

2018 Frontier Forum on Quantum, Energy, and Materials		
Thursday October 11th		
14:00-18:00	Onsite registration & Sign up	
Friday October 12th		
Room 818		
08:20-08:30	Opening Ceremony	
Session: Nanophotonics Chair: Jiang Wu		
08:30-08:55	A01: Plasmonic Bio-Assemblies and Nanostructures: Long-range energy transfer, hot electrons and chirality	Alexander O. Govorov University of Electronic Science and Technology of China, China
08:55-09:20	A02: Moiré superlattices and minibands for Dirac electrons in graphene heterostructures	Vladimir Falko University of Manchester, UK
09:20-09:45	A03: Resonant Raman scattering at the nanoscale	Andres Cantarero University of Valencia, Spain
09:45-10:10	A04: Infrared and THz optics of atomically thin films of transition-metal dichalcogenides and post-transition metal chalcogenides	Vladimir Falko University of Manchester, UK
10:10-10:35	A05: Manipulation of light coupling by nanophotonic structures	Jing Zhou Shanghai Institute of Technical Physics, CAS, China
10:35-10:45	Session Break	
Session: 能源存储材料与器件 Chair: Liping Wang		
10:45-11:10	A06: 原子尺度下锂离子电池电极材料的表征	Lin Gu Institute of Physics, CAS, China
11:10-11:35	A07: 纳米线储能材料与器件新进展	Liqiang Mai (Wen Luo) Wuhan University of Technology, China

11:35-12:00	A08: 新型有机多硫化物正极材料	Yongzhu Fu Zhengzhou University, China
12:00-12:25	A09: 超级电容器中超高表面积生物质碳基电极研究	Linhua Hu Hefei Institute of Physical Science, CAS,China
12:25-12:35	Group Photo	
12:35	Lunch Break	
Session: 材料催化 Chair: Yongpeng Lei		
14:00-14:25	A10: 面向 CO ₂ 还原的纳米电催化剂	Gengfeng Zheng Fudan University, China
14:25-14:50	A11: 面向燃料电池的金属纳米催化剂原子尺度精准调控	Yuen Wu University of Science and Technology of China, China
14:50-15:15	A12: 面向锌-空气电池的三维结构非贵金属催化剂	Yongpeng Lei Central South University, China
15:15-15:40	A13: 高性能电解水异质结构催化剂的构筑与优化	Haiqing Zhou Hunan Normal University,China
15:40-15:55	Session Break	
Session: 光电材料与器件 Chair: Yanbo Li		
15:55-16:20	A14: 基于 PEDOT: PSS 的功能性纳米薄膜的制备及其在新型太阳能电池中的应用研究	Wenfeng Zhang Southwest Petroleum University, China
16:20-16:45	A15: 应用于气体环境感知的量子点薄膜传感器	Huan Liu Huazhong University of Science and Technology, China
16:45-17:10	A16: 纳米薄膜材料的可控制备及其在光电器件中的应用	Hua Yu Southwest Petroleum University, China

17:10-17:35	A17:III-V 族半导体异质结构纳米线可控生长和表征	Tao Yang Institute of Semiconductors,CAS,China
17:50	Dinner Social	

Saturday October 13th Room 818		
Session: 量子科技 Chair: Qiang Zhou		
08:30-08:55	A18: 两比特通用光量子处理芯片	Xiaoqi Zhou Sun Yat-sen University, China
08:55-09:20	A19: 远程制备量子态的实验研究	Xu Wang Guizhou University, China
Session: Quantum Technology Chair: Abolfazl Bayat		
09:20-09:45	A20: The spectroscopy of the trapped and cold Ca ⁺ ion	Kelin Gao Wuhan Institute of Physics and Mathematics, CAS, China
09:45-10:10	A21: Quantum Behavior of Light Matter Interaction at Nanoscale	Euclides Marega Junior University of Sao Paulo, Brazil
10:10-10:35	A22: Prospects for Superconducting Qubits in Quantum Information and Sensing	Andrew N. Cleland University of Chicago, USA
10:35-10:45	Session Break	
Session: Nanophotonics Chair: Alexander O. Govorov		
10:45-11:10	A23: Chiral spin condensation with optical lattices	Xiaopeng Li Fudan University, China
11:10-11:35	A24: Ultrafast and Nonlinear Nanoscopy: Watching Quantum Dynamics in Time and Space	Markus B. Raschke University of Colorado, Boulder, USA
11:35-12:00	A25: Optics of Dirac and Weyl fermions in topological materials	Alexey Belyanin Texas A&M University, USA
12:00-12:25	A26: III-V Semiconductors for Efficient Water Splitting	Jiang Wu University of Electronic Science and Technology of China, China

12:30	Lunch Break	
Session: Quantum Technology Chair: Markus B. Raschke		
14:00-14:40	A27: Quantum Computers and Schrödinger's Cat	David J. Wineland The 2012 Nobel Prize Winner in Physics, USA
14:40-15:10	A28: Solid State Quantum Simulators	Abolfazl Bayat University of Electronic Science and Technology of China, China
15:10-15:40	A29: Strange Stories of Spin Squeezed States	Zizhu Wang University of Electronic Science and Technology of China, China
15:40-16:10	A30: Quantum dots made from semiconductor nanostructures for quantum information processing	Hongqi Xu Peking University, China
16:10-18:00	Poster Session (Session Break)	
16:40-16:50	Group Photo	
18:30	Dinner Social	

**Saturday October 13th
Room 816**

Session: 材料物理 Chair: Yanning Zhang

08:30-08:55	B01: 纳米界面光激发态动力学	Run Long Beijing Normal University, China
08:55-09:20	B02: 电子显微学方法研究固态离子迁移	Peng Gao Peking University, China
09:20-09:45	B03: 离子液体诱导制备形貌可调氮掺杂碳材料	Aibing Chen Hebei University of Science & Technology, China

Session: Functional Materials Chair: Haiqing Zhou

09:45-10:10	B04: Triboelectric Nanogenerators for Powering Portable, Wearable and Body-Implantable Devices	Sang Woo Kim Sungkyunkwan University, South Korea
10:10-10:35	B05: High-throughput search for novel topological materials	Yazyev Oleg V. Swiss Fed Inst Technol Lausanne, Switzerland

10:35-10:45

Session Break

Session: General Chair: Zizhu Wang

10:45-11:10	B06: Fishing trip or hypothesis driven science? Few examples from chemistry, material science and civil engineering	Pawel K. Zarzycki Koszalin University of Technology, Poland
11:10-11:35	B07: Carbon compounds from biomass for electronic and magnetic applications	Darminto Institut Teknologi Sepuluh Nopember, Indonesia
11:35-12:00	B08: Distinct phase evolution in fluoropolymer based composite films for energy storage and sensing application	Dong Guo Beihang University, China

12:00-12:25	B09: Enhanced electrochemical and thermal transport properties of carbon nanocomposites for energy-related applications: a multi-scale modeling insight	Feng Gong University of Electronic Science and Technology of China, China
12:30	Lunch Break	

Sunday October 14th
Room 818

Session: 光电材料与器件 Chair: Wenhua Zhang

08:30-08:55	A31: 高性能纤维光伏器件	Dechun Zou Peking University, China
08:55-09:20	A32: 纳米功能材料在太阳能中的应用	Wenhua Zhang Sichuan Research Center of New Materials, Institute of Chemical Materials, CAEP, China
09:20-09:45	A33: 钙钛矿结晶动力学研究	Kui Zhao Shaanxi Normal University, China
09:45-10:10	A34: 面向太阳能转换的有机功能分子设计	Yongzhen Wu East China University of Science and Technology, China
10:10-10:35	A35: 电荷转移态的非辐射复合损失及能量无序度对非富勒烯有机太阳能电池开路电压影响的机制研究	Yuan Zhang Beihang University, China
10:35-10:45	Session Break	

Session: Nanomaterials Chair: Alexey Belyanin

10:45-11:10	A36: Growth of Nanostructures, Characterizations and Their Applications	Chang Fu Dee Institute of Microengineering and Nanoelectronics(IEMN), Malaysia
11:10-11:35	A37: Properties of the geometric phase in the electromechanical oscillations of carbon-nanotube-based nanowire resonators	Jeong Ryeol Choi Kyonggi University, Republic of Korea
11:35-12:00	A38: Electronic Properties of Graphene Superlattices	Ponomarenko L. A. Lancaster University, UK

12:00-12:25	A39: Analysis of the geometric phase for a nanowire-bridged superconducting Fabry-Perot resonator	Jeong Ryeol Choi Kyonggi University, Republic of Korea
12:30	Lunch Break	
Session: Perovskite Solar Cells Chair: Pawel K. Zarzycki		
14:00-14:25	A40: Single crystal perovskite solar cells	Qingfeng Dong Jilin University, China
14:25-14:50	A41: Stable Perovskite Solar Cells by Compositional and Interface Engineering	Mohammad Khaja Nazeeruddin Swiss Fed Inst Technol Lausanne, Switzerland
Session: 钙钛矿太阳能电池 Chair: Shibin Li		
14:50-15:15	A42: 高效率高稳定钙钛矿太阳能电池的研究	Baomin Xu Southern University of Science and Technology, China
15:15-15:40	A43: 钙钛矿薄膜形貌控制与太阳能电池性能研究	Songwang Yang Shanghai Institute of Ceramics, CAS, China
15:40-15:55	Session Break	
Session: 钙钛矿太阳能电池 Chair: Xiaobin Niu		
15:55-16:20	A44: 杂化钙钛矿电池中的离子迁移及其影响	Yongbo Yuan Central South University, China
16:20-16:45	A45: 碳膜电极在钙钛矿电池中的应用	Junyan Xiao Wuhan University of Technology, China
16:45-17:10	A46: 铅卤钙钛矿晶体生长及调控	Zhou Yang Shaanxi Normal University, China
17:10-17:35	A47: 任意湿度空气环境中制备高效率钙钛矿太阳能电池	Shibin Li University of Electronic Science and Technology of China, China
18:30	Dinner Social	

Saturday October 13th
Rooftop of Floor 9 16:10-18:00

Poster Session Chair: Zhiming Wang

P1: Precursor Engineering for All-Inorganic CsPbI ₂ Br Perovskite Solar Cells with 14.78% Efficiency	Zhike Liu Shaanxi Normal University, China
P2: Study of Hierarchical PVDF/ZnO Nanowires Fibrous Membrane for Degradation of Rhodamine B Dye Wastewater	Dongliang Ruan Dongguan University of Technology, China
P3: Synchrotron X-ray absorption study of local electronic structure in Al doped BiFeO ₃ powders	Turghunjan Gholam Xiamen University, China
P4: Theoretical Study on the Electronic Structure of 5fValence Shell orbitals in 18 ElectronicSystems	Yang Gao University of Electronic Science and Technology of China, China
P5: Hydrogen evolution reaction (HER) on Au@Ag ultrananoclusters as electro-catalysts	Le Chang University of Electronic Science and Technology of China, China
P6: Multimodal tip-enhanced spectroscopy	Markus B. Raschke University of Colorado, Boulder, USA
P7: Sensitivity of mixing-current technique to detect nanomechanical motion	Yue Wang University of Electronic Science and Technology of China, China
P8: Tunable Optoelectronic Properties in Near-infrared “Giant” Core/Shell Quantum Dots	Jingyin Xu University of Electronic Science and Technology of China, China
P9: Optoelectronic Properties in Hexagonal-shaped Colloidal Core/Shell Quantum Dots	Ali Imran University of Electronic Science and Technology of China, China
P10: InGaAs and GaAs quantum dot solar cells grown by droplet epitaxy	Peng Yu University of Electronic Science and

	Technology of China, China
P11: Ultra Broadband Near-Infrared Metamaterial Perfect Absorber Using Refractory Vanadium Nitride	Wenhao Wang University of Electronic Science and Technology of China, China
October 15	
One-Day Academic Exchange & Excursion	