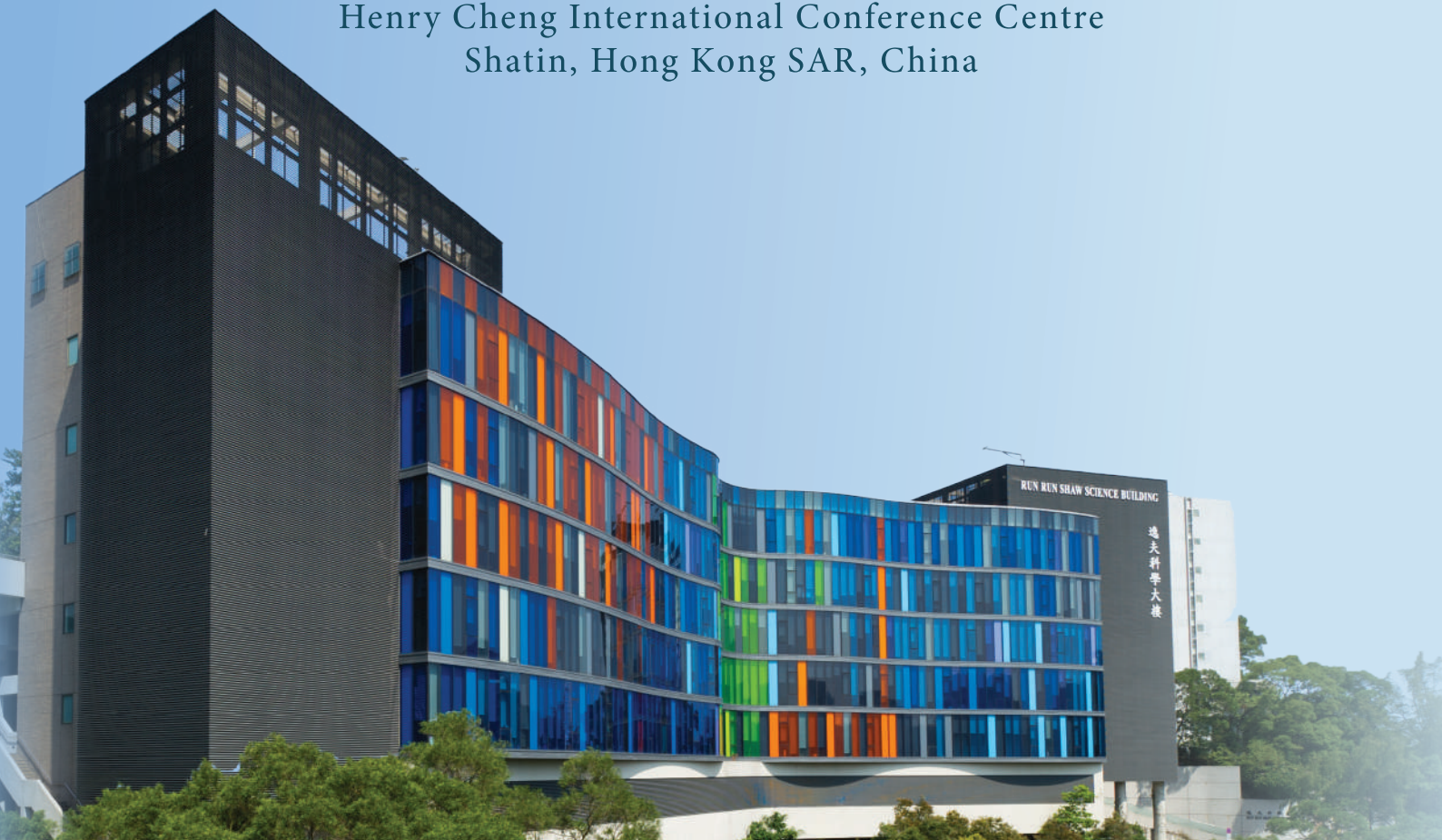
香港中文大學理學院
FACULTY OF SCIENCE
THE CHINESE UNIVERSITY OF HONG KONG

International Conference on
Earth, Energy & Environmental Sciences for Carbon Neutrality

INTERNATIONAL CONFERENCE
EARTH, ENERGY & ENVIRONMENTAL SCIENCES
CARBON NEUTRALITY 2023

December 1 - 5, 2023

Henry Cheng International Conference Centre
Shatin, Hong Kong SAR, China



Content

Conference Website and Abstract

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Welcome Remarks

Professor Chunshan SONG

Conference Chair for ICE3SCN and Dean of Science at CUHK

On behalf of the Organising Committee, I would like to extend a warm welcome to all of you to the first "International Conference on Earth, Energy & Environmental Sciences for Carbon Neutrality (ICE3SCN)" organised by the Faculty of Science at The Chinese University of Hong Kong on the occasion of its 60th Anniversary.

ICE3SCN serves as a platform for researchers, practitioners, policymakers, and students from academia, industry, and government to come together and engage in meaningful discussions, exchange ideas, and share their experiences. It is through the collaborative efforts worldwide and collective wisdom of individuals like yourselves that we can shape a sustainable future and work towards carbon neutrality. Our conference aligns with *Hong Kong's Climate Action Plan 2050*, announced in 2021, which outlines our commitment to combat climate change and achieve carbon neutrality. As a renowned ethologist, Dr. Jane Goodall, once said, "You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make." We are at a critical juncture for promoting sustainable development on the Earth related to the energy and the environment and for preserving our planet for future generations. Let us seize this opportunity to make a positive impact, to bring about meaningful change, and to leave a lasting legacy for future generations.

This conference ICE3SCN also holds a special significance as we celebrate not only the 60th anniversary of the Faculty of Science at CUHK, but also the establishment of the new Earth and Environmental Sciences (EESC) Programme within our Faculty. Embodying the Faculty mission, "To educate and inspire the next generation of scientific innovators and leaders; and to expand the frontier of human knowledge", our Science Faculty is building upon the achievements and knowledge of those who came before us in the past 60 years, and we have the responsibility to further develop the Faculty. With ~540 staff members in six academic units, two State Key Labs and three AOE Centres, the Faculty has ~2800 undergraduate students in 20 BSc degree programmes and ~1200 postgraduate students in 20 PhD/MPhil/MSc programmes. Our Faculty strongly encourages continuous pursuit of excellence in teaching and learning, research and service to society at large. As a new initiative, we recently established the EESC Programme in August 2022 in order to promote the talents nurturing through education and research at CUHK in the earth, energy, and environmental sciences towards carbon neutrality and the betterment of our world.

As the Dean of Science at CUHK and the Conference Chair for ICE3SCN, I would like to thank all the plenary, keynote and invited speakers from different parts of the world whose contributions are critically important for the success of this international conference and for the lasting impacts of research in these areas. I would like to express my heartfelt gratitude to the international advisory board, members of organising committee, all session co-organisers and dedicated staff at CUHK who have worked tirelessly to make this conference possible. Last but not least, I would also like to express my deepest appreciation to all the participants, all the sponsors and partners for their invaluable support and contributions to ICE3SCN. We hope all the conference participants will learn something new and interesting from colleagues' sharing and exchange of scientific ideas. We also hope our non-local and international participants will be able to enjoy what Hong Kong has to offer in this season.

Thank you.

ICE3SCN

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University of Detroit Mercy

Prof. Randy DAHLGREN
University of California, Davis

Organising Committee

Conference Chair:

Prof. Chunshan SONG (The Chinese University of Hong Kong)

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Prof. Lin LIU (The Chinese University of Hong Kong)
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Prof. Haipeng LU (Hong Kong University of Science and Technology)
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Prof. Lei WANG (National University of Singapore)
Prof. Ziyun WANG (University of Auckland)
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Prof. Angus Hin Lap YIP (City University of Hong Kong)
Prof. Sheng ZHANG (Tianjin University)
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Prof. Haiwei LUO (The Chinese University of Hong Kong)
Prof. Martin Tsz Ki TSUI (The Chinese University of Hong Kong)

Conference Secretary:

Dr. Angela HUNG (The Chinese University of Hong Kong)

International Conference on
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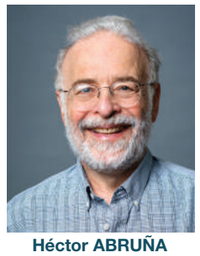
Plenary Speakers



Héctor ABRUÑA
Emile M. Chamot Professor
Cornell University

Derek ELSWORTH
G. Albert Shoemaker Chair and Professor of Energy and Mineral Engineering and Geosciences
The Pennsylvania State University

Alex Kwan Yue JEN
Lee Shau Kee Chair Professor of Materials Science
City University of Hong Kong

Kenneth Mei Yee LEUNG
Chair Professor of Environmental Toxicology and Chemistry
City University of Hong Kong

Yongfang LI
Professor
Soochow University

Satish MYNENI
Professor of Geosciences
Princeton University

Shigang SUN
Professor
Xiamen University

Thomas BORCH
Professor
Colorado State University

Plenary Lectures at CYT LT1 (1/F)

Date	Time	Topic/Speaker(Affiliation)
2 Dec	09:30 - 10:00	**Opening Ceremony & Welcome Address**
	10:00 - 10:30	**PL-1:** From Nanometer-Sized Molecular Photovoltaics to Meter-Sized Printable Organic and Perovskite Solar Cells for Clean Energy **Alex Kwan Yue JEN** (CityU, Hong Kong)
	10:30 - 11:00	**PL-2:** Evolving Connections Between Minerals and Enhanced Carbon Storage in Soils **Satish MYNENI** (Princeton University, USA)
	11:30 - 12:00	**PL-3:** Understanding Triggered Seismicity and Permeability Evolution in the Subsurface – Key Needs in Pursuit of the Energy Transition **Derek ELSWORTH** (The Pennsylvania State University, USA)
3 Dec	09:00 - 09:30	**PL-4:** Reviving Manmade Seawalls: Enhancing Marine Biodiversity and Carbon Sequestration through Innovative Approaches **Kenneth Mei Yee LEUNG** (CityU, Hong Kong)
	09:30 - 10:00	**PL-5:** Structural Design and Performance Regulation of Electrochemical Energy Materials **Shigang SUN** (Xiamen University, China)
	10:30 - 11:00	**PL-6:** Photovoltaic Materials for Organic Solar Cells **Yongfang LI** (Soochow University, China)
4 Dec	09:00 - 09:30	**PL-7:** Energy Conversion and Storage: Novel Materials and Operando Methods **Héctor ABRUÑA** (Cornell University, USA)
	09:30 - 10:00	**PL-8:** Wildfire Impacts on Soil Carbon Cycling **Thomas BORCH** (Colorado State University, USA)

Keynote Speakers

Earth and Energy Transition

Arthur Chuen Hon CHENG
Adjunct Professor
The Chinese University of Hong Kong

Junlun LI
Professor
University of Science and Technology of China

Ping TONG
Assistant Chair and Associate Professor
Nanyang Technological University

Yibo WANG
Professor of Geophysics
Institute of Geology and Geophysics, CAS

Energy Conversion

Chongan DI
Professor
Institute of Chemistry, CAS

Martin HEENEY
Professor of Organic Materials
Imperial College London

Gang LIU
Professor and Director
Institute of Metal Research, CAS

Brian SEGER
Professor
Technical University of Denmark

Minhua SHAO
Cheong Ying Chan Professor of
Energy Engineering and Environment
Chair Professor
Hong Kong University of
Science and Technology

Feng WANG
Professor and Deputy Director
Dalian Institute of
Chemical Physics, CAS

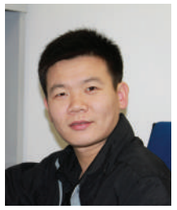
Xiaowei ZHAN
Professor
Peking University

Qiang ZHANG
Long-term Professor
Tsinghua University

Tierui ZHANG
Professor
Technical Institute of
Physics and Chemistry, CAS

Lin ZHUANG
Wuhan Univeristy ZHA Quanxing
Chair Professor
Wuhan University

Environment



Jingbi YOU
Professor
Institute of Semiconductors, CAS

Wei YOU
Professor of Chemistry and
Applied Physical Sciences
and Department Chairperson
University of North Carolina at Chapel Hill

Sae Yun KWON
Professor
Pohang University of
Science and Technology

Patrick SCHLEPPI
Scientist
Swiss Federal Institute for Forest, Snow,
and Landscape Research WSL

International Conference on
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ICE3SCN

Venue

HENRY CHENG INTERNATIONAL CONFERENCE CENTRE
鄭家純國際會議中心

As a forward-looking comprehensive research university with a global vision and a mission to combine tradition with modernity, and to bring together China and the West, The Chinese University of Hong Kong (CUHK) established the Henry Cheng International Conference Centre (HCICC) to host international academic conferences on campus. HCICC at Cheng Yu Tung Building (CYT) will serve as an international conference hub activating academic exchange among scholars around the world, as well as enhancing the international reputation of CUHK and Hong Kong.

From Downtown to HCICC

By Mass Transit Railway (MTR)

- Interchange East Rail Line at Kowloon Tong Station
- Take any trains (East Rail Line) heading to Lo Wu/ Lok Ma Chau Station
- Get off at University Station
- Leave the station through Exit B, turn right and go straight ahead for a 3 minutes' walk to Cheng Yu Tung Building

By Taxi

- Take a red or green taxi and get off directly at Cheng Yu Tung Building, CUHK

From HK International Airport to HCICC

By Mass Transit Railway (MTR)

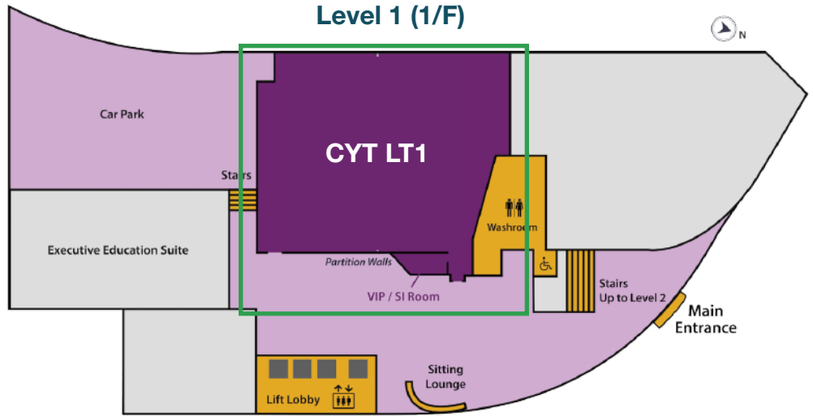
- Take airport bus route number A41 from the airport to the Shatin Central Bus Terminal (Shatin New Town Plaza)
- Walk to MTR Shatin Station and take the East Rail Line (any train heading to Lo Wu/ Lok Ma Chau Station)
- Get off at University Station
- Leave the station through Exit B, turn right and go straight ahead for a 3 minutes' walk to Cheng Yu Tung Building

By Taxi

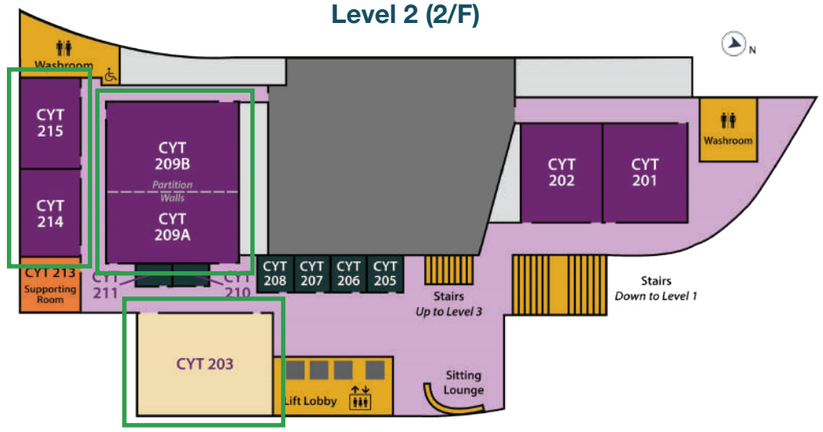
- Take a red or green taxi from the airport directly to Cheng Yu Tung Building, CUHK

Cheng Yu Tung Building (CYT)
Floor Plan

Level 1 (1/F)



Level 2 (2/F)



Floor	Room	Event
1/F	LT1	Plenary Session & Energy Conversion Session
2/F	209A	Earth & Energy Transition Session
	209B	Environment Session
	203	Poster Presentation for Energy Conversion Session
	214	Poster Presentation for Earth & Energy Transition Session
	215	Poster Presentation for Environment Session
3/F	The Stage	Food & Beverage (Welcome Reception and Refreshment)

Conference schedule

1 - 5 December 2023

Date	Time	Arrangement
1 Dec	15:00 - 20:00	Registration
	17:00 - 19:30	Welcome Reception
2 Dec	09:30 - 10:00	Opening Ceremony & Welcome Address
	10:00 - 12:00	Plenary Lectures 1 - 3
	12:00 - 18:00	Session Lectures and Poster Session
3 Dec	09:00 - 11:00	Plenary Lectures 4 - 6
	11:00 - 18:00	Session Lectures and Poster Session
4 Dec	09:00 - 10:00	Plenary Lectures 7 - 8
	10:30 - 12:30	Session Lectures and Poster Session
	14:00 - 18:00	Excursion
	18:00 - 21:30	Conference Banquet
5 Dec	09:00 - 10:45	Session Lectures
	10:45 - 11:00	Closing Remarks

International Conference on
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Conference Programme (1 Dec)

Time	Event	Venue
15:00 - 20:00	Registration	CYT 1/F Foyer
17:00 - 19:30	Welcome Reception	The Stage @ CYT 3/F

Conference Programme (2 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	CYT LT1 (1/F)
09:30 - 10:00	**Opening Ceremony & Welcome Address** Chunshan SONG (CUHK, Hong Kong)
10:00 -10:30	**PL-1: From Nanometer-Sized Molecular Photovoltaics to Meter-Sized Printable Organic and Perovskite Solar Cells for Clean Energy** Alex Kwan Yue JEN (CityU, Hong Kong)
10:30 - 11:00	**PL-2: Evolving Connections Between Minerals and Enhanced Carbon Storage in Soils** Satish MYNENI (Princeton University, USA)
11:00 - 11:30	Coffee Break
11:30 - 12:00	**PL-3: Understanding Triggered Seismicity and Permeability Evolution in the Subsurface – Key Needs in Pursuit of the Energy Transition** Derek ELSWORTH (The Pennsylvania State University, USA)

	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
	Session: Energy Conversion Session Chairs: Xinhui LU & Ying WANG	Session: Earth Science Session Chair: Hui SU	Session: Environment Session Chairs: Alex CHOW, Martin TSUI, Haiwei LUO
12:00 - 12:30	12:00 KN - Defective Layered Double Hydroxide Based Nanostructured Photocatalysts Tierui ZHANG (Technical Institute of Physics and Chemistry, CAS, China) 12:20 KN - Ferroelectric Photocatalysts for Overall Water Splitting Gang LIU (Institute of Metal Research, CAS, China)	12:00 KN - The SEG and a Changing World Arthur Chuen Hon CHENG (CUHK, Hong Kong)	12:00 KN - Environmental Intersection Between Net Zero Carbon and Atmospheric Mercury: Insights From Mercury Stable Isotopes Sae Yun KWON (Pohang University of Science and Technology, South Korea)
12:30 - 14:00	Lunch (12:40 Lunch cum Poster Session [CYT 203 (2/F)] for Energy Conversion Session)		

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Conference Programme (2 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
14:00 - 18:00	Session 1: PV Session Chairs: Hongzheng CHEN & Qi CHEN	Session: Earth Science Session Chairs: Hongfeng YANG & Lin LIU	Session: Environment Session Chairs: Alex CHOW, Martin TSUI, Haiwei LUO
	14:00 KN - Efficient Perovskite Solar Cells and Light-Emitting Diodes Jingbi YOU (Institute of Semiconductors, CAS, China)	14:00 KN - Low-Cost Early-Stage Investigation of Geothermal Energy Potential via Seismic Analysis: A Case Study in Singapore Ping TONG (Nanyang Technological University, Singapore)	14:00 Oral - Variations of Methylmercury in a Mangrove Wetland Sediments: Insights from Subtropical Ecosystems in Hong Kong Shaoyi WANG (CUHK, Hong Kong)
	14:20 IN - Strategies for Improving the Performance of Sn-Based Perovskite Solar Cells Feng YAN (PolyU, Hong Kong)	14:20 IN - Understanding Volcanic Unrest Driven by Subsurface Fluid Processes through Multiphysics Modeling Yan ZHAN (CUHK, Hong Kong)	14:10 Oral - Using Dairy Livestock Wastewater for Microalgae Production Alex CHOW (CUHK, Hong Kong)
	14:35 IN - From UV to Near-Infrared Light Detection: Next Generation Photodetectors for Imaging and Biometric Applications Nicola GASPARINI (Imperial College London, UK)	14:35 IN - Seismic Imaging of Urban Faults and Ocean Subduction Zones Using Earth's Ambient Vibrations Xin LIU (HKU, Hong Kong)	14:20 Oral - Methylmercury Biomagnification in Subtropical Forest Food Webs Long Hei CHENG (CUHK, Hong Kong)
	14:50 IN - Stable and Efficient Perovskite Optoelectronic Devices Huanping ZHOU (Peking University, China)	14:50 IN - Applied Geophysical Research for Sustainable Societies Yunyue Elita LI (Purdue University, USA)	14:30 Oral - Two New Clades Recovered at High Temperatures Provide New Phylogenetic and Genomic Insights into Ca. Accumulibacter Xiaojing XIE (South China University of Technology, China)
	15:05 IN - Reducing the Non-Radiative Charge Recombination for High-Performance Organic Solar Cells With Multi-Functionalities Lijian ZUO (Zhejiang University, China)	15:05 IN - Quantifying Carbon Emissions Through Satellite and Surface Measurements to Support the Transition to Carbon Neutrality in Hong Kong and the GBA Hui SU (HKUST, Hong Kong)	14:40 Oral - Candidatus Accumulibacter Use Fermentation Products for Enhanced Biological Phosphorus Removal Guanglei QIU (South China University of Technology, China)
	15:20 IN - Heterogeneity in Perovskite Solar Cells Qi CHEN (Beijing Institute of Technology, China)	15:20 IN - Assessing the Photosynthetic Response of Amazon Forests to Climate Change Jin WU (HKU, Hong Kong)	14:50 Q&A Session
	15:35 Oral - Revealing and Regulating Crystallization Pathways for Efficient and Stable All-Inorganic Perovskite Solar Cells Xiao WU (CUHK, Hong Kong)	15:35 - 16:00 Coffee Break	15:00 Oral - Study on Photocatalytic Degradation to Eliminate Microplastic Pollution in Water Environment Under Carbon Neutral Background Huixue REN (Shandong Jianzhu University, China)
	15:45 - 16:05 Coffee Break	16:00 - 18:00 Poster Session [CYT 214 (2/F)]	15:10 Oral - Influences of Microplastics on Mercury Cycling in Forested Ecosystems Ming Yin YAU (CUHK, Hong Kong)
	Session 2: Energy Session Chairs: Sheng ZHANG & Zhenyu YANG		15:20 Oral - Mercury in Human Health: Effects on Sperm Dysfunction and Maternal-Fetal Blood Systems Mengwei YUAN (CUHK, Hong Kong)
	16:05 KN - Development of High Performance and Durable Fuel Cell Electrocatalysts Minhua SHAO (HKUST, Hong Kong)		15:30 Oral - Agroecosystem Modeling of Reactive Nitrogen Emissions from U.S. Agricultural Soils with Biochar Amendments Lina LUO (CUHK, Hong Kong)
	16:25 KN - High-performance Organic Thermoelectric Materials and Devices Chongan DI (Institute of Chemistry, CAS, China)		15:40 Oral - Impacts of Interannual Climate Variability on Fire Activities, Biomass Burning Emissions and Air Quality in Amazon Leo Tsin Hung NG (CUHK, Hong Kong)
	16:45 IN - Electrochemical CO_2 Reduction to Liquid Products Sheng ZHANG (Tianjin University, China)		15:50 Q&A Session
	17:00 IN- Tuning the Composition and Physical Properties of Silicon Quantum Dots Zhenyu YANG (Sun Yat-Sen University, China)		16:00 - 16:20 Coffee Break
	17:15 Oral - Layer Modulation of Aurivillius Compounds for Stable Photocatalytic Overall Water Splitting Jie HUANG (Institute of Metal Research, CAS, China)		16:20 - 18:00 Poster Session [CYT 215 (2/F)]
	17:25 Oral - Semiconductor Patterns Steer Directional Charge Transfer Toward Overall Water Splitting Chao ZHEN (Institute of Metal Research, CAS, China)		

Conference Programme (3 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	CYT LT1 (1/F)		
09:00 - 9:30	**PL-4: Reviving Manmade Seawalls: Enhancing Marine Biodiversity and Carbon Sequestration through Innovative Approaches** Kenneth Mei Yee LEUNG (CityU, Hong Kong)		
09:30 - 10:00	**PL-5: Structural Design and Performance Regulation of Electrochemical Energy Materials** Shigang SUN (Xiamen University, China)		
10:00 - 10:30	Coffee Break		
10:30 - 11:00	**PL-6: Photovoltaic Materials for Organic Solar Cells** **Yongfang LI** (Soochow University, China)		
	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
11:00 - 12:30	Session 1: Energy Session Chairs: Guoxiong WANG & Lei WANG	Session: Energy Transition Science Session Chair: Yunyue Elita LI	Session: Environment Session Chairs: Alex CHOW & Martin TSUI
	11:00 KN - Alkaline Polymer Electrolyte Based Technologies: Fuel Cells and Electrolysis Lin ZHUANG (Wuhan University, China)	11:00 KN - Research on Geophysical Exploration and Monitoring Technologies in Carbon Dioxide Geological Sequestration Yibo WANG (Institute of Geology and Geophysics, CAS, China)	11:00 KN - Interactions Between Carbon and Nitrogen Cycles in Temperate Forest Ecosystems Patrick SCHLEPPI (Swiss Federal Institute for Forest, Snow, and Landscape Research WSL, Switzerland)
	11:20 KN - Catalytic Lignin Depolymerization and Aromatic Chemicals Feng WANG (Dalian Institute of Chemical Physics, CAS, China)	11:20 IN - Signatures of Subsurface Fluids in the Earthquake Waveforms Hongfeng YANG (CUHK, Hong Kong)	11:20 Oral - Tracking Circulation Change in the Western North Atlantic During the Little Ice Age Using a Multi-Proxy Approach Wai Ching CHU (CUHK, Hong Kong)
	11:40 IN - Electrochemical Decarbonization Technology Guoxiong WANG (Dalian Institute of Chemical Physics, CAS, China)	11:35 IN - Stability Analysis of Underground Storage Caverns for Energy Products using FDEM Qi ZHAO (PolyU, Hong Kong)	11:30 Oral - A Microcosm of Nitrogen Removal and Carbon Mineralization under Salinity Gradients: An Insight into Coastal Salinity Intrusion Ziyan WANG (CUHK, Hong Kong)
	11:55 IN - Promote Pd-Catalyzed CO_2 to Formate Conversion via Manipulation of the PD Valence State Lei WANG (National University of Singapore, Singapore)	11:50 Oral - Stress Transfer Outpaces Injection-Induced Aseismic Slip and Triggers Seismicity Yuyun YANG (CUHK, Hong Kong)	11:40 Oral - Baseline Lithium-Ion Concentrations in Sediments and Soils in a Rural Area of Hong Kong Norah MUISA (CUHK, Hong Kong)
	12:10 IN - Tailoring the Molecular Interfaces for Boosted CO_2 Reduction Ruquan YE (CityU, Hong Kong)	12:00 Oral - Least-Squares Reverse Time Migration of Vertical Seismic Profile Data for CO_2 Storage Monitoring Jizhong YANG (Tongji University, China)	11:50 Oral - Mercury Biomagnification in Temperate Grassland Food Web (Kansas, USA) Jack Tsun Hung CHEUNG (CUHK, Hong Kong)
	12:25 Oral - Tailoring the Selectivity for Liquid Products in Plasma-Enhanced Catalytic Conversion of CO_2 and CH_4 Pengxian YE (CUHK, Hong Kong)		12:00 Q&A Session
12:30 - 14:00	Lunch (12:35 Lunch cum Poster Session [CYT 203 (2/F)] for Energy Conversion Session)		

Conference Programme (3 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
14:00 - 18:00	Session 2: PV Session Chairs: Xinhui LU & Nicola GASPARINI	Session: Energy Transition Science Session Chair: Yan ZHAN	Session: Environment Session Chairs: Alex CHOW & Martin TSUI
	14:00 KN - Fused-Ring Electron Acceptors for Organic Photovoltaics Xiaowei ZHAN (Peking University, China)	14:00 KN - Systematic Study of the Induced Seismicity in the Changning Shale Gas Field in China Junlun LI (University of Science and Technology of China, China)	14:00 Poster Session [CYT 215 (2/F)]
	14:20 KN - Strategic Incorporation of Cleavable Side Chains Improves Thermal Stability of Polymer Solar Cells Wei YOU (University of North Carolina at Chapel Hill, USA)	14:20 IN - On the Non-double-Couple Components of Small-Moderate Magnitude Earthquakes Ruijia WANG (SUSTech, China)	
	14:40 IN - Strategies for Boosting the Performance of Organic Photovoltaics Thomas ANTHOPOULOS (KAUST, Saudi Arabia)	14:35 IN - Source Characteristics of Icequakes Caused by Surface Crevasses on Urumqi Glacier No. 1, Tianshan, China Risheng CHU (University of Chinese Academy of Sciences, China)	
	14:55 IN - Asymmetric Design of Electron Acceptors for High Performance Organic Solar Cells Hongzheng CHEN (Zhejiang University, China)	14:50 IN - The 2022 MW 7.3 Southwest Sumatra Tsunami Earthquake: Rupture Up-Dip of the 2007 MW 8.4 Bengkulu Event Lingling YE (SUSTech, China)	
	15:10 IN - Strategies for Engineering Performance Improvements in Perovskite Photovoltaics Martyn MCLACHLAN (Imperial College London, UK)	15:05 Oral - The Long-term Fault Activation of the 2019 Weiyuan Mw 5.0 Earthquake in the Weiyuan Shale Gas Field, China Jinping ZI (CUHK, Hong Kong)	
	15:25 - 15:40 Coffee Break	15:15 Q&A session	15:30 Technical Discussion / Lab visit (By Invitation Only)
	Session 3: PV Session Chairs: Philip Chi Yung CHOW & Angus Hin Lap YIP	15:25 - 15:40 Coffee Break	
	15:40 KN - Materials Development for Organic Solar Cells Martin HEENEY (Imperial College London, UK)	15:45 - 18:00 Poster Session [CYT 214 (2/F)]	
	16:00 IN - Materials Design and Challenges for Non-Fullerene Organic Solar Cells He YAN (HKUST, Hong Kong)		
	16:15 IN - Revealing Solution Aggregate Structures of Polymers and Film Formation Kinetics on Film Morphology in Organic Solar Cells Yanchun HAN (University of Chinese Academy of Sciences, China)		
	16:30 IN - Monolithic Perovskite/Organic Tandem Solar Cells Angus Hin Lap YIP (CityU, Hong Kong)		
	16:45 IN - Nanomaterials and Perovskites: A Joint Effort to Generate Sustainable Power Tom MACDONALD (Imerial College London, UK)		
	17:00 IN - Strategies Toward High-Performance Polymer-Based Solar Cells Philip Chi Yung CHOW (HKU, Hong Kong)		
	17:15 - 18:00 Poster Session [CYT 203 (2/F)]		

Conference Programme (4 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	CYT LT1 (1/F)		
09:00 - 09:30	**PL-7: Energy Conversion and Storage: Novel Materials and Operando Methods** **Héctor ABRUÑA** (Cornell University, USA)		
09:30 - 10:00	**PL-8: Wildfire Impacts on Soil Carbon Cycling** **Thomas BORCH** (Colorado State University, USA)		
10:00 - 10:30	Coffee Break		
	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
10:30 - 12:30	Session 1: Energy Session Chairs: Ziyun WANG & Deli WANG	Session: Energy Transition Science Session Chair: Lin LIU	Session: Environment Session Chairs: Alex CHOW & Martin TSUI
	10:30 KN - Working Towards a Comprehensive Analysis of CO_2 and CO Electrolysis Devices Brian SEGER (Technical University of Denmark, Denmark)	10:30 IN - Ten-Year Air Quality in China Shixian ZHAI (CUHK, Hong Kong)	10:30 IN - The Evolving Concept of Blue Ecosystems and Their Role in Carbon Neutrality and Nitrogen Pollution Remediation Benoit THIBODEAU (CUHK, Hong Kong)
	10:50 IN - Electrocatalysis on Structure Ordered Intermetallics Deli WANG (Huazhong University of Science and Technology, China)	10:45 Oral - Aggravated Ozone Pollution Under the Waves of Industrialization and Urbanization Embodies Unrecognized Agricultural Economic Inequality in China Jia MAO (CUHK, Hong Kong)	10:45 IN - Temperature Thresholds of Pyrogenic Dissolved Organic Matter Junjian WANG (South China University of Technology, China)
	11:05 IN - Rational Catalyst Design for CO_2 Electrochemical Reduction Reaction Ziyun WANG (University of Auckland, New Zealand)	10:55 Oral - Impacts of Agricultural Irrigation on Regional Air Quality in China: A Modeling Study Using Wrf-Gc Tiangang YUAN (CUHK, Hong Kong)	11:00 Oral - Marine Heatwaves and Light Limitation Independently Alter the Growth and Productivity of the Tropical Seagrass *Halophila ovalis* Alissa Victoria BASS (CUHK, Hong Kong)
	11:20 IN - Cu-Co Dual-Atom Catalysts Supported on Hierarchical Usy Zeolites for Efficient Cross-Coupling Reactions Benedict Tsz Woon LO (PolyU, Hong Kong)	11:05 Oral - Improving Agricultural Nitrogen Use Efficiency to Reduce Air Pollution in China Biao LUO (CUHK, Hong Kong)	11:10 Oral - Characterization of Atmospheric Peroxyacetyl Nitrate (PAN) in the Coastal Region of South-East China and Its Effects on Ozone Transport Chenyu LUO (CUHK, Hong Kong)
	11:35 - Oral - Comprehensive Evaluation of the Urea Quantification Methods in Electrocatalytic Experiments Yan ZHANG (HKUST, Hong Kong)	11:15 Q&A Session	11:20 Oral - The Sources and Behaviour of Nitrogen Species in Hypoxia Areas of Hong Kong Henry C.J. THOMAS (CUHK, Hong Kong)
	11:45 Oral - Catalysts Design for Electrochemical CO_2 Reduction to Hydrocarbon Yi XIE (CUHK, Hong Kong)	11:25 Poster Session [CYT 214 (2/F)]	11:30 Oral - Tidal Pumping and Atmospheric Deposition of Inorganic Nitrogen Drive Diurnal Variation in Primary Productivity in Mirs Bay, Hong Kong Ho Wen LO (CUHK, Hong Kong)
	11:55 Poster Session [CYT 203 (2/F)]		11:40 Oral - Elevational Trends in Mercury Speciation and Microbial Controls on Methylmercury Cycling in Tropical Forest Soils Xizi YANG (CUHK, Hong Kong)
			11:50 Q&A Session
12:30 - 14:00	Lunch		
14:00 - 18:00	Excursion		

International Conference on
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Conference Programme (5 Dec)

Plenary Lecture (30 min) | Keynote Lecture (20 min) | Invited Talk (15 min) | Oral Presentation (10 min) | Poster Session

Time	Energy Conversion CYT LT1 (1/F)	Earth & Energy Transition CYT 209A (2/F)	Environment CYT 209B (2/F)
09:00 - 11:00	Session 1: PV and Energy Session Chairs: Haipeng LU & Zonglong ZHU	Technical Discussion / Lab visit (By Invitation Only)	Technical Discussion / Lab visit (By Invitation Only)
	09:00 KN - The Promotion of Emerging Energy Materials for Carbon Neutrality through Lithium Bond Chemistry Qiang ZHANG (Tsinghua University, China)		
	09:20 IN - Material Design and Device Engineering for Efficient Organic Photovoltaic Cells Jianhui HOU (Institute of Chemistry, CAS, China)		
	09:35 IN - Interface-Driven Stability for Halide Perovskite Photovoltaics: A Fundamental Understanding Zonglong ZHU (CityU, Hong Kong)		
	09:50 IN - Twisting Photons with Chiral Metal-Halide Semiconductors Haipeng LU (HKUST, Hong Kong)		
	10:05 IN - Efficient e-Fuel Electrosynthesis from CO_2 Xue WANG (CityU, Hong Kong)		
	10:20 ORAL - Interface Engineering for Efficient, Stable and Environmentally Benign Perovskite Solar Cells Shengfan WU (CityU, Hong Kong)		
	10:30 ORAL - Carbon-Based Photocatalysts for Efficient Non-sacrificial Synthesis of Hydrogen Peroxide Liangpang XU (CUHK, Hong Kong)		
	10:40 Q&A Session		
	10:45 Closing Remarks		

Poster Presentation

Earth and Energy Transition - CYT 214 (2/F)

Poster No.	Title	Author
ET-01	Dynamic simulations on September 5, 2022 Luding MS 6.8 earthquake at the Moxi fault zone in southwest China	DENG Di
ET-02	A high-resolution earthquake catalog built by machine learning-based phase pickers in Weiyuan Shale Gas Field	HU Yukai
ET-03	Evaluating the Utility of b-Value for Discriminating Foreshocks and Mainshocks in the Yunnan Region	LAU Tsz Lam
ET-04	Mapping and Inventorying rock glaciers on the Tibetan Plateau using Planet Basemaps and deep learning	SUN Zhangyu
ET-05	Physics-Based Ground Motion Modeling Using Heterogeneous Parallel Technique: Design, Implementation and Optimization of Algorithms	WANG Wenqiang
ET-06	Investigating global warming controls on tropical cyclone rainfall using convection-resolving model experiments	XIAO Maiqian
ET-07	Unzip rupture propagation from near-fault rupture phases of the 2023 Kahramanmaras, Turkey Mw 7.8 earthquake	YAO Suli
ET-08	Application of local scattered-wave gradiometry for subsurface structure delineation beneath the Chenghai fault zone	ZHANG Jia
ET-09	Using S/P amplitude ratio and stress drop to differentiate mechanisms of induced earthquakes from injection activities in Weiyuan Shale Gas Field	ZHANG Jiewen
ET-10	Data-Driven Immediate Foreshock Detection: Using Dense Seismic Array to Uncover Hidden Precursors	JU Fengjiang

Energy Conversion - CYT 203 (2/F)

Poster No.	Title	Author
EC-01	The Role of Anode Porous Transport Layer in Efficient and Durable CO_2 Electrolysis	CHAI Xinyuan
EC-02	Surface Recrystallization via careful solvent design for efficient Tin Halide Perovskite Films	CHAN Pok Fung
EC-03	Passivating deep traps in high-performance organic photovoltaics by improving connectivity of non-fullerene acceptor domains	FU Yuang
EC-04	Understanding ultrafast excited state dynamics in Y6-type acceptors in organic solar cells	GUO Yu
EC-05	Self-adaptive and switchable solar heating and radiative cooling system	LI Senji
EC-06	Fostering the Dense Packing of Halide Perovskite Quantum Dots through Binary-Disperse Mixing	LI Shiang

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Poster Presentation

Energy Conversion - CYT 203 (2/F)

Poster No.	Title	Author
EC-07	Stabilized Heterointerface for High-efficiency and Stable Inverted Perovskite Solar Cells	LI Zhen
EC-08	Dual-additive-driven morphology optimization for solvent-annealing-free all-small-molecule organic solar cells	LIU Heng
EC-09	Dual-atoms induced bifunctional catalytic centers enables highly efficient rechargeable Zn-air batteries	LU Qian
EC-10	Efficient Electromethanation from CO_2 on Monodisperse Cu-based Catalysts	SUN Jiping
EC-11	Mechanical stability enhancement in lead-halide perovskite solar cells through quasi-2d perovskite buffer layer	TAO YIRAN
EC-12	Porous carbon nanofibers decorated with single Ni atoms for efficient CO_2 electroreduction	WANG Hui
EC-13	$CsPbI_3$ perovskite quantum dot-based write-once-read-many-times memory with intrinsic ternary states	XU Luhang
EC-14	Post-deposition halide exchange for achieving deep-blue perovskite light-emitting diodes: the role of the organic cations in the chloride source	YU Hui
EC-15	Unraveling how local environments impact multicarbon product electrosynthesis in active carbon solutions	ZHANG Zhongshuo
EC-16	Bromide-based nonflammable electrolyte for safe and long-life sodium metal batteries	ZUO Changjian
EC-17	Catalytic Graphitization Promotes High-performance Full-carbon Lithium-ion Capacitors	LI Guangchao
EC-18	Interface engineering of polymeric molecular catalysts for acidic CO_2 reduction	LI Geng
EC-19	The role of proton donor in electrochemical CO_2 reduction reaction in acid	WU Weixing

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Poster Presentation

Environment - CYT 215 (2/F)

Poster No.	Title	Author
EN-01	Marine heatwaves and light limitation independently alter the growth and productivity of the tropical seagrass *Halophila ovalis*	Alissa Victoria BASS
EN-02	Methylmercury biomagnification in subtropical forest food webs	CHENG Long Hei
EN-03	Mercury Biomagnification in Temperate Grassland Food Web (Kansas, USA)	CHEUNG Tsun Hung Jack
EN-04	Tracking circulation change in the western North Atlantic during the Little Ice Age using a multi-proxy approach	CHU Wai Ching
EN-05	The sources and behaviour of nitrogen species in hypoxia areas of Hong Kong	Henry C.J. THOMAS
EN-06	Tidal pumping and atmospheric deposition of inorganic nitrogen drive diurnal variation in primary productivity in Mirs Bay, Hong Kong	LO Ho Wen
EN-07	Characterization of atmospheric peroxyacetyl nitrate (PAN) in the coastal region of south-east China and its effects on ozone transport	LUO Chenyu
EN-08	Agroecosystem Modeling of Reactive Nitrogen Emissions from U.S. Agricultural Soils with Biochar Amendments	LUO Lina
EN-09	Impacts of interannual climate variability on fire activities, biomass burning emissions and air quality in Amazon	NG Tsin Hung Leo
EN-10	Baseline lithium-ion concentrations in sediments and soils in a rural area of Hong Kong	Norah MUISA
EN-11	Candidatus Accumulibacter use fermentation products for enhanced biological phosphorus removal	QIU Guanglei
EN-12	Study on photocatalytic degradation to eliminate microplastic pollution in water environment under carbon neutral background	REN Huixue
EN-13	Variations of Methylmercury in a Mangrove Wetland Sediments: Insights from Subtropical Ecosystems in Hong Kong	WANG Shaoyi
EN-14	A microcosm of nitrogen removal and carbon mineralization under salinity gradients: an insight into coastal salinity intrusion	WANG Ziyan
EN-15	Domestication of Microalgae for Livestock Wastewater Treatment: Carbon Neutralization, Nutrients Recovery and Valuable Bioproducts Formation	XIAO Rui
EN-16	Two new clades recovered at high temperatures provide new phylogenetic and genomic insights into Ca. Accumulibacter	XIE Xiaojing
EN-17	Elevational trends in mercury speciation and microbial controls on methylmercury cycling in tropical forest soils	YANG Xizi
EN-18	Influences of microplastics on mercury cycling in forested ecosystems	YAU Ming Yin
EN-19	Mercury in human health: effects on sperm dysfunction and maternal-fetal blood systems	YUAN Mengwei
EN-20	Changes of dissolved organic matter from roots to soils and their relationships with microbial community in a grassland	MO Xiaohan

Banquet cum Poster Presentation Award Ceremony

ClubONE Riviera

Date: Dec 4, 2023 (Monday)
Time: 18:00 - 21:30
Address: G/F, 55-57 Tai Chung Kiu Road, Sha Tin
Note: Shuttle bus service will be arranged between the Conference venue & excursion assembly point to the banquet venue

Empowers Your Dreams

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