yang, X, Zheng, G, Zhang, D & Cao, M 2022, 'Biomass-derived carbon-coated WS2 core-shell nanostructures with excellent electromagnetic absorption in C-band', Applied Surface Science, vol. 577, 151939. https://doi.org/10.1016/j.apsusc.2021.151939

218. Zhang, H, Cheng, J, Wang, H, Huang, Z, Zheng, Q, Zheng, G, Zhang, D, Che, R & Cao, M 2022, 'Initiating VB-Group Laminated NbS2 Electromagnetic Wave Absorber toward Superior Absorption Bandwidth as Large as 6.48 GHz through Phase Engineering Modulation', Advanced Functional Materials, vol. 32, no. 6, 2108194. https://doi.org/10.1002/adfm.202108194

219. Cheng, J, Zhang, H, Wang, H, Huang, Z, Raza, H, Hou, C, Zheng, G, Zhang, D, Zheng, Q & Che, R 2022, 'Tailoring Self-Polarization of Bimetallic Organic Frameworks with Multiple Polar Units Toward High-Performance Consecutive Multi-Band Electromagnetic Wave Absorption at Gigahertz', Advanced Functional Materials, vol. 32, no. 24, 2201129. https://doi.org/10.1002/adfm.202201129

220. Huang, Z, Cheng, J, Zhang, H, Xiong, Y, Zhou, Z, Zheng, Q, Zheng, G, Zhang, D & Cao, M 2022, 'High-performance microwave absorption enabled by Co3O4 modified VB-group laminated VS2 with frequency modulation from S-band to Ku-band', Journal of Materials Science and Technology, vol. 107, pp. 155-164. https://doi.org/10.1016/j.jmst.2021.08.005

221. Shi, X, Jiang, S, Han, X, Wei, M, Wang, B, Zhao, G, Zheng, GP & Yin, H 2022, 'Ultrahigh mechanical flexibility induced superior piezoelectricity of InSeBr-type 2D Janus materials', Physical Chemistry Chemical Physics, vol. 24, no. 14, pp. 8371-8377. https://doi.org/10.1039/d2cp00918h

222. Cheng, J, Li, C, Xiong, Y, Zhang, H, Raza, H, Ullah, S, Wu, J, Zheng, G, Cao, Q, Zhang, D, Zheng, Q & Che, R 2022, 'Recent Advances in Design Strategies and Multifunctionality of Flexible Electromagnetic Interference Shielding Materials', Nano-Micro Letters, vol. 14, no. 1, 80. https://doi.org/10.1007/s40820-022-00823-7

223. Zhang, H, Liu, T, Huang, Z, Cheng, J, Wang, H, Zhang, D, Ba, X, Zheng, G, Yan, M & Cao, M 2022, 'Engineering flexible and green electromagnetic interference shielding materials with high performance through modulating WS2 nanosheets on carbon fibers', Journal of Materiomics, vol. 8, no. 2, pp. 327-334. https://doi.org/10.1016/j.jmat.2021.09.003

224. Zhou, Z, Yang, X, Zhang, D, Zhang, H, Cheng, J, Xiong, Y, Huang, Z, Wang, H, Zhang, P, Zheng, G & Cao, M 2022, 'Achieving superior GHz-absorption performance in VB-group laminated VS2 microwave absorber with dielectric and magnetic synergy effects', Advanced Composites and Hybrid Materials, vol. 5, no. 3, pp. 2317-2327. https://doi.org/10.1007/s42114-022-00416-3

225. Chen, Y, Li, J & Zhu, J 2022, 'Topology optimization of quantum spin Hall effect-based second-order phononic topological insulator', Mechanical Systems and Signal Processing, vol. 164, 108243. https://doi.org/10.1016/j.ymssp.2021.108243

226. Gao, H, Gu, Z, Liang, S, Liu, T, Zhu, J & Su, Z 2022, 'Enhancing ultrasound transmission and focusing through a stiff plate with inversely optimized auxiliary meta-lens', Applied Physics Letters, vol. 120, no. 11, 111701. https://doi.org/10.1063/5.0085462

227. Pan, Z, Khalid, F, Tahir, A, Esan, OC, Zhu, J, Chen, R & An, L 2022, 'Water flooding behavior in flow cells for ammonia production via electrocatalytic nitrogen reduction', Fundamental Research, vol. 2, no. 5, pp. 757-763. https://doi.org/10.1016/j.fmre.2021.09.001

Conference Proceedings:

1. Li, X, Zhai, W & Yu, X 2022, "Additively Manufactured Microlattices for Sound Absorption", 28th International Congress on Sound and Vibration, ICSV 2022, 24-28 July 2022, Singapore, 187016.

2. Li, X, Ma, Y, Guo, Y & Hipwell, MC 2022, "Consumer Product Design for Tactile Perception: Multiphysics and Variability in the Finger-Material Interface", 2022 IEEE Haptics Symposium (HAPTICS). 21-24 March 2022, Santa Barbara, CA, USA, https://doi.org/10.1109/HAPTICS52432.2022.9765603

3. Ma, W, Zhu, J & Navarro-Alarcon, D 2022, "Shape Control of Elastic Objects Based on Implicit Sensorimotor Models and Data-Driven Geometric Features", 16th International Conference on Intelligent Autonomous Systems, IAS-16 2020, 22-25 June 2021, Virtual, Online, pp. 518-531. https://doi.org/10.1007/978-3-030-95892-3_40

4. Zhang, T, Hu, L, Sun, Y, Li, L & Navarro-Alarcon, D 2022, "Computing Thermal Point Clouds by Fusing RGB-D and Infrared Images: From Dense Object Reconstruction to Environment Mapping", 2022 IEEE International Conference on Robotics and Biomimetics, ROBIO 2022, 05-09 December 2022, Jinghong, China, pp. 1707-1714. https://doi.org/10.1109/ROBIO55434.2022.10011817

5. Naseer, MR, Arif, I, Lam, GCY & Leung, RCK 2022, "Effect of Flow-Induced Surface Vibration on Deep Cavity Aeroacoustics", 28th AIAA/CEAS Aeroacoustics Conference, 2022, 14-17 June 2022, Southampton, United Kingdom, AIAA 2022-2958. https://doi.org/10.2514/6.2022-2958

6. Akbar, MA & Wong, WO 2022, "A Pendulum Type Particle Impact Damper", International Conference on Applied Nonlinear Dynamics, Vibration and Control, ICANDVC 2021, 23-25 August 2021, Hong Kong, pp. 739-750. https://doi.org/10.1007/978-981-16-5912-6_54

7. Han, B, Ji, H, Qiu, J & Cheng, L 2022, "COMPLEX WAVENUMBER ANALYSIS OF FLEXURAL WAVES IN PLATE STRIP WITH PERIODIC ACOUSTIC BLACK HOLES", 28th International Congress on Sound and Vibration, ICSV 2022, 24-28 July 2022, Singapore, pp. 1735-1742.

8. Han, B, Ji, H, Qiu, J & Cheng, L 2022, "Resonance mode analysis of finite plate strip with acoustic black holes: the gap between bandgap and attenuation band", 51st International Congress and Exposition on Noise Control Engineering, Internoise 2022, 21-24 August 2022, Glasgow, United Kingdom, pp. 245.

9. Comte, C, Humbert, T, Aurégan, Y, Gabard, G, Lam, GCY & Leung, RCK 2022, "Drum-like liners to attenuate low frequencies in presence of flow: an analytical, experimental and numerical study", 28th AIAA/CEAS Aeroacoustics Conference, 2022, 14-17 June 2022, Southampton, United Kingdom, AIAA 2022-2822. https://doi.org/10.2514/6.2022-2822

10. Irsalan, A, Leung, RCK, Lam, GCY & Naseer, MR 2022, "Fluid-structure interactions and aeroacoustic coupling of airfoil with flexible membrane(s)", 51st International Congress and Exposition on Noise Control Engineering, Internoise 2022, 21-24 August, Glasgow, United Kingdom, pp. 22.

11. Duan, A, Zhang, B, Hu, L, Feng, L & Navarro-Alarcon, D 2022, "Balancing Control of Wheeled-Legged Hexapedal Robots for Traversing Rough Terrains", 2022 IEEE International Conference on Robotics and Biomimetics, ROBIO 2022, 05-09 December 2022, Jinghong, China, pp. 1905-1910. https://doi.org/10.1109/ROBIO55434.2022.10011895

12. Li, J, Huang, Y, Ng, WY, Cheng, T, Wu, X, Dou, Q, Meng, H, Heng, PA, Liu, Y, Chan, SM, Navarro-Alarcon, D, Hang Ng, CS, Yan Chiu, PW & Li, Z 2022, "Speech-Vision Based Multi-Modal AI Control of a Magnetic Anchored and Actuated Endoscope", 2022 IEEE International Conference on Robotics and Biomimetics, ROBIO 2022, 05-09 August 2022, Jinghong, China, pp. 403-408. https://doi.org/10.1109/ROBIO55434.2022.10011904

13. Yang, W, Choy, Y & Li, Y 2022, "Traffic noise radiation suppression in an unbaffled long enclosure using micro-perforated panel", 24th International Congress on Acoustics, ICA 2022, 24-28 October 2022, Gyeongju, Republic of Korea, pp. 115-122.

14. Arif, I, Naseer, MR, Lam, GCY & Leung, RCK 2022, "Aeroacoustic-structural interactions of a multi-panel airfoil configuration for tonal noise reduction", 24th International Congress on Acoustics, ICA 2022, 24-28 October 2022, Gyeongju, Republic of Korea, pp. 164-168.

15. Naseer, MR, Arif, I & Leung, RCK 2022, "Control of flow-induced noise by structural compliance", 24th International Congress on Acoustics, ICA 2022, 24-28 October 2022, Gyeongju, Republic of Korea, pp. 169-173.

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.

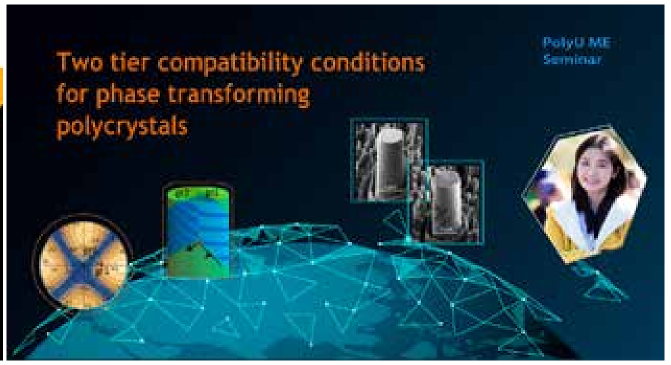
Below are some of our clients:

Artisan Industries Inc.
Environmental Protection Department, HKSAR
German Pool Kitchen Equipment Limited
Hong Kong Police Force
Micro-Intelligence
Nano and Advanced Materials Institute (NAMI)
The Hong Kong Jockey Club
YUTRAFFIC Ltd.
芜湖美的厨卫电器制造有限公司 (Midea)

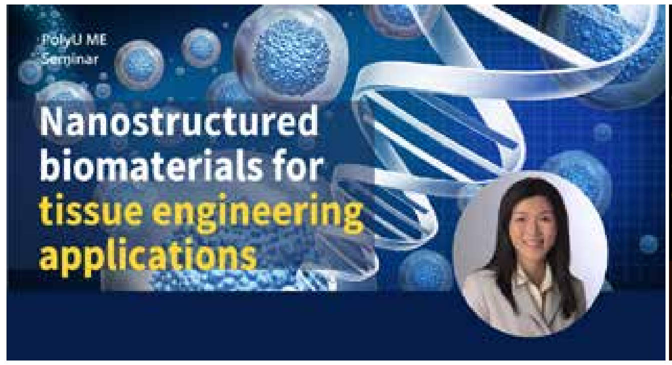
Departmental Seminar Series

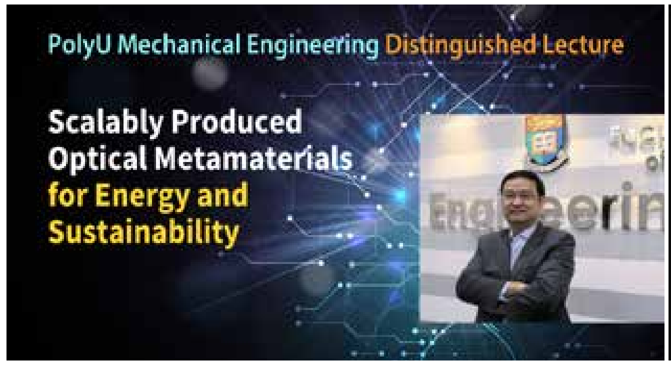
The Department regularly holds research seminars on a wide variety of topics delivered by distinguished visiting researchers or external invited speakers with the aim of advancing research by exchanging knowledge and ideas within the field of Mechanical Engineering.

Date	Speaker/	Affiliation	Seminar Title
15-07-2022	Prof. Edward Colgate	Professor of Mechanical Engineering, Northwestern University, USA	Growing the Tactile Gamut
11-08-2022	Dr Yuan Wenzhen	Assistant Professor, Carnegie Mellon University	Making sense of the physical world with high-resolution tactile sensing
15-09-2022	Dr YU Xinge	Associate Professor, Department of Biomedical Engineering,The City University of Hong Kong	Intelligent electronic skin for healthcare monitoring and touch VR
29-09-2022	Prof. YANG Chun	Professor and Associate Chair, School of Mechanical and Aerospace Engineering, Nanyang Technological University (NTU)	Microfluidic Linear and non-Linear Electrokinetics Phenomena
27-10-2022	Prof. HAN Wang	Professor, Beihang University	High-fidelity modeling of soot emissions in gas-turbine combustors
17-11-2022	Prof. JIANG Haoran	Professor, School of Mechanical Engineering, Tianjin University	High-performance redox flow batteries for large-scale energy storage
09-12-2022	Dr Zhang Mengqi	Assistant Professor, Department of Mechanical Engineering, National University of Singapore	Reinforcement-learning-based control of convectively-unstable flows
20-12-2022	Dr Liu Chang, Will	Postdoctoral Associate, Department of Mechanical Engineering, MIT	Soft materials as the new paradigm for energy technology



Date	Speaker/	Affiliation	Seminar Title
02-02-2023	Dr Chen Xian Sherry	Associate Professor, Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science & Technology	Two tier compatibility conditions for phase transforming polycrystals
09-03-2023	Prof. Wallace Leung	Distinguished Research Professor, Department of Mechanical Engineering, The Hong Kong Polytechnic University	Novel Nanofiber Technologies for Energy, Environment and Health Technologies
17-03-2023	Dr Wang Zhe, Walter	Assistant Professor, Department of Civil and Environmental Engineering, The Hong Kong University of Science & Technology	Planning ahead is all you need: Model predictive control for smart grid management
21-03-2023	Prof. Evelyn KF Yim	University Research Chair & Associate Professor, Department of Chemical Engineering, University of Waterloo, Ontario, Canada	Nanostructured biomaterials for tissue engineering applications
17-04-2023	Prof. Henry Curran	Director of the Combustion Chemistry Centre, University of Galway	Developing detailed chemical kinetic mechanisms for ammonia combustion and NOx emission
02-05-2023	Prof. Yin Xiaobo	Associate Vice President and Professor of Mechanical Engineering, HKU	Scalably Produced Optical Metamaterials for Energy and Sustainability
17-05-2023	Prof. Mo LI	Professor, School of Materials Science and Engineering, Georgia Institute of Technology, USA	From clusters to fractal packing: Unravel the mystery in atomic structure of amorphous solids and liquids
25-05-2023	Dr Zhang Qicheng	Westlake University	Topological Phase Engineering, from Electronics to Phononics
26-06-2023	Prof. Wieslaw J. Staszewski	Professor of Mechanical Engineering, AGH University of Science & Technology, Poland	Classical and Non-Classical Shear Wave Nonlinearities for Structural Health Monitoring





Highlights of the Year

Staff Achievements and Research Development

ME Scholars ranked among World's Top 2% Most-cited Scientists

In the newly released metrics compiled by Stanford University, 21 scholars 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. In addition, 3 other current ME academics have also been ranked for single recent year impact *.

The scholars were named in the latest release of the Stanford University-led compilation of citation indicators covering over 100,000 top scientists. They were grouped into 22 subject fields and 174 sub-fields using the indicators including information on citations, individual' s scientific research output, co-authorship and a composite indicator for career-long citation impact up to the end of 2021. The latest dataset is based on the 1 Sep 2022 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. Chan Tat Leung
3. Prof. Christopher Chao Yu Hang
4. Prof. Chen Guohua
5. Prof. Cheng Li
6. Prof. Cheung Chun Shun
7. Prof. Fu Mingwang
8. Prof. Wallace Leung Woon Fong
9. Dr Liu Yang
10. Prof. Su Zhongqing
11. Dr Yao Haimin
12. Dr Zheng Guangping
13. Dr Jiao Zengbao *
14. Dr Sun Yuxiang *
15. Dr Wu Maochun *
16. Prof. Ronald So Ming Cho (Emeritus Professor)
17. Prof. Woo Chung Ho (Emeritus Professor)
18. Prof. Jing Xingjian (former staff)
19. Prof. Alan Lau Kin Tak (former staff)
20. Prof. Leung Chun Wah (former staff)
21. Prof. Shi Sanqiang (former staff)
22. Prof. Wen Chih-Yung (former staff)
23. Prof. Zhou Limin (former staff)
24. Prof. Zhou Yu (former staff)

Dr Zhang Xiao recognised amongst World's Most Highly Cited Researchers 2022

Dr Zhang Xiao being one of the 12 PolyU academics (including two former PolyU members) has been recognised in the "Highly Cited Researchers 2022" list by Clarivate Analytics for their significant research impact, reflected in their publication of multiple papers that have been frequently cited by fellow academics.

A total of 6,938 researchers from 69 countries and regions with a diverse range of research fields are named as Highly Cited Researchers in 2022. The list identifies the most influential scholars around the world, determined by the production of multiple highly cited papers that rank in the top 1% by citations for field and year in the Web of Science citation index over the last decade.

This is the second consecutive year Dr Zhang has been recognized. The department is proud of Dr Zhang's outstanding achievement in particular at such an early career stage.

Success in securing GRF/ECS 2023/24

In the 2023/24 results of grants from the Research Grants Council's General Research Fund (GRF) and Early Career Scheme (ECS) announced in June 2023, ME's success rate was 36% in 2023/24 exercise. Nine of our GRF/ECS proposals were funded.

Principal Investigator	Co-Investigator	Project Title
Dr Cheng Song	Nil	On the Unique and Nonlinear Interactions between Fungible Sustainable and Conventional Aviation Fuels in Atmospheric to Supercritical Pyrolysis, Oxidation and Combustion: Fundamental Characterizations and Application-Oriented Implementations
Dr Choy Yat Sze	Nil	Development and modelling of open sonic retarding meta-structure for broadband sound insulation with air flow passage
Dr Navarro-Alarcon David	Prof. Romero Jose Guadalupe (Instituto Tecnológico Autónomo de México), Prof. Nanayakkara Thrishantha (Imperial College London)	Multi-Agent Systems with Variable Morphology: Models, Controls, and Applications
Prof. Su Zhongqing	Prof. Zhu Jie (Tongji University)	A Skin-Mimetic, Wearable Acoustic "Interface" for Trapping, Relaying, and Boosting Ultrasonic Leaky Waves in Attenuative Human Tissues
Dr Sun Yuxiang	Prof. Huang Shoudong (University of Technology Sydney)	Cross-modal Global Localization with a LiDAR and Geo-referenced Aerial Images for Autonomous Vehicles in GNSS-degraded Environments
Prof. Wang Liqiu	Prof. Li Jiaqian (Shandong University)	Structure-free substance-repellent coatings
Prof. Wang Zuankai	Nil	Developing honey bees-inspired solid-repellent surfaces
Dr Wu Maochun	Nil	Two-Phase Flow and Mass Transport in Zinc-Bromine Flow Batteries
Dr Zheng Guangping	Nil	Computational and experimental studies on the strengthening mechanisms of entropy stabilized glass-glass interfaces in multicomponent metallic nano-glasses

Professor Chen Guohua elected Chairman of World Chemical Engineering Council

Prof. Chen Guohua, Otto Poon Charitable Foundation Professor in Smart and Sustainable Energy, Chair Professor of Energy Conversion and Storage, has been elected the Chairman of the World Chemical Engineering Council (WCEC) in recognition of his distinguished achievements in serving the Council with top quality engineering expertise. Prof. Chen has been the Vice Chairman of WCEC since 2017.

WCEC is the international organization coordinating the academic exchanges among chemical engineers world-wide. It is composed of representatives of the World's leading Chemical Engineering Societies from countries including China, USA, Japan, Australia, Canada, UK, France, Brazil, Germany, Spain, Italy, South Africa, and regional confederations including Asian-Pacific Confederation of Chemical Engineering, European Federation of Chemical Engineering, Inter-American Confederation of Chemical Engineering.

Professor Cheng Li elected President-elect of International Institute of Noise Control Engineering

In the 51st International Congress on Noise Control Engineering (INTER-NOISE 2022) held on 21-24 August 2022 in Glasgow, Prof. Cheng Li, Chair Professor of Mechanical Engineering, was elected President-elect of the I-INCE (International Institute of Noise Control Engineering). Founded in 1974, I-INCE is a worldwide consortium of organizations concerned with noise control, acoustics and vibration, with over fifty member societies representing over forty countries. As the President-elect (2023-2025), Prof. Cheng will take over the Presidency of the I-INCE in 2026 for a three-year term. He will then be the 9th President of this prestigious organization in his 48 years of history. Prior to this new position, he also served I-INCE in different capacities including the Vice President for Asia Pacific and a board Director.

Professor Su Zhongqing elected Distinguished Fellow of International Institute of Acoustics and Vibration

Prof. Su Zhongqing, Head of the Department of Mechanical Engineering, has recently been elected a Distinguished Fellow of the International Institute of Acoustics and Vibration (IIAV). IIAV Distinguished Fellowship is awarded to individuals with distinguished careers in acoustics and/or vibration.

IIAV is an international society with members from all over the world. The purpose of the IIAV is to advance the science of acoustics and vibration by creating an international scientific society that is responsive to the needs of scientists and engineers in all countries whose primary interests are in the fields of acoustics and vibration. IIAV organizes an annual premier world event, the International Congress on Sound and Vibration (ICSV), which combines all areas of acoustics, noise and vibration. PolyU Department of Mechanical Engineering was the host of the 8th edition of the ICSV in 2001.

Professor Wang Zuankai received Croucher Senior Research Fellowship

Prof. Wang Zuankai, Associate Vice President (Research and Innovation) and Chair Professor of Nature-Inspired Engineering, received a Croucher Senior Research Fellowship 2023 in recognition of his outstanding achievements in nature-inspired engineering and breakthrough research on inhibiting the Leidenfrost effect.

Nature-inspired innovation is an interdisciplinary science drawing inspiration from living creatures and nature for innovative solutions. Specifically, Prof. Wang's research explores the surface properties of natural creatures with the aim of developing novel nature-inspired materials for a wide range of applications such as water energy harvesting, thermal cooling, fluid transport and flexible electronics. Prof. Wang achieved his scientific breakthrough by identifying an innovative solution to addressing the liquid cooling of high-temperature surfaces by suppressing the classical physical phenomenon - the Leidenfrost effect, a challenge that scientists have been unable to overcome for centuries. Upon receiving the Fellowship, he was awarded funding of HK$2 million over one year for research expenses.

Professor Wang Zuankai awarded inaugural BOCHK Science and Technology Innovation Prize

Prof. Wang Zuankai has been awarded the inaugural BOCHK Science and Technology Innovation Prize (STIP) for his outstanding contributions in the field of "Advanced Manufacturing". He received a HK$2 million cash prize.

Prof. Wang is recognized in the "Advanced Manufacturing" field for his multidisciplinary research and breakthrough achievements at the interface of advanced manufacturing, surface science, fluid mechanism, thermal energy, materials science and physics. He has published over 200 papers in ***Nature, Science, Proceedings of the National Academy of Sciences*** and other journals.

Prof. Wang's research has answered three century old scientific questions - what the shortest contact time between solid and liquid is, how to steer directional liquid flow and how to overcome the Leidenfrost effect first discovered in 1756. He has also made an important contribution to exploring nature-inspired surfaces for a wide range of applications such as water energy harvesting, thermal cooling, fluid transport and flexible electronics.

ME scientist research achievement received HUAWEI Spark Award

Prof. Wang received the "Problem Unveiling" Spark Award (「難題揭榜」火花獎) presented by Huawei for his innovative achievement in most water-repellent surface.

Huawei presented to the society the challenges of industry and scientific value, giving exploration, guidance, openness, and reflection, scientists were encouraged to come up with innovative ideas. Prof. Wang proposed a novel solution to the Legion Challenge Phase II problem "Transparent and wear-resistant super-sparse surface" (透明耐磨的超疏表面).

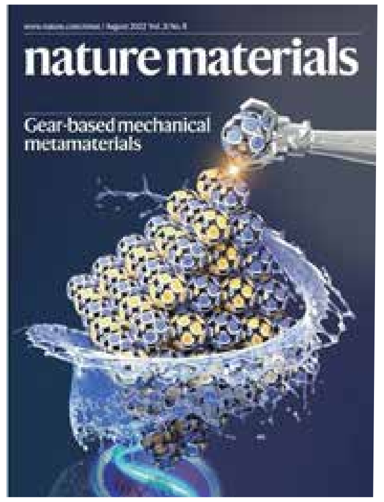
Professor Fu Mingwang awarded Royal Society Wolfson Visiting Fellowship

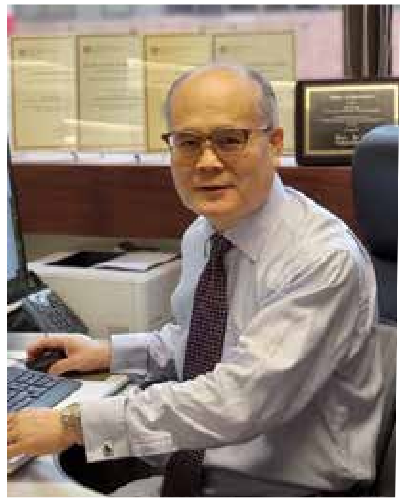
Prof. Fu Mingwang, Chair Professor of Advanced Manufacturing, Associate Director of Research Institute for Advanced Manufacturing, was recently awarded the Royal Society Wolfson Visiting Fellowship with a grant of £125,000.00 to support this fellowship. The Visiting Fellowship belongs to the Royal Society Wolfson Fellowship/Visiting Fellowship Scheme, which awards less than 10 people each year with this prestigious fellowship title and funding support for both fellowship and visiting fellowship. For the Visiting Fellowship, based on the Royal Society, it provides an opportunity for outstanding international research leaders to foster international collaborative links and enrich scientific research in the host organization as well as the wider UK science base.

For the Royal Society, it is the United Kingdom's national academy of sciences founded in 1660 for "promoting science and its benefits, recognizing excellence in science, supporting outstanding science, providing scientific advice for policy, education and public engagement and fostering international and global co-operation".

ME research reported in Nature Material and National Science Review

The research group, led by Chair Prof. Cheng Li, has made good progress in the development of acoustic/elastic/mechanical metamaterials. Recent research results are published in prestigious journals like Nature Materials, National Science Review, Journal of Mechanics of physics and Solids, Acta Materialia and Physics Review Applied etc.





Their latest work on programmable gear-based mechanical metamaterials was published in the latest issue of ***Nature Materials*** (21, 869-876, 2022, IF 47.656) as **cover story**. The new design leads to unprecedented tunability and programmability based on gear clusters embracing traditional Chinese Taiji pattern. The work was also reported by ***Nature*** (606, 2022) as research highlight, which states "Sheets of connected gears made from various materials can morph from soft and deformable to extremely stiff, all while bearing heavy loads ... Such clusters of gears could be a way to make machine parts that have controllable elasticity but are still strong. For example, robots with appendages that soften and stiffen on demand would be able to jump and grab objects easily". The paper was the fruit of the research work of Dr Fang Xin, Hong Kong scholar in ME under the supervision of Prof. Cheng, in collaboration with National University of Defense Technology and Fraunhofer for Mechanics of Materials, Germany.

Meanwhile, significant progress has been made on the topological design of metasurface for acoustic and elastic wave manipulation. In particular, the group proposed a systematic inverse design paradigm, which leads to a new class of metasurfaces allowing for various exotic wave functionalities (steering, focusing, levitation). They reported the combined effects of topology-specific internal resonances, bi-anisotropic and multiple scattering, which lead to record-breaking broadband and achromatic material properties. The work was online published in ***National Science Review*** (IF 23.178) with Dr. Dong Haowen as the leading author, who is another Hong Kong scholar working with Prof. Cheng (2019-2020). Other related works on broadband pentamode metamaterials and elastic waves have also been published in prestigious journals like ***Journal of Mechanics of physics and Solids*** 2020, 2021), ***Acta Materialia*** (2019) and ***Physical Review Applied*** (2022).

Dr Jiao Zengbao clinched Scientist Award and Fellow of IAAM

Dr Jiao Zengbao received the IAAM Scientist Award from the International Association of Advanced Materials (IAAM) in recognition for his contribution to advanced structural materials. IAAM Scientist Award is an illustrious honour that the IAAM presents to distinguished researchers and scientists to recognize their distinct contributions to the sphere of Materials Science, Engineering and Technology.

Dr Jiao has also been elected as a Fellow of IAAM, which is a notable distinction that the IAAM confers upon researchers and scientists to recognize their important contribution and efforts for the advancement of materials.

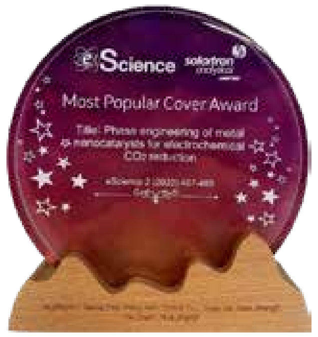
IAAM is a renowned non-profit international scientific research organization active in the world of advanced materials. The organization works to facilitate a highly interactive community of advanced materials researchers and to stimulate partnerships, collaborations, and joint ventures that can translate into the rapid development of the scientific world.

Dr Jiao Zengbao appointed Associate Editor of Materialia

Dr Jiao Zengbao has been appointed as an Associate Editor of ***Materialia.*** Materialia is an international journal published on behalf of Acta Materialia Inc., which is a world-famous nonprofit organization publishing four of the most significant materials science journals (Acta Materialia, Scripta Materialia, Acta Biomaterialia, and Materialia).

Materialia is a materials-focused, multidisciplinary journal publishing original, peer-reviewed research articles that advance the understanding of the relationship between processing, structure, property and function of materials.

Dr Zhang Xiao received Most Popular Cover Award at eScience Summit



The 2023 eScience Summit (New Energy Youth Session), organised by the eScience Editorial Board and the Haihe Institute of Carbon Neutral Research, Nankai District, Tianjin, was held at the Tianjin Social Hill International Conference Centre Hotel from 21 to 23 April 2023. With the theme of "New Energy for Chinese Modernization", the conference attracted more than 800 participants from universities, research institutes and related enterprises, engineers and students from all over China, focusing on energy storage batteries, power batteries, electrocatalysis and synthesis, photoelectric energy utilization and new energy AI and advanced characterization. 18 Young People's Awards for Outstanding Contribution and 3 Most Popular Cover Awards were presented.

Dr Zhang Xiao has received the Most Popular Cover Award. His research title is "Phase engineering of metal nanocatalysts for electrochemical CO2 reduction". Authors include Yanjie Zhai, Peng Han, Qinbai Yun, Yiyao Ge, Xiao Zhang, Ye Chen, Hua Zhang. The first author, Zhai Yanjie, is a year-2 PhD student of PolyU ME. Dr Zhang Xiao is the corresponding author.

Dr David Navarro-Alarcon appointed Associate Editor of prestigious IEEE Journal

Dr David Navarro-Alarcon has been appointed as a new Associate Editor by the Editor-in-Chief of ***IEEE Transactions on Robotics (T-RO)***. The editorial board of this journal is composed of world-renowned scholars in the robotics research community.

Published by IEEE, T-RO is a leading international journal dedicated to publishing research papers that represent major advances in the state-of-the-art on all aspects of robotics, featuring interdisciplinary approaches from computer science, control systems, electrical engineering, mathematics, mechanical engineering, and other fields. In 2021, T-RO was by far the most cited journal in robotics and the impact factor reached an all-time high.

Dr Navarro-Alarcon has been working in the area of robotics and controls over the years. He is the Principal Investigator of the Robotics and Machine Intelligence Laboratory (ROMI-Lab).

Dr Ma Yuan received PolyU Young Innovation Researcher Award (YIRA) 2023

Dr Ma Yuan has been awarded the PolyU Young Innovative Researcher Award (YIRA) for 2023. His research focuses on developing "Flexible surface haptics technology for aiding the visually impaired population".

The aim of Dr Ma's research project is to create a new touch feedback technology on soft materials that can assist visually impaired individuals in interacting with digital devices and the digital world. By developing a flexible system that can produce different touch sensations, he hopes to create a more efficient and user-friendly experience for those with visual impairments.

The YIRA recognizes young PolyU researchers under the age of 35 who have demonstrated novelty, contributed to technology advancement, and propelled transformational innovation into solutions for addressing problems in society with a vision for a positive change to the future. Each YIRA awardee will receive research funding support of HK$500,000 and a personal cash prize of HK$20,000 as recognition for their research novelty.

Dr Xu Wanghuai received 2022 Young Scientist Award

Dr Xu Wanghuai, currently an RGC Postdoc Fellow working with Professor Wang Zuankai in ME, has been awarded the 2022 Young Scientist Award in the Engineering Science category by the Hong Kong Institution of Science (HKIS) for his outstanding accomplishments in the fields of energy harvesting.

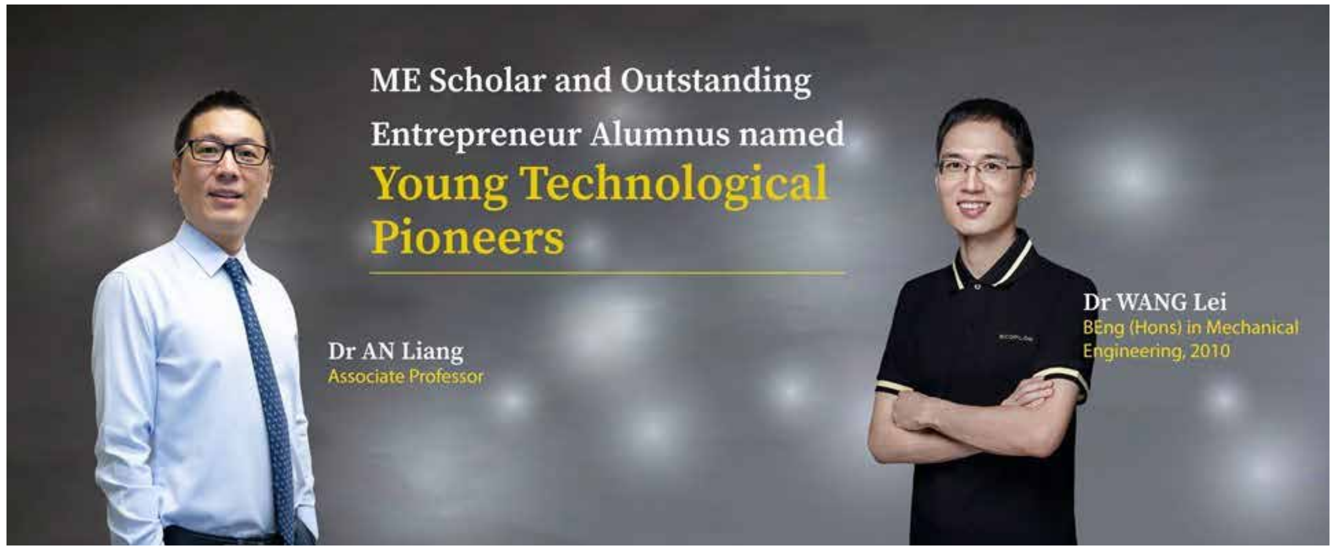
This prestigious award was established to reward young scientists in Hong Kong who exhibit great promise in their field of study. Each year, HKIS will confer three winners, which are in the fields of Physical/Mathematical Science, Life Science and Engineering Science, respectively. Dr Xu is the winner in the field of Engineering Science this year.

Dr Xu's research interests involve developing new architecture and mechanism for high-efficiency water energy harvesting and liquid manipulation. His related research results have been recognized by a series of awards, including the Hiwin Doctoral Dissertation Outstanding Award (2021), and the Materials Research Society Graduate Student Silver Award (2021).

ME Scholar and Outstanding Entrepreneur Alumnus named Young Technological Pioneers

To spur the passion and the creativity of young scientists and technological entrepreneurs, the Hong Kong Young Scientists Association (香港青年科學家協會) has initiated the Selection of Young Science and Technology Pioneers so as to assure their contribution to the vibe of the science development of Hong Kong. The "Selection of Young Technological Pioneers cum Scientific Creativity Forum (青年科創先鋒人物評選暨科創論壇)" was held on 30 Aug 2022 and announced 25 awardees. At the event, some awardees together with the leading heads of the field gave a thematic speech and had an exchange on the prospect of the scientific development of society.

The selected pioneers include Unicorn entrepreneurs, young professors, and innovators whether growing up locally, studying in Hong Kong or overseas investors with projects in Hong Kong. Their business covers various fields like robots, artificial intelligence, cyber network, biological medication, and fintech.



We are thrilled that our Associate Professor Dr An Liang and young graduate Dr Wang Lei were elected among the 25 young science and technology pioneers in recognition of their outstanding contribution to the innovation and technology ecosystem in Hong Kong.

During the forum, Dr An Liang as an expert in energy conversion and storage technologies expected the Government to enhance its support to scientific researchers and encouraged enterprises to establish joint laboratories with universities so as to nurture more research talents for the whole society. Dr An has systematically studied the characteristics of flow and mass transport in a complex microporous structure in which electrochemical reactions occur, and achieved a number of innovative results. He was also awarded funding from China's Excellent Young Scientists Fund 2020.

Dr Wang Lei started his undergraduate study in Mechanical Engineering with full scholarship in 2006 and obtained his BEng with First Class Honours in 2010 from PolyU. Dr Wang has always been interested in renewable energy technologies. His interest and passion were strongly cultivated in the dynamic study environment at PolyU and drove him to continue his further study. He then completed his PhD research in new energy storage technologies in 2014 at the University of Hong Kong. Dr Wang founded EcoFlow in 2017 and has been serving as the company's CEO. Under his leadership, EcoFlow has developed into a national high-tech enterprise and is recognized as a unicorn company backed up by Sequoia and Hong Kong Foundation X with a valuation of over one billion USD in 2021.

It is very encouraging to see that the young scientist and entrepreneur alumnus from the Department were acclaimed by the Nation to further develop scientific research in cutting-edge technologies and made remarkable contributions to the community.

Student Accomplishments

ME Students clinched 1st Runner-up and Best AI Implementation Award at AI x HK OPENCUP 2022

ME research postgraduates and undergraduates together with students from another department have formed 2 teams to join the AI x HK OPENCUP 2022 held on 25 November 2022. The competition brought together over 100 teams from local universities participating in the tertiary student category. We are thrilled that ME students won 2 awards in the competition.

The team "NikoIAI" formed by 2 undergraduate students, KHAN Hamad from the Department of Mechanical Engineering and HASAN Fuad from the Aeronautical and Aviation Engineering, with their project entitled "Artificially Intelligent Collision Avoidance System" won the 1st Runner-up along with a cash prize of HK$20,000 and a trophy.

The team "ROMI" formed by 3 PhD students, Samantha LEE Hoi Yin, Jeffery ZHOU Peng, and Luiza LABAZANOVA from the Department of Mechanical Engineering, with their project "A Multi-Sensor Interface to Improve the Education Quality in Arc Welding Training Tasks" won the Best AI Implementation Award and received a cash prize of HK$5000 and a trophy. Samantha, Jeffery, and Luiza are under the supervision of Dr David Navarro-Alarcon in PolyU ME. They conduct multi-robot research in the Robotics and Machine Intelligence Laboratory.

The AI x HK OpenCup 2022 is an AI-related competition organized by Hong Kong Baptist University and the Hong Kong Society of Artificial Intelligence and Robotics. The competition brings teams together to develop and pitch their creative technological solutions for the betterment of the community and sustainable living. The aim of the event is to encourage talents to ideate AI solutions for addressing real-world problems with the objective to make a positive social impact and promote sustainability.

ME Final Year Project won Championship of HKIE Best Final-Year Environmental Project

A team of three 2022 graduates of BEng (Hons) in Mechanical Engineering received the Group Project Winner (Champion) of 2021/2022 Best Final Year Environmental Project Award hosted by the Environmental Division of the Hong Kong Institution of Engineers (HKIE) for their final year project entitled "Design and Development of a Passive e-Fuel Cell".

The team, consisting of CHANG Yu Hao, DAI Yichen, and RASHID Sameer, was supervised by Dr AN Liang and Dr SHI Xingyi. This award aims to recognize the efforts of final-year students in completing good quality final year projects and to encourage them to continue the effort in improving the environmental engineering practice in their future careers.

ME Graduates won Champion at Hong Kong Techathon 2023

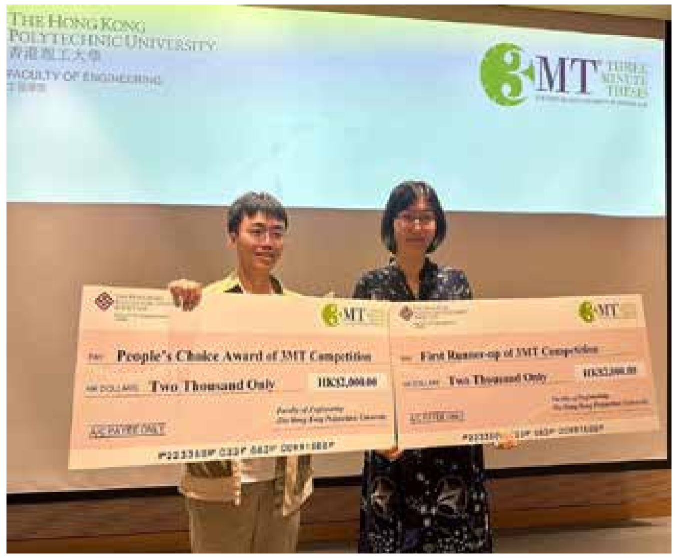
In Hong Kong Techathon 2023, PolyU teams have achieved outstanding results. They won champions in three of the four categories in the competition. The champion teams were 417 Tech in the ArtTech & EdTech category, Fleming MedLab in the Healthcare & GeronTech category and BoostRider in the Smart Cities & Sustainability category.

The team "BoostRider" was formed by two graduates from the Department, Lam Yuen Yik (Graduate 2021, BEng (Hons) in Product Analysis and Engineering Design) and Kevin Yau Pang Yeung (Graduate 2021, BEng (Hons) in Mechanical Engineering), together with 2 student/graduate from PolyU Department of Electronic and Information Engineering, and the Hong Kong University of Science and Technology. The BoostRider, named Champion in the Smart Cities and Sustainability area, is a start-up that developed a tool with a good cause. Kevin Yau explained: "Powered by machine and app, our AI wheelchair helps physically impaired people to move around without having to strain their arms – these machines are like good friends lending them a hand just when they need it."

Hong Kong Techathon 2023 is a competition jointly organized by the Hong Kong Science and Technology Parks Corporation and nine local universities. It aims to promote the development of Hong Kong's innovation and technology start-up ecosystem, providing young people with diversified learning opportunities and entrepreneurial support.

ME PhD Student clinched 1st Runner-up and People's Choice Award in Faculty 3MT Competition

Mr Liang Zhaojian, a research student representing the Department of Mechanical Engineering (ME), won the First Runner-up and People's Choice Award in the Three Minute Thesis (3MT) Competition 2023 organized by the PolyU Faculty of Engineering.



On 16 June 2023, 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.

Zhaojian is currently a PhD student in ME under the supervision of Dr Li Mengying. "Energy storage using solid oxide electrolysis cell (SOEC) -- A story about speeds" is the title about his research project for this competition. His lively narration of academic research has won him two awards. We are very proud of his outstanding performance.

ME Student Team won Best Innovation Award at Cathay Hackathon 2022

Luiza LABAZANOVA, Samantha LEE Hoi Yin, Valen QIU Liuming and Aamir MEHMOOD formed a PolyU student team to participate in the Cathay Hackathon held on 19 to 20 November 2022. Their project "Metaverse In-Flight Entertainment" won the Best Innovation Award.

The Cathay Hackathon 2022 is an aviation-related hackathon organized by Hong Kong flag carrier Cathay Pacific. The event brings teams together to design, develop and pitch technology solutions, which can improve the passengers' flight experience or make operations involved in in-flight management sustainable and eco-friendly. The aim of the Hackathon is to inspire and nurture emerging talents by providing behind-the-scenes insight into the industry and comprehensive support during the corresponding ideation process.

Luiza and Samantha are PhD students under the supervision of Dr David Navarro-Alarcon in PolyU Department of Mechanical Engineering (ME). Valen is an undergraduate student of PolyU ME. Aamir is a PhD student in PolyU Department of Industrial and Systems Engineering. Luiza, Samantha, and Valen conduct research in the Robotics and Machine Intelligence Laboratory. Their research interests focus on Metaverse and multi-robot systems.

Department and Scholarly Activities

Outstanding Alumni Award of PolyU Department of Mechanical Engineering 2023

Two distinguished graduates are awarded the "Outstanding Alumni Award of PolyU Department of Mechanical Engineering 2023" 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.

Dr POON Chi Kin, Lawrence

Head of Innovative Technology & CEO Advisor of Applied R&D
Hong Kong Applied Science and Technology Research Institute (ASTRI)

Doctor of Philosophy, 2004
Master of Engineering in Mechanical Engineering, 1998
BEng in Mechanical Engineering, 1998

Outstanding Alumni Award in Professional Achievement of PolyU Department of Mechanical Engineering

PolyU Graduate School Outstanding Research Postgraduate Alumni Award

Dr Poon is a leader of innovative technology and advisor who took lead of the overall planning and development of ASTRI's new initiatives in Smart City, Smart Mobility and PropTech R&D. Before joining ASTRI, he had served HKPC and APAS R&D Centre for 17+yrs and managed to growth the R&D team from 9 staff to 140+ scientists and researchers over 10 years, and led HKPC's two new divisions - Smart City Division and APAS to steer the applied research activities and commercialization of R&D results in Hong Kong and GBA markets with focus on A.I, Robotics, Smart mobility, EV, Autonomous driving, GeronTech and Metaverse.

Dr WONG Yin Wai, Ian

Vice President - Business Development Department
Raymond Industrial Limited

Doctor of Philosophy, 2018
BEng in Mechanical Engineering, 2009

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

Dr Wong is a young leader who led the development of a new capsule beverage machine project, expanding the company's product category and opening new market opportunities in the US. He formed and led a successful project management team, securing a key project from an international brand and maintaining the steady development of the company business. As a result of his contributions, he was promoted to Senior Project Manager and then to Vice President, becoming the youngest member of senior management in the company's history at the age of 30. During his 7-year tenure, he reformed the business department structure and expanded the customer portfolio to mitigate the impacts of the global economic downturn.

Professor Wallace Leung chaired 13th World Filtration Congress in USA

The 13th World Filtration Congress (WFC13) took place from October 5 to 9, 2022, at the Hilton San Diego Bayfront in California, USA. The congress is held every four years and rotates among member countries of the International Delegation on Filtration (INDEFI). The American Filtration and Separations Society (AFS) secured the right to host WFC13 in 2016, originally scheduled for April 2020 but postponed twice due to the COVID-19 pandemic.

WFC has a history of 48 years, with the first congress held in Paris in 1974. AFS previously hosted WFC3 in 1982 and WFC9 in 2004, and for WFC13, it was chaired by Prof. Wallace Leung.

WFC13 consisted of three main activities: a technical program, an exposition, and short courses. The first day featured 12 short courses covering various topics related to filtration and separation. The second day marked the beginning of the technical program, which included traditional tracks and thematic symposia focused on environmental, energy, and health topics. Each symposium had plenary speakers discussing relevant subjects, and there were also keynote speeches throughout the congress.

The technical program included 56 breakout sessions with speakers from 24 countries, making it an international event. Student posters and an industry poster session were also part of the program, and awards were presented to winners during the gala dinner. The exposition, held from Day 2 to Day 4, showcased technologies and solutions by 100 companies in the filtration and separations industry.

WFC13 concluded with the announcement of the next congress, WFC14, which will be held in Bordeaux, France, from June 30 to July 4, 2025. The event saw the participation of 910 attendees, including those in the technical program and the exposition. Despite the challenges posed by the pandemic and the two-year delay, WFC13 was successfully organized, thanks to the efforts of people involved worldwide.

Warmest welcome to our Fresh Research Students!

In the new academic semester, we are delighted to welcome 37 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 afternoon on 29 Aug 2022. Research study at ME aims for training our students not just professionals of its field but also opening their minds to discover new knowledge that benefits society.

Dr Tang Hui, Associate Head (Research) and Chairman of Departmental Research Committee (DRC), 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 Wu Maochun, 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 enthusiastic. They are eager to meet the professors and supervisors. We can assure them they will have a supportive, knowledge-oriented, interactive approach experience in their studies.

ME Staff honoured for Long Service Awards 2022

Colleagues of the Department have always been devoting themselves to the development of ME.

This year, our Department Head, Prof. Su Zhongqing received the Award for his 15th year of service in PolyU. Besides, 8 staff members of ME received the Award for their 20th, and 15th year of service.

The University President invited all recipients of the Long Service Awards 2022 to a tea gathering at U.Green on 5 May 2023 to pay tribute to long-serving staff members for their loyal and committed service over the years.

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

Long Service Awards 2022

Length of Service	Award Recipient		Post Title
20 years	Dr Randolph C. K. Leung	梁志堅	Associate Professor
15 years	Prof. Zhongqing Su	蘇眾慶	Head (ME) & Professor
15 years	Dr Y. S. Choy	蔡逸思	Associate Professor
15 years	Dr G.P. Zheng	鄭廣平	Associate Professor
15 years	Ms Karen Cho	曹秀容	Assistant Marketing Manager
15 years	Dr Curtis Ng	吳駿	Senior Technical Officer
15 years	Mr Jack Wong	黃國威	Technical Officer
15 years	Mr K. O. Yuen	袁家安	Technical Officer
15 years	Ms Yan Wong	黃錦恩	Clerk

8th ME Research Presentation Competition

The 8th PolyU Mechanical Engineering Research Presentation Competition was successfully held on 2 Mar 2023. It is an annual event for research students to display their research project results and share knowledge with the PolyU community.

The Research Student Liaison Officer, Dr David Navarro-Alarcon, introduced the competition emphasizing academic pitching skills, with an aim to train research students to explain academic ideas to peers and non-experts clearly. The Associate Head (Research), Dr Tang Hui, addressed the opening of this 8th annual competition which has been bringing invaluable opportunities for ME research students' talents to be known.

This year, we invited 15 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. Being one of the panel members, Prof. Cheng Li, Associate Dean (Research) of the Faculty of Engineering, was very glad to have witnessed the evolution of the event - from a simple and crude poster competition held outdoors at PolyU podium to a decent function supported by a very strong judging panel giving their professional review.

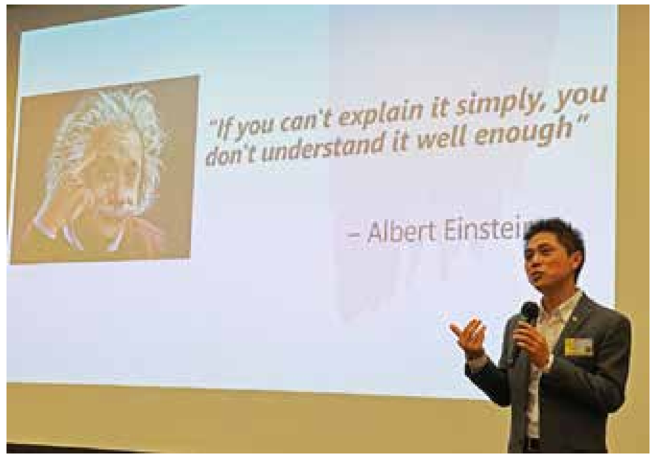
Twenty research student participants each delivered a high-impact brief in a 3-minute presentation. With their professional and animated presentations, those academic and technical terms were no longer distant to the layman. Most of the participants demonstrated outstanding academic pitching skills. Prof. Wang Zuankai, Associate Vice President (Research and Innovation), as a judging panel member, was impressed by the performance of the candidates and the wide spectrum of research areas to which ME research students are dedicated. Prof. Wang Liqiu, another Chair Professor who recently joined the Department, was thrilled to listen to the pitching by young researchers and opined that with the key message, they grabbed the audience's attention.

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, and communicate with viewers and professionals.

All other research students and PolyU staff members have also joined the event and vote for the Peoples Choice award. They had appealed to a large audience to vote for them.

Prof. Su Zhongqing, Head of the Department, concluded the competition with a quote from Einstein "If you can't explain it simply, you don't understand it well enough."

Congratulations on the fabulous presentations and excellent research work!



Champion and People's Choice
Student: Ms LABAZANOVA Luiza
Supervisor: Dr David Navarro-Alarcon
Title: Self-Reconfigurable Soft-Rigid Multi-Agent System

1st Runner-Up
Student: Ms HUO Xiaoyu
Supervisor: Dr AN Liang
Title: Development of a redox flow battery for large-scale energy storage

2nd Runner-Up
Student: Mr LIANG Zhaojian
Supervisor: Dr LI Mengying
Title: Energy storage using solid oxide electrolysis cell (SOEC) - A story about speeds

Merit
Student: Ms ZHANG Kouer
Supervisor: Dr AN Liang
Title: Green ammonia production from electrocatalytic nitrate reduction under ambient conditions

PolyU ME 85th Anniversary Alumni Homecoming

To celebrate the 85th anniversary of PolyU and ME, to pay tribute to outstanding alumni for their remarkable achievements, and to recognize dedicated alumni mentors for their professional guidance, the Department took great pleasure in hosting an alumni homecoming event on PolyU campus on 12 Nov 2022 (Sat).

With the concerted efforts from the Department and the Mechanical and Marine Engineering Alumni Association (MMEAA), the event brought together about 150 guests, including alumni, current and former Heads/colleagues and ME Outstanding Alumni Award recipients as well as dedicated alumni mentors. The event was also the warmest occasion in which our alumni rejoiced and reconnected with their fellow classmates and teachers.

The Faculty Dean **Prof. HC Man** kicked off the ME 85th anniversary event with the latest development of the Faculty of Engineering. **Prof. CS Cheung**, Vice President of MMEAA, brought back ME historic days and moments since 1937 which recalled very good memories for the audiences. Following that, the Department Head Prof. **ZQ Su** updated the recent achievements of the Department and it's looking ahead.

In recognition of alumni professional/entrepreneurial achievements and significant contributions to the Department, PolyU and the wider community, three distinguished graduates were awarded the "Outstanding Alumni Award of PolyU Department of Mechanical Engineering 2022". They are **Ir Prof. Yuen Pak Leung** (Immediate Past President, The Hong Kong Institution of Engineers), **Miss Lui Ka Wing, Winky** (Electrical and Mechanical Engineer, Electrical and Mechanical Services Department, HKSAR Government), **Dr Wang Lei, Bruce** (Founder and CEO, EcoFlow Inc.).

On this auspicious occasion, the Department has the honour to have distinguished fellows sharing with us how they battled against adversity and innovated for transformation. **Ir Prof. PL Yuen**, a veteran hospital engineer and an expert in the specialized hospital ventilation system, showed us his several battles against the pandemics encountered by both SARS and COVID. **Dr Bruce Wang**, the founder and CEO of EcoFlow Incorporated, talked about his passion for renewable energy technologies and the company's leading position in the global market. **Ir Gilbert Tsang**, the Executive Director of Gammon Construction, introduced the cutting-edge transformation in building services systems.

ME has a proud history of 85 years with an extensive alumni network covering a wide spectrum of industries. Taking this opportunity, we paid tribute to our dedicated alumni mentors for their relentless support of the PolyU ME Alumni Mentorship programme over the years. Since the kick-off of the programme in 2009, we were so grateful to have numerous seasoned alumni giving unconditional guidance to our "to-be-graduates" year by year. The dedicated mentors receiving the awards of appreciation included:

- serving for 10 years - **Lam Chi Ken, Lee Chun Leung**
- serving for 9 years - **Cheung Him Wah Angus, Kwan Kam Tim Timmy, Tong Kwok Kei**
- serving for 8 years - **Mou Yun Nin, Poon Chi Kin Lawrence, Wong Kin Ming Mac**
- serving for 3 to 7 years - **Au Tak Cheung Daniel, Au Yeung Chi Ting Gigi, Chan Hon Wah Joe, Chan Wai Yuk Bonnie, Chan Ying Ha Harriet, Cheung Nai Chung, Chiu Ka Lok Kevin, Chow Wai Keung, Gan Xin Nie Xinnie, Ho Wai Lun Wilson, Ip Chak Ki Jacky, Lam Hoi Bun Johnson, Lau Hon Kwong Vincent, Lee Yiu Kit Leslie, Leung Han Kwan Andy, Lui Pak Ho Alex, Ma Yat Ping Andy, Ng Chi Fai Coleman, Poon Yat Fai Dicky, Shum Yuet Hung Kane, Szeto Ka Sing Louis, Tse Man Ho Charles, Tsui Hon Kei, Tsui William, Wong Ka Ming Trajan, Wong Kam Ming Bill, Wong Siu Wah Alex, Yeung Yeuk Pong Alex, Yu Ching Man Sandy**

We were thrilled to have the presence of **Mr George Ko**, the most senior alumnus who graduated in 1960, being 85 years old same as PolyU and ME, presenting the award of appreciation to the most dedicated alumni mentor. The morning session concluded with heartfelt remarks by **Dr Yau Wing Kwong**, the President of MMEAA.

The 85th celebrating luncheon at the Communal Staff Restaurant was officiated by our honorary guests and ME management.

- **Prof. Jian Lu** (former Head 2005-2010)
- **Prof. Li Cheng** (former Head 2011-2014)
- **Prof. SQ Shi** ((former Head 2014-2021)
- **Prof. ZQ Su** (Head 2021-present)
- **Dr H Tang** (Associate Head)
- **Dr HM Yao** (Associate Head)
- **Prof. CS Cheung** (VP of MMEAA)
- **Prof. ZK Wang** (Chair Professor)
- **Ir Prof. PL Yuen** (Outstanding Alumni Awardee)
- **Dr Tracy Choy** (Chairlady of organizing committee)

This was a harmonious and joyful lunch gathering. We were getting excited by the table prize and lucky draw - 30 table prizes of fabulous PolyU thermal tumblers sponsored by the MMEAA, 3 lucky draws of ME premium souvenirs plus city'super gift cards donated by the Head and Associate Heads. In the afternoon, alumni and former colleagues were eager to join the campus tour. We took a glance at the latest infrastructure of PolyU, new buildings, refurbished library, the 85th anniversary unveiled iconic main entrance and our ME Thermal Science Lab set up in recent years.

PolyU ME's 85th anniversary celebration was happily concluded with this signature homecoming event.

ME Retreat in Aug 2022

The staff retreat of the Department took place on 15 Aug 2022 at Hotel ICON. The retreat kicked off with the Head Prof. Su Zhongqing's welcoming remarks to the newly joined colleagues. We were thrilled to have the young and promising talents on board. They are Dr Cheng Song, Dr Ma Yuen, Dr Wu Maochun and Dr Zhang Xiao.

The agenda of the ME retreat included an overall review of the Department's performances, strategies and challenges. Prof. Su started with the introduction of departmental KPI performance, budget and funding issues, review on staff appraisal criteria. Following that, the Associate Head (Research) Dr Tang led a discussion of the new research postgraduate allocation mechanism and formulated a plan for the next Research Assessment Exercise (RAE) in 2026.

Taking the opportunity, the Department paid tribute to Chair Prof. Chen Guohua and Prof. Zhou Limin and Dr Zhang Peng. Prof. Su expressed the greatest gratitude for their dedication and contribution to the department. The morning session concluded with the heartfelt valedictory speech by Prof. Chen, Prof. Zhou and Dr Zhang.

In the afternoon, Prof. Cheng Li, Chair Professor of Mechanical Engineering, shared his seasoned experience in preparing General Research Fund (GRF) proposals. Admission status updates and future plans were reported by programme leaders, namely Dr An Liang and Dr Ruan Haihui (BEng in Mechanical Engineering), Dr Randolph Leung and Dr Eunice Tam (BEng in Product Analysis and Engineering Design), Dr Jiao Zengbao and Dr Zhang Xiao (MSc in Mechanical Engineering). After that, the Associate Head (Teaching & Learning) Dr Yao Haimin led a discussion about teaching and learning, quality assurance, accreditation, scholarship and new scheme update. Besides, Dr Curtis Ng (Space Allocation Committee Secretary) bought up the space issue. Dr Tracy Choy (Publicity Committee Chairlady) reported the local and non-local student recruitment publicity as well as the ME 85th Anniversary Alumni Homecoming Day and celebration activities. Dr Eunice Tam (International Exchange Officer) updated the current outbound and inbound student exchange participation, and elaborated the challenges in expanding global learning experiences. At the end of the retreat, Prof. ZQ Su led an open forum. Over 30 staff members joined the retreat and found it being insightful and constructive for the year to come.