Section 2010YOUNG ACADEMY OF SCIENCES SUMMIT青年科學家峰會

PROGRAMME BOOKLET 2023-2024

SUB-CONFERENCE III

科學領航 啟迪未來 SCIENCE, THE PORTAL TO NEW ENLIGHTENMENTS



THE HONG KONG YOUNG ACADEMY OF SCIENCES 香港青年科學院

> 大灣區共同家園青年公益基金 Greater Bay Area Homeland Youth Community Foundation

Co-organiser:

▲ 大灣區共同家園投資有眼公司 Greater Bay Area Homeland Investments Limited

Funding organisation:

兀創新科技署

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Local academic partner





会 Lingnan 嶺 南 大 學 University 慈 Hong Kong





The University of Hong Kong Technology Transfer Office 香港大學技術轉移處











(Listed in alphabetical order)



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科學領航 啟迪未來 SCIENCE, THE PORTAL TO NEW ENLIGHTENMENTS

YOUNG ACADEMY OF SCIENCES SUMMIT 青年科學家峰會

ABOUT YASS

- Showcases the excellent research work of the young scientists in Hong Kong.
- Provides a unique platform for local young academics and scientists to gather and engage in a cross-disciplinary, cross-cultural and cross-institutional cooperation in Hong Kong.
- Demonstrates Hong Kong's unique position as a strong and energetic research base, well prepared for any knowledge transfer collaborations.



ABOUT THE ORGANISER



The Hong Kong Young Academy of Sciences

The Hong Kong Young Academy of Sciences (YASHK) was established in 2018 and is a chapter of The Hong Kong Academy of Sciences (ASHK). YASHK offers a strong platform for young scientists to make meaningful contribution to the Hong Kong community and build up a better research and education environment for science and technology. Currently, YASHK has 61 young scientists as its Members.

https://yashk.org.hk





ABOUT CO-ORGANISERS

大灣區共同家園投資有限公司 Greater Bay Area Homeland Investments Limited

Greater Bay Area Homeland Investments Limited

The Greater Bay Area Homeland Investments Limited was jointly established by international large-scale industrial institutions, financial institutions and new economic enterprises. Greater Bay Area Homeland Development Fund is set up under the Company to grasp the historical opportunities of the development of Guangdong-Hong Kong-Macao Greater Bay Area, and the construction of an International Innovation and Technology Hub, focusing on technological innovation, industrial upgrading, quality of life, smart city and all other related industries. The Company and the Fund cover venture capital, private equity investment, listed company investment, M&A investment and so on to offer financial support for outstanding entrepreneurs and enterprises, connecting industrial and financial resources, achieving long-term returns for shareholders and investors, and contributing positively to economic and social development.

http://www.gbahomeland.com/



Greater Bay Area Homeland Youth Community Foundation

Founded in September 2019, the Greater Bay Area Homeland Youth Community Foundation (the "Foundation") is a charitable organisation that was established to leverage the enormous growth opportunities made possible by the Greater Bay Area concept. Guided by its mission of "For Our Youth For Our Future", the Foundation is a joint effort by young leaders from all walks of life to support Hong Kong youths in their studies, careers and entrepreneurship. Taking education and training as its focus, the Foundation hopes the work will enable young people to gain a better understanding of the region's business environment and culture that is conducive to their personal and professional growth.

https://www.gbayouth.org.hk/



ABOUT THE FUNDING ORGANISATION

π創新科技署





Innovation and Technology Commission

To promote the development of innovation and technology, an Innovation and Technology Commission (ITC) was set up on 1st July 2000, with the mission to spearhead Hong Kong's drive to become a world-class, knowledge-based economy. The Commission formulates and implements policies and measures to promote innovation and technology; supports applied research, technology transfer and application; promotes technological entrepreneurship; facilitates the provision of technology infrastructure and development of human resources; and promotes internationally accepted standards and conformity assessment services to underpin technological development and international trade. The Commission works closely with its partners in the Government, industry, business, tertiary education institutions and industrial support organisations.

Any opinions, findings, conclusion or recommendations expressed in this material/event (or by members of the project team) do not reflect the views of the Government of the Hong Kong Special Administrative Region, the Innovation and Technology Commission or the Vetting Committee of the General Support Programme of the Innovation and Technology Fund.

YASS ACTIVITY OVERVIEW

1st YASS SUMMIT

December 2023

Sub-Conference I March 2024

Sub-Conference II May 2024

Sub-Conference III September 2024

2nd YASS SUMMIT

December 2024

Sub-Conference IV February 2025

Sub-Conference V April 2025

Sub-Conference VI June 2025

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MEMBERS OF THE PROGRAMME COMMITTEE

The Programme Committee provides general oversight and advice to the YASS 2023/24 & 2024/25.





Prof. Anderson SHUM Prof. Stephanie MA The University of Hong Kong The University of Hong Kong



Prof. Zijian ZHENG The Hong Kong Polytechnic University



Prof. Yang CHAI The Hong Kong Polytechnic University



Prof. Kai LIU Hong Kong University of Science and Technology



Prof. Amos TAI The Chinese University of Hong Kong



Prof. Johnny HO City University of Hong Kong



Prof. Minhua SHAO Hong Kong University of Science and Technology



Prof. Zhifeng HUANG The Chinese University of Hong Kong

Prof. Shih-Chi CHEN



Prof. Kathy Oi Lan LUI The Chinese University of Hong Kong



Prof. Timothy BONEBRAKE The University of Hong Kong



Prof. Giulio CHIRIBELLA The University of Hong Kong



Prof. Zuankai WANG The Hong Kong Polytechnic University



Prof. Fuk Yee KWONG The Chinese University of Hong Kong



Prof. Dangyuan LEI City University of Hong Kong



Prof. Joelle WANG Hong Kong Baptist University



Prof. Ken LEUNG Hong Kong Baptist University

YASS (2023-2024) SUB-CONFERENCE III PROGRAMME RUNDOWN

6 SEPTEMBER 2024 (FRIDAY)

Time: 09:00 - 18:00

Venue: Conference Hall 04-05, 2/F, Building 10W, Hong Kong Science Park Theme: Advanced Manufacturing and New Energy Technology Industries

08:15 - 09:00	Registration	
09:00 - 09:10	OPENING CERE Welcome Message Yang Co-Cha	EMONY LU air of YASS 3rd Sub-Conference Committee
	Opening Remarks	
•	Zijian Found Comm	ZHENG ing Member and Co-Chair of the Industrial Partnership ittee of the Hong Kong Young Academy of Sciences
	Group Photos	

09:10 - 11:15

SESSION 1 Mechanical Metamaterials by Advanced 3D Printing

Speakers



Topic | Multimaterial 3D/4D Printing from Hydrogels to Ceramics **Qi GE**

Associate Head of Mechanical and Energy Engineering at Southern University of Science and Technology; Associate director of Shenzhen Key Laboratory of Soft Mechanics & Smart Manufacturing



Topic | Highly-complex shell lattice metamaterials enabled by implicit design and micro metal 3D printing Xu SONG

Assistant Professor, Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong; Editor-in-Chief, <Materials and Design>



Topic | Achieving enhanced structural and functional properties with additive manufacturing Hongze WANG

Tenured Associate Professor, School of Materials Science and Engineering, Shanghai Jiao Tong University; MIT TR35 China 2022, Marie Skłodowska-Curie Fellowship



Topic | Multi-scale Additive Manufacturing Yang XU

Assistant Professor, Department of Industrial and Manufacturing Systems Engineering, Faculty of Engineering, The University of Hong Kong

Panel Discussion

Moderator



Yang LU

Co-Chair of YASS 3rd Sub-Conference Committee; Member of the Hong Kong Young Academy of Sciences; HKU-100 Scholar Professor in Mechanical Engineering, Director of Nanomechanics Laboratory, The University of Hong Kong

Panelists

Qi GE Xu SONG Hongze WANG Yang XU

11:15-12:55

SESSION 2 Nature-Inspired Manufacturing

Speakers



Topic | 20 years of biomimetic swimming micromotors Wei WANG

Professor, School of Materials Science and Engineering, Harbin Institute of Technology (Shenzhen)



Topic | Honeyed Harmonies: The Biomimetic Fluidics of Bee Nectar Feeding Jianing WU

Associate Professor and Vice Dean of the School of Advanced Manufacturing, Sun Yat-sen University



Topic | High-performance manufacturing of functional structures and interfaces for energy conversion and storage devices Wei YUAN

Deputy Director of the S&T Department, South China University of Technology (SCUT); Director of the Research Centre of High-Performance Manufacturing for Functional Structures and Devices, SCUT; National High Level Talents Special Support Plan – Leading Talents (2021); Excellent Young Scholars of China (NSFC) (2017)

Panel Discussion

Moderator



Wanghuai XU

Assistant Professor, Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University

Panelists

Wei WANG Jianing WU Wei YUAN

12:55 - 14:10

LUNCHEON (by invitation)

14:10 - 15:50

SESSION 3 Next-Generation Energy Conversion and Efficiency Technologies I

Speakers



Topic | Probing recombination dynamics in perovskite tandem solar cells for high-performance renewable energy

Martin STOLTERFOHT

VC Early Carrer Associate Professor, Department of Electronic Engineering, The Chinese University of Hong Kong; Heisenberg fellow, Institute of Physics and Astronomy, University of Potsdam, Germany; Postdoc Prize of the State of Brandenburg in the category of Natural and Engineering Science



Topic | Decarbonizing Buildings: Unlocking Energy Savings through Passive Strategies with Radiative Coolers and Thermochromic Smart Windows

Chi-Yan Edwin TSO

Associate Dean (Internationalisation and Outreach), Associate Professor, School of Energy and Environment, City University of Hong Kong; RGC Research Fellow; Top 2% of the World's Most Highly Cited Scientists in Mechanical Engineering since 2020



Topic | Chip-scale integrated photonic systems for ultrafast and energy-efficient optical and wireless data links

Cheng WANG

Associate Professor, Department of Electrical Engineering, City University of Hong Kong; 35 Innovators Under 35 (China) 2021, MIT Technology Review; Croucher Innovation Award 2020, Croucher Foundation

Panel Discussion

Moderator



Hin-Lap Angus YIP

Co-Chair of YASS 3rd Sub-Conference Committee; Elected member of the Hong Kong Young Academy of Sciences; Professor, Department of Materials Science and Engineering and School of Energy and Environment, City University of Hong Kong; Associate Director, Hong Kong Institute for Clean Energy, City University of Hong Kong; Elected member of the Hong Kong Academy of Engineering Sciences (Young Member Section);

Fellow of the Royal Society of Chemistry

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	Panelists
	Martin STOLTERFOHT
	Edwin Chi-Yan TSO
	Cheng WANG
15 50 10 10	
15:50 - 16:10	Coffee break
	• • • • • • • • • • • • • • • • • • •
16:10 - 17:25	SESSION 4
10.10 11.20	Next-Generation Energy Conversion
	and Efficiency Technologies II
	and Enclency recimologies in
	Speakers
	Topic Recent advances in printable solar cells
	Gang LI
	Fellow of Royal Society of Chemistry;
	Fellow of SPIE; Optica Fellow; Chair Professor of Energy Conversion Technology, Sir Sze-yuen
	Chung Endowed Professor in Renewable Energy.
	Department of Electrical and Electronic Engineering,
	Associate Director, Research Institute for Smart Energy (RISE),
	The Hong Kong Polytechnic University
	Topic Developing reversible high temperature electrochemical
	cells for clean power generation and green hydrogen production
	Meng NI
	Associate Dean (Research) and Chair Professor of Energy Science
	and Technology, Faculty of Construction and Environment,
	The Hong Kong Polytechnic University;
	Humboldt Fellow, Alexander von Humboldt Foundation, Germany;
	University Grants Committee, HKSAR

Panel Discussion

Moderator



Zijian ZHENG

Co-Chair of YASS 3rd Sub-Conference Committee; Founding Member and Co-Chair of the Industrial Partnership Committee of the Hong Kong Young Academy of Sciences; Chair Professor of Soft Materials and Devices, Department of Applied Biology and Chemical Technology, Science Faculty, The Hong Kong Polytechnic University; Director, CR-PolyU Joint Research Institute for Carbon Neutral New Materials: Director, PolyU-Huizhou Technology and Innovation Research Institute; Director, Flexible Electronics Centre, PolyU-Wenzhou Technology and Innovation Research Institute; Associate Director, Research Institute for Intelligent Wearable Systems; Associate Director, University Research Facility in Materials Characterization and Device Fabrication, The Hong Kong Polytechnic University

Panelists Gang LI Meng NI

17:25 - 17:35

CONCLUDING REMARKS



Anderson SHUM

President of the Hong Kong Young Academy of Sciences; Associate Vice-President (Research and Innovation) and Professor of the Department of Mechanical Engineering, The University of Hong Kong; Director, Advanced Biomedical Instrumentation Centre; Member, Global Young Academy

18:00

Banquet

(by invitation)

SPEAKER PROFILE



Yang LU

Member of the Hong Kong Young Academy of Sciences HKU-100 Scholar Professor in Mechanical Engineering, Director of Nanomechanics Laboratory, The University of Hong Kong

Professor in Mechanical Engineering at The University of Hong Kong (HKU). He received his BS degree in Physics

from Nanjing University and PhD degree in Mechanical Engineering from Rice University, and did his postdoctoral research in the Nanomechanics Lab at MIT. Previously, he worked at City University of Hong Kong as Assistant Professor, Associate Professor and Professor during 2012 to 2022. Prof. Lu's research focuses on experimental nanomechanics and nano-manufacturing. He has published more than 200 articles

Yang LU is currently HKU-100 Scholar in leading academic journals including Science, Nature Nanotechnology, Nature Materials, Nature Communications and Science Advances. Professor Lu serves as associate editor for Materials Today, as well as editorial board member for National Science Review, Science China Technological Sciences, and Acta Mechanica Sinica. Prof. Lu is a recipient of UGC Early Career Award 2013/14, the inaugural NSFC Excellent Young Scientists Fund (Hong Kong and Macau) 2019 and RGC Research Fellow 2020/21. He is an elected member of the Hong Kong Young Academy of Sciences (YASHK) in 2022.



Zijian ZHENG

Chair Professor of Soft Materials and Devices, the Department of Applied Biology and Chemical Technology, Science Faculty, The Hong Kong Polytechnic University

Director, CR-PolyU Joint Research Institute for Carbon Neutral New Materials

Director, PolyU-Huizhou Technology and Innovation Research Institute

Director, Flexible Electronics Centre, PolyU-Wenzhou Technology and Innovation Research Institute

Associate Director, Research Institute for Intelligent Wearable Systems

Associate Director, University Research Facility in Materials Characterization and Device Fabrication, The Hong Kong Polytechnic University

Prof. Zijian Zheng is currently Chair Professor of Soft Materials and Devices at the Department of Applied Biology and Chemical Technology at The Hong Kong Polytechnic University. His research interests include surface and polymer science, nanofabrication, flexible and wearable electronics, energy conversion and storage. He has published more than 240 papers in journals such as Science, Nature, Nature Materials, Nature Electronics, Nature Communications, Science Advances, and Advanced Materials, and has filed more than 40 patents. He is recipient of more than 15 academic awards, including PolyU President's Award for Outstanding Achievement (2024), Hong Kong Engineering Science and Technology Award (2023), IUMRS Frontier Materials Young Scientists Award (2023), and Gold Medal

(2019) and Silver Medal (2015, 2023) of GENEVA International Technology Invention Award. Currently, he serves as Editor-in-Chief of EcoMat (impact factor: 10.7), a flagship open-access journal in green energy and environment published by Wiley. He is Founding Member of The Hong Kong Young Academy of Sciences (2018), Young Fellow of The Hong Kong Academy of Engineering Science (YFHKEng, 2024), Chang Jiang Chair Professor by the Ministry of Education of China (2020), Senior Research Fellow of the University Grant Commission of Hong Kong (2021), Fellow of International Association of Advanced Materials (FIAAM, 2021), Fellow of the Royal Society of Chemistry (FRSC, 2022).



Qi GE

Associate Head of Mechanical and Energy Engineering, Southern University of Science and Technology Associate director of Shenzhen Key Laboratory of Soft Mechanics & Smart Manufacturing

Department of Mechanical and Energy Engineering of Southern University of Science and Technology (SUSTech) and

serving as editorial board member of International Journal of Extreme Manufacturing, Microsystems & Nanoengineering. Before joining SUSTech, he was a Postdoctoral Research Fellow at Massachusetts Institute of Technology, and an Assistant Professor from Singapore University of Technology and Design.

Dr. Qi Ge is a tenured professor at Dr. Qi Ge's research interests include 4D printing and its applications to soft robotics and flexible electronics. He has published more than 100 research papers including the high impact papers published in the top journals such as Science Advances, Nature Communications, Advanced Materials. Among them, 13 papers are ESI highly cited papers. Dr. Ge's Google Scholar Citation is more than 12000 times, and he is recognized as Elsevier Most Cited Chinese Researcher.



Xu SONG

Assistant Professor, Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong

Editor-in-Chief, <Materials and Design>

Dr Xu Song obtained his Bachelor degree from Tsinghua University, China and Doctor degree from University of Oxford in

the area of mechanical and material engineering, respectively. After working two years as postdoctoral research fellow for Rolls Royce University Technology Center (RR-UTC) Oxford on residual stress analysis in selective laser melting processes, he joined SIMTech, A*STAR as scientist from 2012 (promoted to senior scientist in 2019), working on micro metal processing, including micro forming and micro selective laser melting, which has won him SIMTech Best Industry Project Award and Staff-of-the-year Award. He joined Chinese University of Hong

Kong in 2019 as Assistant Professor, conducting research and teaching on high-precision selective laser melting and design for additive manufacturing. He has more than 100 papers published in international journals on the topic of material deformation and manufacturing processes. His recent work on high-precision selective laser melting of novel lattice structures has led to many publications and industry awards such as Red Dot Design Award in the areas of design, additive manufacturing and materials. He is a member of Institute of Physics (UK) and Chartered Engineer (UK). He currently serves as the Editor-in-Chief of the top academic journal <Materials and Design>.



Hongze WANG

Tenured associate professor, School of Materials Science and Engineering, Shanghai Jiao Tong University MIT TR35 China 2022, Marie Skłodowska-Curie Fellowship

Hongze Wang is a tenured associate professor at the School of Materials Science and Engineering at Shanghai Jiao Tong University. He has been selected as

a recipient of the National Overseas High-level Young Talents Program and was named one of MIT Technology Review's "35 Innovators Under 35" in China in 2022. Additionally, he is an EU Marie Curie Fellow. Professor Wang has led over ten major research projects, including the National Key Research

and Development Program and the National Natural Science Foundation of China' s projects.

Professor Hongze Wang's primary research focuses on integrated structure-function laser additive manufacturing. He is dedicated to promoting the mass application of metal additive manufacturing technology. His research achievements have been applied in key enterprises such as COMAC, AECC Commercial Aircraft Engine Co., Ltd., and Huawei.



Yang XU

Assistant Professor, Department of Industrial and Manufacturing Systems Engineering, Faculty of Engineering, The University of Hong Kong

Prof. Yang Xu is an assistant professor in the Department of Industrial and Manufacturing Systems Engineering at HKU. He earned his Ph.D. from the University of Southern California (USC)

and a B.S. degree from Beihang University. Before joining HKU, Prof. Xu was a postdoctoral research associate at UC Berkeley. His research focuses on innovative manufacturing technologies, aiming to revolutionize future product design and manufacturing processes. His current research thrusts

include next-generation additive manufacturing, intelligent systems, and novel design approaches enabled by AM. Prof. Yang Xu has published his findings in prestigious journals, such as Nature Communications, Advanced Materials, and Additive Manufacturing. During his Ph.D. studies, he received the Best Paper Award at MSEC 2020 and the Best Ph.D. Dissertation Award in USC' s Epstein Department of Industrial and Systems Engineering. He was also a finalist for the William F. Ballhaus Jr. Prize for Excellence in Graduate Engineering Research.

Wei WANG



Professor, School of Materials Science and Engineering, Harbin Institute of Technology (Shenzhen)

Wei Wang received his B.Sc. in applied chemistry from Harbin Institute of Technology (Harbin, China) in 2008. He then joined the research group of Professor Thomas Mallouk in the

Department of Chemistry at Penn State University, working on nano and microscale motors propelled by self-generated forces. He obtained his PhD degree in 2013 and started his

academic career in 2014 at the School of Materials Science and Engineering at HIT (Shenzhen), where he is currently a full professor. Dr. Wang was a visiting researcher in Steve Granick group at Institute for Basic Science, Center for Soft and Living Matters (Korea) from Feb. 2016 to Feb. 2017. His research interest includes smart and biomimetic materials, colloidal electrokinetics and hydrodynamics, ultrasound manipulation of microparticles, and micromachines/microrobotics.



Jianing WU

Associate Professor and Vice Dean of the School of Advanced Manufacturing, Sun Yat-sen University

Dr Jianing Wu received the Ph.D. degree in Mechanical Engineering from Tsinghua University, China in 2015. He worked as the postdoctoral fellow in Mechanical Engineering in Georgia Tech during 2015-2018. He started at Sun Yat-Sen

University in late summer 2018 as an Associate Professor. His research focuses on fundamental problems of that have bearing on problems in biology and the techniques of biomimetic technologies based on nature's designs. He published more than 50 articles in, such as Nature Nanotechnology, PNAS, National Science Review.



Wei YUAN

Deputy Director of the S&T Department, South China University of Technology (SCUT) Director of the Research Centre of High-Performance Manufacturing for Functional Structures and Devices, SCUT

National High Level Talents Special Support Plan – Leading Talents (2021) Excellent Young Scholars of China (NSFC) (2017)

Professor Wei Yuan is the Director of the Research Centre of High-Performance Manufacturing for Functional Structures and Devices in the School of Mechanical and Automotive Engineering of South China University of Technology. He is also the Director of Guangdong Engineering Research Centre of Advanced Electrical Vehicular Power Sources and Thermal Control Systems.

His research group focuses on the design and manufacturing of functional structures, interfaces and surfaces, components, devices, and systems for energy-related applications (e.g. fuel cells, batteries, supercapacitors, catalytic reactions, heat and mass transfer, thermal management, electric vehicles, etc.). Especially, he is good at using micro-nano fabrication, 3D

printing, and other non-traditional processes to construct and create functional structures, surfaces, and interfaces to satisfy the practical demands of high-performance devices. Bionic design is also involved to provide useful approaches to optimize the device performances.

To recognize his contributions in the related field, he has been granted with many high-level awards from the government. For example, he got the Youth Award of Guangdong Province of China, and the Youth Science Award of Chinese Ministry of Education from the Fok Ying Tung Education Foundation in 2022. As a core contributor, he also won the Second Prize of National Science and Technology Progress of China in 2016.

Wanghuai XU



Assistant Professor, Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University

Dr. Xu Wanghuai is currently an Assistant Professor in Department of Electrical and Electronic Engineering at The Hong Kong Polytechnic University. He received his

PhD degrees from City University of Hong Kong and University of Science and Technology of China in 2020, after which he worked as a postdoctoral fellow (under the RGC postdoctoral fellowship scheme) in the Department of Mechanical Engineering at City University of Hong Kong. His research focuses on designing electrical devices that can efficiently harvest energy from renewable sources, such as water, sunlight, heat, and their nexus, and developing cross-scale applications ranging from

small-scale IoTs to large-scale multi-source energy harvesting and management. He is also interested in the study of the interfacial electrical phenomena, especially the water-electricity interaction at the three-phase interface, which are important in some applications such as microfluidics and atmospheric water harvesting. Over the past several years, he has published more than 40 papers in Journals such as Nature, Science Advances, Joule, and PNAS. His works have been recognized by many awards, including the Hong Kong Youth Scientist Award (2022), MRS Graduate Student Silver Award (2021), RGC postdoctoral fellowship (2021), and Hiwin Doctoral Dissertation Outstanding Award (2021).



Martin STOLTERFOHT

VC Early Carrer Associate Prof., Department of Electronic Engineering, The Chinese University of Hong Kong (CUHK)

Heisenberg fellow, Institute of Physics and Astronomy, University of Potsdam (UP), Germany

Postdoc Prize of the State of Brandenburg in the category of Natural and Engineering Science

Prof. Stolterfoht is an Early Career VC Associate Prof. at The Chinese University

of Hong Kong (CUHK). He joined the Electronic Engineering Department on 1st of August 2023. Before this appointment, he was awarded a Heisenberg fellowship of the German Research Foundation in 2022 and he was the leader of the Perovskite Group at the University of Potsdam, Germany, and completed his Ph.D. at the University of Queensland, Australia. Prof. Stolterfoht is renowned for his research on effective methodologies to understand and decouple non-radiative recombination loss

mechanisms in perovskite single-junction, and multi-junction cells, which are now widely adopted in the research community. More recently, they developed an experimental methodology to quantify efficiency and degradation losses induced by ion migration in perovskite photovoltaics (PV) and developed highperformance single- and multi-junction perovskite solar cells. With his research at CUHK, he aims to enhance the stability of perovskite-based tandem solar cells to an industrial level (>20 years), which is currently the major bottleneck for the largescale commercialization of perovskite-based PV.



Chi-Yan Edwin TSO

Associate Dean (Internationalisation and Outreach), Associate Professor, School of Energy and Environment, City University of Hong Kong RGC Research Fellow

Top 2% of the World's Most Highly Cited Scientists in Mechanical Engineering since 2020

Ir Prof. Edwin C.Y. Tso is the Associate Dean (Internationalisation and Outreach) and

Associate Professor at the School of Energy and Environment of City University of Hong Kong (CityUHK).

His research focuses on understanding the fundamentals of heat transfer, energy conversion, and engineered materials. He strives to integrate theory and experiments to create innovative solutions for enhancing thermal management, indoor built environments, space cooling and refrigeration, micro-droplet manipulation, and energy-efficient building technologies, making a great and global impact by addressing the biggest issues in our world. Prof. Tso has published 90 journal papers,

in Science, Nature Communications, Advanced Materials, Advanced Science, Advanced Functional Materials, etc. His work published in Science has garnered significant attention, with nearly 40 local and international media outlets reporting on it. Besides, he is listed among the Top 2% of the world's most highly cited scientists in Mechanical Engineering since 2020, and he is also a Member of The Hong Kong Institution of Engineers (MHKIE), The Chartered Institution of Building Services Engineers (MCIBSE), The Institution of Mechanical Engineers (MIMechE), The American Society of Mechanical Engineers (MASME), Chartered Engineer (CEng), and Registered Professional Engineer (PRE). Recently, he was conferred RGC Research Fellow under the RGC RFS 2024/25.

Cheng WANG



Associate Professor, Department of Electrical Engineering, City University of Hong Kong 35 Innovators Under 35 (China) 2021, MIT Technology Review Croucher Innovation Award 2020, Croucher Foundation

Prof. Wang received his B.S. degree in Microelectronics from Tsinghua University

in 2012, and his S.M. (2015) and Ph.D. (2017) degrees, both in Electrical Engineering from Harvard University, supervised by Prof. Marko Lončar. After conducting research as a postdoctoral fellow at Harvard, he joined City University of Hong Kong as an Assistant Professor in 2018, and was promoted to Associate Professor in 2023. Prof. Wang's research focuses on the design and nanofabrication technology of integrated photonic devices and circuits. His current research effort focuses on realizing integrated lithium niobate photonic circuits for applications

in optical communications, millimeter-wave/terahertz technologies, nonlinear optics, and quantum photonics. Since joining CityU, Prof. Wang has received a number of awards in both research and teaching, including the NSFC Excellent Young Scientist Fund (HK & Macau) (2019), the Croucher Innovation Award (2020), The President's Award, CityU (2020), 35 Innovators Under 35 (China), MIT Technology Review (2021), as well as EE Outstanding Teaching Award (2019/20&2020/21) and College Outstanding Teaching Award (2020/21). He is Senior Members of IEEE and Optica.



Angus Hin-Lap YIP

Professor, Department of Materials Science and Engineering and School of Energy and Environment, City University of Hong Kong

Associate Director, Hong Kong Institute for Clean Energy, City University of Hong Kong

Elected member of the Hong Kong Young Academy of Sciences & Hong Kong Academy of Engineering Sciences (Young Member Section); Fellow of the Royal Society of Chemistry

Professor Angus Yip received his Ph.D.

from the University of Washington. He was a faculty member at South China University of Technology from 2013 to 2020 before joining City University of Hong Kong (CityUHK) in 2021. At CityUHK, he is a Professor in the Department of Materials Science and Engineering and the School of Energy and Environment, as well as the Associate Director of the Hong Kong Institute for Clean Energy. Prof. Yip has authored over 300 publications, with an H-index of 105 and more than 44,000 citations. He has been a "Highly Cited Researcher" by Clarivate for ten consecutive years from 2014 to 2023. His accolades include membership

in the Hong Kong Young Academy of Sciences (2022), the Young Member Section of HKAES (2024), the IUMRS-Frontier Materials Young Scientist Award (2023), and a Fellowship at the Royal Society of Chemistry (2023). His research focuses on solution-processed optoelectronic materials and devices, including organic and perovskite solar cells and LEDs. His interdisciplinary team aims to optimize device performance and advance commercialization efforts, and his work has led to spinoff companies advancing photovoltaic technology, aiding renewable energy deployment and Hong Kong's sustainable development.



Gang LI

Fellow of Royal Society of Chemistry, Fellow of SPIE, Optica Fellow Chair Professor of Energy Conversion Technology, Sir Sze-yuen Chung Endowed Professor in Renewable Energy, Department of Electrical and Electronic Engineering, Associate Director, Research Institute for Smart Energy (RISE),

The Hong Kong Polytechnic University

Dr. Gang Li is Chair Professor in the Department of Electrical and Electronic Engineering, Hong Kong Polytechnic University. He obtained BS degree from Wuhan University (Space Physics), PhD (Condensed Matter Physics) and MS (EE) degrees from Iowa State University. His research interests are organic polymer and hybrid perovskite optoelectronic devices for energy applications. His postdoc research in UCLA (2004-2007) was on polymer solar cells and Polymer LEDs. From 2007 to 2011, he was VP of Solarmer Energy Inc., leading Organic PV research. He has been among

Thomson Reuter/Clarivate Analytics' Highly Cited Researchers (Materials Science, 2014 - 2018; Physics 2017 - 2018; Chemistry 2018) since 2014. He has published over 260 peer reviewed papers, with over 81,000 citations by Google Scholar and H-index of 94. He is Fellow of Royal Society of Chemistry, Optica and SPIE, Associate Editor of Journal of Photonics for Energy (SPIE), and editorial board member of Journal of Energy Chemistry (Elsevier), The Innovation Materials, and Applied Research.



Meng NI

Associate Dean (Research) and Chair Professor of Energy Science and Technology, Faculty of Construction and Environment, The Hong Kong Polytechnic University Humboldt Fellow, Alexander von Humboldt Foundation, Germany

RGC Senior Research Fellow, Research Grants Council, University Grants Committee, HKSAR

Prof. Meng NI is an Associate Dean and a Chair Professor of Energy Science and Technology of The Hong Kong Polytechnic University.

His research focuses on high temperature fuel cells for clean power generation and electrolyzers for green hydrogen production. His team successfully developed a series of new perovskite oxide materials with high performance and durability for use in fuel cells/electrolyzers. His team proposed the thermal expansion offset approach for new cathode material development, with outstanding performance and durability. They integrated machine learning with experimental

investigation to facilitate new material discovery and identified potential materials from over 6000 possible material compositions. Apart from experimental investigation, his team developed a From Powder-to-Power Framework for designing and optimizing the micro- and macro-structures of fuel cells/ electrolyzers.

Prof. Meng Ni received several awards, including Hong Kong Young Scientist Award in 2007, WSSET Innovation Awards (World Society of Sustainable Energy Technologies) in 2021, Innovation Awards (China Energy Research Society) in 2022, and RGC Senior Research Fellowship Award in 2023.



Anderson SHUM

President, The Hong Kong Young Academy of Sciences Professor, Department of Mechanical Engineering; Associate Vice-President (Research and Innovation), The University of Hong Kong Director, Advanced Biomedical Instrumentation Centre Member, Global Young Academy

Ir. Prof. Anderson Ho-Cheung SHUM is currently the President of The Hong Kong Young Academy of Sciences; Associate Vice-President (Research and Innovation), Professor in the Department of Mechanical Engineering at the University of Hong Kong and the Director of the Advanced Biomedical Instrumentation Centre.

His strong R&D is globally recognized by receiving numerous international awards. His research areas include emulsions, biomicrofluidics, biomedical engineering and soft matter.

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