



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# CUHK-CUHKSZ Academic Forum in Science and Engineering

February 19, 2022

# Opening Ceremony



**09:00-09:05**

Prof. HUANG Jianwei

Opening

**09:05-09:10**

Prof.TANG Benzong

Welcoming Addresses

**09:10-09:15**

Prof. Martin D.F. WONG

Welcoming Addresses

**09:15-09:20**

Prof. SONG Chunshan

Welcoming Addresses



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 1 - Mathematics

Host : Prof. FENG Dejun

**09:30-10:15**

Prof. HE Xuhua

Introduction to Total Positivity

**10:15-11:00**

Prof. PAN Xingbin

Nonlinear Curl Equations

**11:00-11:15**

**Break**

**11:15-12:00**

Prof. LUI Lok Ming Ronald

From Computational Quasiconformal Geometry (CQC) to Deep Learning for Imaging

**12:00-12:45**

Prof. WANG Dong

An Efficient Unconditionally Stable Method for Computing Dirichlet Partitions in Arbitrary Domains



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 2 - Chemistry, Material, Energy and Physics

Host : Prof. NGAI To

**13:10-13:30**

Prof. TANG Ben Zhong

Aggregation-induced Emission: a Conceptually  
New Luminescence Process

**13:30-13:50**

Prof. KWONG Fuk Yee

Palladium-Catalyzed Highly Steric Hindered Cross-  
Coupling Processes

**13:50-14:10**

Prof. ZHANG Qi

Smart Polymer Materials

**14:10-14:30**

Prof. YEUNG Ying Yeung

Organocatalytic Asymmetric Halogenation  
Reactions

**14:30-14:45**

**Break**



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 2 - Chemistry, Material, Energy and Physics

Host : Prof. NGAI To

**14:30-14:45**



**14:45-15:05**

Prof. WANG Jianfang

**Break**

Plasmon-Driven Nitrogen Photofixation



**15:05-15:25**

Prof. ZHOU Yan

Topological Spintronics



**15:25-15:45**

Prof. LU Xinhui

Microstructure Studies of Organic and Perovskite Solar Cells via Grazing Incidence Scattering



**15:45-16:05**

Prof. ZHAO Junhua

AI for Supporting Low Carbon Energy Transition



**16:05-16:25**

Prof. ZHU Xi

AI & Robotics-Driven Materials Science Research



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 3 – Computer and Information Engineering and Electronic Engineering

Host : Prof. HO Megan

**09:30-09:50**

Prof. Helen MENG

Advancing Technological Equity in Speech and Language Processing

**09:50-10:10**

Prof. Anthony SO

Non-Convex Optimization for Machine Learning, Signal Processing, and Statistics

**10:10-10:30**

Prof. HUANG Jianwei

Incentive Mechanism Design of Federated Learning

**10:30-10:45**

**Break**

**10:45-11:05**

Prof. YANG Shenghao

Wireless Network Scheduling with Propagation Delay

**11:05-11:25**

Prof. SHUM Wing Ki

Some Combinatorial Problems in Wireless Communications

**11:25-11:45**

Prof. CAI Wei

Metaverse: Research Opportunities and Challenges



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 4 – Computer and Information Engineering and Electronic Engineering

Host : Prof. SUN Zhenglong

**13:10-13:30**

Prof. YU Bei

Machine Learning in EDA

**13:30-13:50**

Prof. ZHANG Li

Micro-/nanorobotics: the Fundamental Challenges and the Biomedical Applications

**13:50-14:10**

Prof. LI Yu

Artificial Intelligence in Health: from Methodology Development to Biomedical Applications

**14:10-14:30**

Prof. REN Hongliang

Surgical Robotics and Perception

**14:30-14:45**

**Break**



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen

# Sub Forum 4 – Computer and Information Engineering and Electronic Engineering

Host : Prof. SUN Zhenglong

**14:30-14:45**

**Break**

**14:45-15:05**

Prof. Scott YUAN + Prof. Martin MAK

Translating Optical Coherence Tomography and Wearable Biosensor to the Clinic

**15:05-15:25**

Prof. HUANG Chaoran

Photonic Neuromorphic Computing and Applications

**15:25-15:45**

Prof. GAO Zhaoli

Nano-biosensors Based on Graphene Transistors

**15:45-16:05**

Prof. REN Wei

Laser Absorption Spectroscopy and Its Application



香港中文大學  
The Chinese University of Hong Kong



香港中文大學(深圳)  
The Chinese University of Hong Kong, Shenzhen