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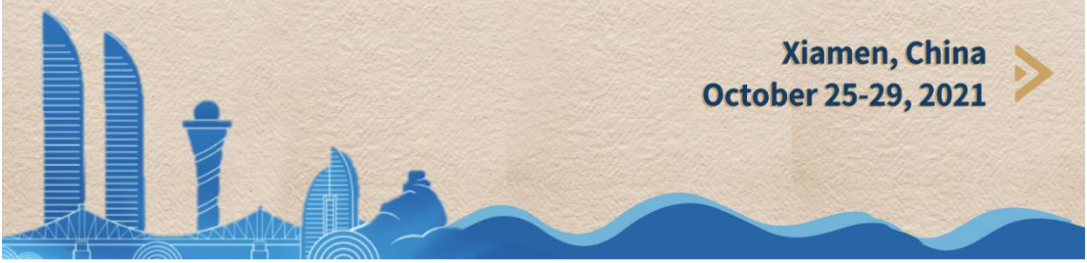
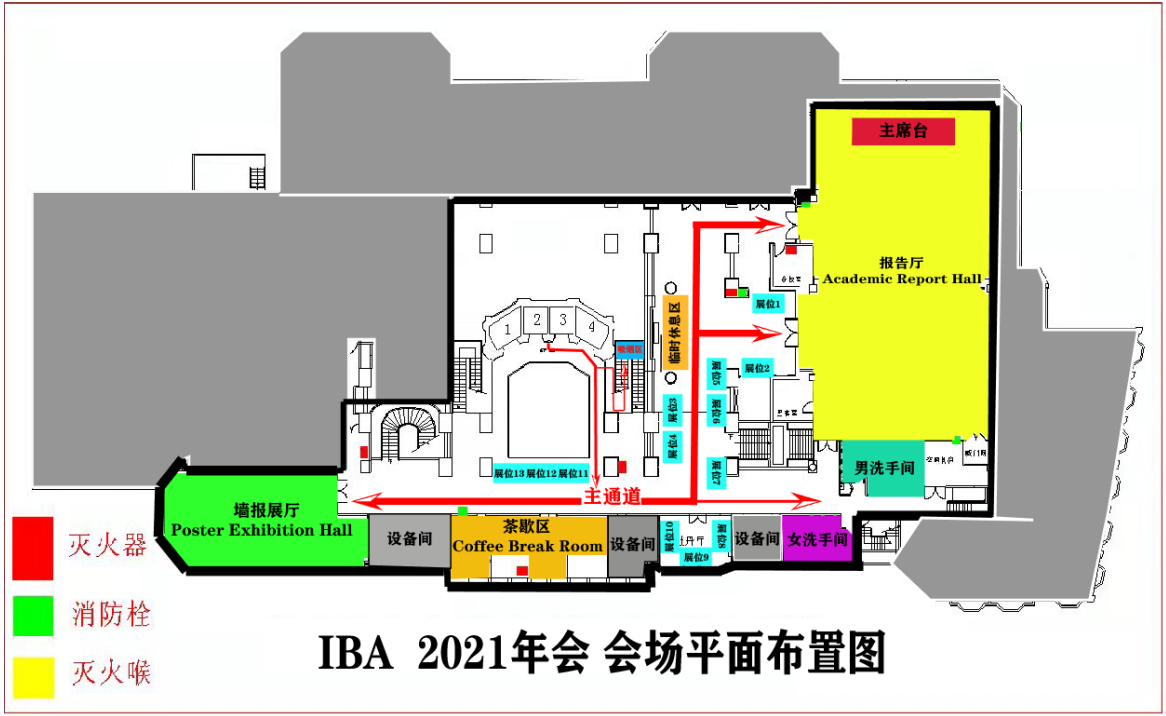
IBA 2021

International Battery Association 2021

Xiamen, China
October 25-29, 2021





IBA 2021年会 会场平面布置图

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Welcome to IBA 2021!

On behalf of the organizing committee and the IBA, we are very pleased to welcome you to the Annual meeting of the International Battery Materials Association(IBA)-2021 in Xiamen.

Battery technology has become one of the most influential energy storage and conversion technologies. It not only provides unprecedented light and small electric energy devices for portable electronics, bikes, vehicles and other traction applications, but is also an excellent candidate for energy storage in smart grids which transport renewable energy. The main theme of IBA-2021: New Horizon and Large-Scale Application of Batteries, reflects the newest advances in R&D activity and the wide utilization spectrum of rechargeable batteries and their materials.

Followed by the big success of the previous IBA meetings, IBA 2021 is held in Xiamen city, which is also the second IBA meeting in China followed the first meeting in Shenzhen in 2007. In this meeting, we have totally 84 oral presentations (includes 8 plenary, 26 keynote and 50 invited talks), plus 81 posters. The contributors come from 16 countries in 4 continents. These presentations provide great opportunities to share the most up-to-date scientific discoveries, innovative ideas and technological achievements. Although recently COVID-19 affects our travelling seriously and most of our foreign participants only join the 2021 meeting on-line, we do anticipate that we will have a free scientific/technological exchange facilitating further collaboration in this exiting field.

On the occasion of the IBA-2021 meeting, we will have the honor to listen to the talks of this year's IBA awardees, Prof. Yichun Lu receiving the IBA Early Career Award, Prof. Andy Xueliang Sun for the IBA Technology Award, Dr. Rosa

Palacin for the IBA Research Award, and Dr. Dominique Guyomard, the recipient of the IBA Yeager Award.

We gratefully thank all institutional and industrial partners and sponsors of IBA-2021; your support makes IBA-2021 feasible and even more successful.

Finally, we sincerely thank you for attending IBA-2021, either on-site or on-line. We wish you to enjoy the event and get fruitful exchanges of ideas/insights and find opportunities to continue and start collaborations in the future. In addition, we hope that you can also enjoy the beautiful landscape of Xiamen Island, the “Garden City” in China, during your free time.

Yong Yang
Chairman of IBA 2021

Chris Johnson
President of IBA

Martin Winter
Chairman of IBA

Committee of IBA 2021

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Qiang Zhang, Tsinghua University, China
Jinbao Zhao, Xiamen University, China
Haoshen Zhou, Nanjing University, China

IBA 2021 Award Winners

The IBA congratulates the following award winners for their outstanding contributions to battery research and technology development that have impacted the advancement of energy storage systems, and for lifelong service to the IBA.

IBA Yeager Award

Dominique Guyomard, University of Nantes, France

IBA Research Award

Rosa Palacin, Institute of Materials Science of Barcelona, Spain

IBA Technology Award

Andy Xueliang Sun, University of Western Ontario, Canada

IBA Early Career Award

Yi-Chun Lu, The Chinese University of Hong Kong, Hongkong China

The award ceremony will be held at the Banquet on Wednesday evening, and their award will be given during the week at IBA 2021.

IBA2021 Program

Plenary 30min, Keynote 25min, Invited 20min including 5 min discussion

Monday, October 25

Opening ceremony	
08:30 On-site	Welcome Speech **Prof. Yong Yang** **Group photo**

SESSION 1	Nickel rich materials	Chairperson: Prof. Feng Pan

Plenary Lecture

09:05 PLE1 **On-line**	Microstructure Engineered Ni-Rich Layered Cathode for Electric Vehicle Batteries **Yang-Kook Sun**, Hanyang University, South Korea

Invited Lecture

09:35 INV1 **On-line**	Developing Sustainable Energy Storage: Paths Towards Nickel/Cobalt-free Intercalation Battery Chemistries **Feng Lin**, Virgina Tech, USA
9:55 INV2 **On-line**	High Nickel Positive Electrode Materials Modified by Dry Particle Fusion **Chongyin Yang**, Dalhousie University, Canada

10:15 TEA BREAK

SESSION 2	General 1	Chairperson: Dr. Yuhao Lu

Keynote Lecture

10:30 KEY1 **On-line**	Electrochemical Energy Storage: From Materials Science to Prototype Batteries and Manufacturing **Jie Xiao**, PNNL,USA
11:55 KEY2 **On-site**	Sacrificial lithium Rich Compounds for Li Supplement at Cathode Side **Xuejie Huang**, Songshan Lake Laboratory for Materials & Chinese Academy of Sciences, China

Invited Lecture

11:20 INV3 High Electrochemical Activity Enabled by a Cation Distribution in Co-free Li-rich Materials

On-line

Byoungwoo Kang, Pohang University of Science and Technology, Korea

Keynote Lecture

11:40 KEY3 Exploring Material Genes and Structure Chemistry in Li-ion Batteries

On-site **Feng Pan**, Peking University, China

12:05 LUNCH

SESSION 3	General 2	Chairperson: Prof. Xuejie Huang

Invited Lecture

14:00 INV4 Development of High Energy Density Rechargeable Lithium Battery

On-site **Yuhao Lu**, Amperex Technology Limited, China

14:20 INV5 Material design of Li-excess rocksalt oxides for Li storage applications

On-line **Naoaki Yabuuchi**, Yokohama National University, Japan

14:40 INV6 Bulk and Interface Adjustment for High-Energy Lithium-Rich Layered Oxides

On-site **Haijun Yu**, Beijing University of Technology, China

15:00 INV7 Powering Battery Future： Battery Research in CATL

On-site **Shaofei Wang**, Contemporary Amperex Technology Co., Limited, China

15:20 Tea Break

SESSION 4	Safety	Chairperson: Prof. Haoshen Zhou

Keynote Lecture

15:40 KEY4 Magnetic Resonance, Diffraction and Optical Measurements of Function and Failure in Layered Cathode Materials

On-line

Clare Grey, University of Cambridge, UK

16:05 KEY5 The Streamlined Structure for the Reversible Anionic redox Reaction in Layered Transition Metal Oxide

On-line

	Kisuk Kang, Seoul National University, Korea
16:30 KEY6	The Approach of the Angstrom Advanced Battery Center to Improve Sustainability
On-site	for the Batteries of the Future
	Kristina Edstrom, Uppsalla University, Sweden

Invited Lecture

16:55 INV8	Safety Issue of Solid-state Batteries: From Perspective of Electrode and Electrolyte
On-site	Materials
	Xiqian Yu, Institute of Physics, China
17:15 INV9	Stabilizing the structural/interfacial stability of $LiCoO_2$ for high voltage operation
On-site	**Jianming Zheng**, Xiamen University

18:30 DINNER & DISCUSSION

Tuesday, October 26

SESSION 5	Lithium metal	Chairperson: Prof. Hong Li

Plenary Lecture

08:30 PLE2	Li Metal Anode - Fast Charging, Low T Operation and Corrosion Study
On-line	**Shirley Meng**, University of California, USA

Keynote Lecture

09:00 KEY7	Development of Lithium Rechargeable Batteries with High Energy Density
On-site	**Haoshen Zhou**, Nanjing university, China

Invited Lecture

09:25 INV10	Quantity Irreversible Phenomena in Lithium Metal Batteries via Anode-free Protocols
On-line	**Bingjoe Huang**, National Taipei University of Technology, Taiwan, China
09:45 INV11	The Lithium Bond Chemistry in Lithium Batteries
On-site	**Qiang Zhang**, Tsinghua University, China

10:05 TEA BREAK

SESSION 6	Anode 1	Chairperson: Dr. Chaoluan Gan

Invited Lecture

10:20 INV12	Polymeric Single-Ion Conductors based on Controlled Anion Exchange for Practical Li-Metal Batteries
On-line	**Sang-Young Lee**, Underwood Distinguished Professor Department of Chemical and Biomolecular, Korea
10:40 INV13	Lithium Metal Batteries for Real-World Application
On-site	**Yuegang Zhang**, Tsinghua University, China
11:00 INV14	Reversible Cycling of Graphite Electrode in Propylene Carbonate Electrolyte Enabled by Ethyl Isothiocyanate
On-site	**Zhangquan Peng**, Dalian Institute of Chemical Physics, China
11:20 INV15	Solid–solution-based Metal Alloy Phase for Highly Reversible Lithium Metal Anode

On-site	**Hengxing Ji**, University of science and technology of China, China
11:40 INV16	Interfacial Design and Engineering for High Performance Aqueous Zinc Ion Batteries
On-line	**Zaiping Guo**, University of Aldelaide, Australia

12:00 LUNCH

SESSION 7	Anode 2	Chairperson: Prof. Yuegang Zhang

Keynote Lecture

14:00 KEY8	High capacity anode materials for Li ion batteries
On-site	**Hong Li**, Institute of Physics, CAS, China

Invited Lecture

14:25 INV17	1000 Wh/L Lithium ion Battery Enabled With Double Carbon Caged Microparticles
On-site	Silicon Anodes
	Quanhong Yang, Tianjin University, China

Keynote Lecture

14:45 KEY9	About the Renaissance of Li Metal Anodes for Rechargeable High Energy Density
On-line	Batteries, Through Selection and Manipulation of Suitable Electrolyte Solution
	Doron Aurbach, Bar-Ilan University, Isarel

Invited Lecture

15:10 INV18	Protection of Li Metal
On-line	**Robert Dominiko**, Institute of Chemistry, Slovenia

15:30 TEA BREAK

SESSION 8	Advanced characterization	Chairperson: Prof. Zhangquan Peng

Keynote Lecture

15:40 KEY10	Graphite Positive Electrode -halogen-containing Acceptor-type Graphite
On-line	Intercalation Compounds
	Takeshi Abe, Kyoto University, Japan

Invited Lecture

16:05 INV19	Advanced Electrolyte Compositions for Current and Future Saft's Cell Chemistries –
On-line	going Towards More Energy for Li-ion Cells
	Julien Demeaux, Saft Company, France
16:25 INV20	Low Temperature Battery
On-site	**Chenglin Yan**, Suzhou University, China
16:45 INV21	Cryo-TEM Study of Solid Electrolyte Interphase in Li-metal Batteries
On-site	**Meng Gu**, Southern University of Science and Technology, China
17:05 INV22	Multimodal imaging of solid-state lithium metal batteries
On-site	**Shou-Hang Bo**, Shanghai Jiaotong University

18:30 DINNER & DISCUSSION

Wednesday, October 27

SESSION 9	Solid state batteries 1	Chairperson: Prof. Hengxing Ji

Plenary Lecture

08:30 PLE3 **On-line**
Development of Solid Electrolytes Suitable for Interface Formation in All-solid-state Batteries
Akitoshi Hayashi, Osaka Prefecture University, Japan

Keynote Lecture

09:00 KEY11 **On-line**
Creep-Enabled 3D Solid-State Lithium-Metal Battery
Ju Li, MIT,USA

Invited Lecture

09:25 INV23 **On-line**
Interfacial Failure of Lithium Metal in Solid-State Batteries: Insight from Large-Scale Atomistic Modeling
Yifei Mo, University of Maryland, USA

09:45 INV24 **On-site**
Advanced characterization techniques for solid-state batteries and interfaces
Jiajun Wang, Harbin Institute of Technology, China

10:05 TEA BREAK

SESSION 10	Electrolyte design	Chairperson: Prof. Guanglei Cui

Keynote Lecture

10:20 KEY12 **On-line**
Electrolyte Design for High Capacity Electrodes
Chunsheng Wang, University of Maryland, USA

10:45 KEY13 **On-line**
Electrolyte Oxidation and the Role of Acidic Fluorophosphates in Capacity Loss for Lithium Ion Batteries
Brett Lucht, University of Rhode Island, USA

Invited Lecture

11:10 INV25 **On-line**
Liquid Phase Sintering Enabled High Energy Solid Battery
Jihui Yang, University of Washington, USA

Keynote Lecture

11:30 KEY14 Electrolyte Design Strategies to High-energy-density and Safe Batteries

On-line **Yuki Yamada**, Osaka University, Japan

Invited Lecture

11:55 INV26 Development of High Safety Electrolyte for Electric Vehicle Battery

On-site **Chaolun Gan**, Zhangjiagang Guotai Huarong Chemical New Material Co. LTD, China

12:15 LUNCH

SESSION 11	Solid state batteries 2	Chairperson: Prof. Qiang Zhang

Invited Lecture

14:00 INV27 Polymer/sulfide Composite Electrolyte Based All Solid State Batteries

On-site **Guanglei Cui**, Qingdao Energy Institute, China

Keynote Lecture

14:20 KEY15 Quantifying the Li-ion Diffusion over A LiI Coating on A Li_2S Cathode, Revealing the Impact on the Macroscopic Li-ion Transport in A Solid State Battery

On-line **Marnix Wagemaker**, University of Deflt,

14:45 KEY16 Chemo-mechanics of Cathode Composites in Solid-state Batteries

On-line **Juergen Janek**, Justus Liebig University Giessen, & BELLA, Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany

Invited Lecture

15:10 INV28 Creating and Understanding Stable Cathode-Electrolyte Interfaces for Solid State Batteries

On-line **Jie Li**, Polytechnic University of Milan, Italy

15:30 TEA BREAK

SESSION 12	Solid state batteries 3	Chairperson: Prof. Jiajun Wang

Plenary Lecture

15:45 PLE4 Solid State Batteries: A Challenge of Interfaces.

On-line **Peter Bruce**, University of Oxford, UK

Keynote Lecture

16:15 KEY17	Linking electrolyte degradation and ionic transport limitations to the
On-line	performance of Li-S solid state batteries
	Wolfgang Zeier, University of Muenster, Germany
16:40 KEY18	Seasonal/annual Energy Storage: Is There a Role for Batteries
On-line	**Stefano Passerini**, Helmholtz Institute Ulm&Karlsruhe Institute of Technology, Germany

Invited Lecture

17:05 INV29	Interface Stability in all-solid-state Batteries
On-line	**Corsin Battagllia**, EMPA,Swiss Federal Laboratories for Materials Science and Technology ,Switzerland
17:25 INV30	Design of Electrode-electrolyte Interphases for High Voltage Aqueous Lithium-
On-line	ion Batteries
	Linda Nazar, University of Waterloo, Canada
17:45 INV31	Deformation of the Interfaces in Solid-state Batteries with Sulfide-based
On-site	Electrolyte
	Lingyun Zhu, Guilin Electric Power Research Institute, China
18:05 INV32	Electrolyte and Electrode Interfacial Model
On-site	**Jun Ming**, Changchun Institute of Applied Chemistry

18:30 DINNER & DISCUSSION

Thursday, October 28

SESSION 13	Solid state batteries 4	Chairperson: Yongyao Xia

Keynote Lecture

08:30 KEY19 Development of Long Life Li-S Batteries Based on Polymeric Cathodes

On-line **Ping Liu**, University of California, San Diego, USA

Invited Lecture

08:55 INV33 Ion and Electron Transfer at Interfaces in Solid-state Batteries Via First-principles Calculations

On-line

Yoshitaka Tateyama, National Institute for Materials Science (NIMS),Japan

Keynote Lecture

09:15 KEY20 Rechargeable Zinc-Air Battery

On-line **Zhongwei Chen**, University of Waterloo, Canada

Invited Lecture

09:40 INV34 1 MWh Na-Ion Battery Energy Storage System

On-site **Yongsheng Hu**, Institute of Physics, Chinese Academy of Science, China

10:00 TEA BREAK

SESSION 14	General 3	Chairperson: Prof. Yongsheng Hu

Keynote Lecture

10:15 KEY21 All Climate Lithium Battery Materials and Technology

On-site **Yongyao Xia**, Fudan University, China

Invited Lecture

10:40 INV35 Electron Microscopy Studies of Batteries

On-site **Jianyu Huang**, Yanshan University, China

Keynote Lecture

11:00 KEY22 Solid State Batteries Based on Bulk Interface Superionic Conductors

On-site **Liwei Chen**, Shanghai Jiaotong University, China

Invited Lecture

11:25 INV36	Interface Engineering of LLZO for Solid Lithium Batteries
On-site	**Xiangxin Guo**, Qingdao University, China

11:45 LUNCH

SESSION 15	Beyond lithium batteries	Chairperson: Prof. Liwei Chen

Invited Lecture

14:00 INV37	Advanced Binder Designs for Sulfide-based All Solid State Batteries
On-line	**Jang Wook Choi**, Seoul National University, Korea
14:20 INV38	A Novel Fluoride-based Cathode for High-performance Na-ion Batteries
On-line	**Jongsoon Kim**, Department of Energy Science Sungkyunkwan University Suwon, 16419, Republic of Korea
14:40 INV39	One Dimensional Nanomaterials for Emerging Energy Storage
On-site	**Liqiang Mai**, Wuhan University of Technology
15:00 INV40	Rechargeable Batteries Based on Organic Electrodes
On-site	**Yonggang Wang**, Fudan University, China

Keynote Lecture

15:20 KEY23	Paving the Way of K-ion Batteries
On-line	**Laure Montconduit**, University of Montpellier, France

15:45 TEA BREAK

SESSION 16	General 4	Chairperson: Prof. Xiangxin Guo

Keynote Lecture

16:00 KEY24	Understanding and Mitigating Cross-Talk Phenomena in High-Voltage-Operated
On-line	NCM-based Lithium Ion Cells
	Martin Winter, University of Munster, Germany

Invited Lecture

16:25 INV41	The Working Mechanism of Functional Electrolyte Additives on Lithium Ion Batteries
On-site	**Yunxian Qian**, Shenzhen Capchem Technology Co.Ltd., China

16:45 INV42	Precise Surface Control of Cathode Materials for Improved Cycling Performance of
On-site	Lithium Ion Batteries
	Anmin Cao, Institute of Chemistry, China
17:05 INV43	Lithium Metal Batteries
On-site	**Xinyong Tao**, Zhejiang University of Technology, China
17:25 INV44	Two-Dimensional Lithium Storage Materials
On-site	**Shubin Yang**, Beijing University of Aeronautics and Astronautics, China
17:45 INV45	Interfacial Design of Dendrite-free Zinc Anodes for Aqueous Zinc-ion Batteries
On-line	**Haiyan Wang**, Central South University, China
19:00 DISCUSSION & DINNER BANQUET	

Friday, October 29

SESSION 17	Batteries materials	Chairperson: Prof. Xueliang Sun

Plenary Lecture

08:30 PLE5
On-site
Surface/interface engineering of electrodes towards high energy and safety lithium batteries
Shigang Sun, Xiamen University, China

Keynote Lecture

09:00 KEY25
On-site
Materials and Interface Modification for Ceramic Electrolyte Based Solid State Lithium Batteries
Zhaoyin Wen, Shanghai Institute of Ceramics, China

Invited Lecture

09:25 INV46
On-line
Strategies Towards Developing High-energy Multivalent-ion Batteries
Guoxiu Wang, University of Technology Sydney, Australia

09:45 INV47
On-line
Long-Life Power Optimised Lithium-ion Energy Storage Device
Adam Best, Commonwealth Scientific and Industrial Research Organisation, Australia

10:05 TEA BREAK

SESSION 18	General 5	Chairperson: Prof. Xiqian Yu

Keynote Lecture **Early career Lecture**

10:20 KEY26
On-line
Material Designs for High-Energy Advanced Battery Systems
Yichun Lu, The Chinese University of Hong Kong, Hongkong China

Invited Lecture

10:45 INV48
On-site
Design, Development and Characterization of Cathode Materials for Solid State Batteries
Yumin Liu, Xiamen Tungsten New Energy Materials Co., LTD, China

11:05 INV49
On-site
Design of Polymer Based Electrolyte and Interface Study
Haiming Xie, Northeast Normal University, China

11:25 INV50	Interphases in Solid-state VS. Non-aqueous Li Batteries
On-site	**Xiulin Fan**, Zhejiang University, China

11:45 LUNCH

Award Ceremony for Best Posters	**Chairperson: Prof. Yong Yang**
Plenary Lecture	**Technology Award Lecture**
14:30 PLE6	All Solid-State Batteries: New Electrolyte、Interface Design & Electrode
On-site	**Xueliang Sun**, University of Western Ontario, Canada
Plenary Lecture	**Yeager Award Lecture**
15:00 PLE7	Smart Use of Organics for Energy Storage
On-line	**Dominique Guyomard**, Univ. Nantes, France
Plenary Lecture	**Research Award Lecture**
15:30 PLE8	Calcium Based Batteries: Lessons Learnt &Challenges Ahead
On-line	**Rosa Palacin**, Institute of Materials Science of Barcelona, Spain

Closing ceremony	
16:00	Introduction of IBA-2022
On-line	**Robert Dominiko**, Chairman of IBA-2022
16:15	Closing Speech
On-line	Dr. Christopher Johnson, President of IBA
	Dr. Rosa Palacin, Elected President of IBA

List of posters

08:30 Monday, October 25-Session 1

P1 TiN as a high efficient coating layer to enhance the electrochemical performance of Ni-rich cathode material
Zhexi Xiao, Pengyingkai Wang, Chenxi Zhang, Fei Wei

P2 Improving Manufacturing Efficiency and Safety for Lithium-Ion Batteries
Felix Li, Alfred Liu, Yanming Xue, Yanan Chen, Xingsheng Wei, Luhao Kang, Zhilian Zhoua

P3 Multiscale Multimode Imaging Solutions for Lithium Battery Development
Wei Wu, Zhao Liu, Harold Phelippeau, Bartlomiej Winiarski, Chengge Jiao

P4 Interface Design for High-energy Solid-state Batteries
Longlong Wang, Malachi Noked, Guanglei Cui

P5 A more stable lithium anode via separator engineering and in-situ electrolyte additive tuned SEI
Minfei Fei, Kai Xi, Manish Chhowalla, Caterina Ducati, Guoran Li, R Vasant Kumar

P6 Boosting the scaling-up of silicates-based Na5YSi4O12 sodium superionic conductors with the tape-casting technique
Aikai Yang, Ruijie Ye, Qianli Ma, Frank Tietz, Olivier Guillon

P7 Advances in Understanding the Rechargeable Zinc-air Batteries Chemistry
Wei Sun, Fei Wang, Kang Xu, Chunsheng Wang, Martin Winter

P8 PIM-1 as a Multifunctional Framework to Enable High-Performance Solid-State Lithium–Sulfur Batteries
Yuchen Ji, Shida Xue, Feng Pan

P9 Extending Conductive Networks to Promote Cycling Stability of Si-based Anode
Zhibo Song, Shiming Chen, Feng Pan

P10 Construction and performance enhancement mechanism of multifunctional sulfur storage electrode based on electric field regulation
Handing Liu, Dalin Sun

P11 Suppressing Polysulfide Shuttling in Lithium–Sulfur Batteries via a Multifunctional Conductive Binder

Shiming Chen, Zhibo Song, Luyi Yang*, Feng Pan*

P12 Thermal Modulation for Enhanced Performance, Life, and Safety of Li-ion Batteries
Xiao-Guang Yang

P13 High Li+-conductive perovskite Li3/8Sr7/16Ta3/4Zr1/4O3 electrolyte prepared by hot-pressing for all-solid-state Li-ion batteries
Yunkai Wang, Chengkang Hu, Jiangbin Luo, Shengwen Zhong

P14 "Ceramic Framework-Polymer Filler" Composite Polymer Electrolyte for All-solid-state Na-ion Battery
Yumei Wang, Li Lu

P15 High-energy-density FeS_x cathodes for rechargeable lithium metal batteries
Jian Zou, Li Li, Liping Wang

P16 Controllable lithium nucleation within longitudinally bent carbon nanoribbons
Mengqi Zhu

P17 Preparation and Electrochemical Performance of hexagonal CoP@NC anode materials for lithium-ion batteries
Xue-qing Tan, Shaoming Ying

P18 Constructing Highly Ionic Conductive and Interfacial Stable Polymer Composite Electrolyte towards All Solid-State Li Metal Batteries
Yuxin Tang

P19 A quantitative computational method for the electronic insulating properties of solid-electrolyte interphase in Li-ion batteries
Yuan Fang

P20 Understanding of Oxide Electrodes for Li Ion Batteries based on Defect Chemistry Consideration
Kuan-Zong Fung, Shu-Yi Tsai, Kenneth Fung, Chia-Chin Chang, Li-Fu Chang

P21 Suppressing polysulfides towards high stability Lithium-Sulfur batteries Authors
Shuqi Dai, Chaozhi Wang, Qingsong Deng, Lishu Rong, Yongshen Xu, Songyao Hao, Mingjun Huang

P22 Symmetric Sodium-Ion Battery Based on Dual-Electron Reactions of NASICON-Structured $Na_3MnTi(PO_4)_3$ Material
Yu Zhou, Xiji Shao, Kwok-ho Lam, You Zheng, Lingzhi Zhao, Kedong Wang, Jinzhu Zhao, Fuming Chen, Xianhua Hou

P23 New P2-Type Honeycomb-Layered Sodium-Ion Conductor: $Na_2Mg_2TeO_6$

Yuyu Li

P24 The Development and Commercialization of Precise Nano Coating and Doping for High-Capacity Cathodes at High Voltages
Ming Xie

P25 Synergistic Lithium Storage in SiO_x-Sn/Ge Composites Enables a Cycle-Stable and High-Capacity Anode for Lithium-Ion Batteries
Hongda Zhao, Xuli Ding

P26 Perspective on Room Temperature Liquid Metals Based Batteries
Zerong Xing, Jing Liu

P27 Preparation and Application of CQDs/Ni(OH)20.75H2O as Electrodes in Supercapacitors
Yunlong Zhou, Hanxiu Fu, Kunfeng Cen, Weize Chen, Jingru Lu, Xiaofen Cao

P28 Free-standing all solid thick oxide cathodes based on low temperature sintering
Xiang Han, Songyan Chen, Yong Yang, Jizhang Chen, Chongmin Wang, Jun Liu, Jihui Yang

P29 Research Progress of Metal Compounds as Anodes of Sodium Ion Batteries
Yingxiao Li

P30 Intrinsic blocking effect of SiOx on the side reaction with a LiPF6-based electrolyte
Zhexi Xiao, Chunhui Yu, Xianqing Lin, Xiao Chen, Chenxi Zhang, Hairong Jiang, Fei Wei

P31 Optimized Li/LLZTO interface enabled by in-situ polymerization
Zhang Jingxi, Wang Chang-An

P32 Chasing the Thermal Degradation and Safety Concerns of Lithium-ion batteries
Xiang Liu*, Gui-Liang Xu, Amine Khalil, Minggao Ouyang

P33 High performance SiO_x@C anode material: From lab preparation to scale-up industrial mass production
Ziying He

P34 In-built ultraconformal interphases enable high-safety practical lithium batteries
YuWu, Xuning Feng, Khalil Amine, Minggao Ouyang

P35 Analysis of thermodynamic stability and phase equilibrium of the interface between solid electrolyte and cathode in the composite cathode in ASSBs
Fucheng Ren, Yong Yang

P36 A novel trimethylsilyl 2-(fluorosulfonyl)difluoroacetate additive for stabilizing the Ni-rich $LiNi_{0.9}Co_{0.05}Mn_{0.05}O_2$/electrolyte interface
Tianpeng Jiao, Jianming Zheng, Yong Yang

P37 Electrochemo-Mechanical Effects on Structural Integrity of Ni-Rich Cathodes with Different Microstructures in All Solid-State Batteries
Xiangsi Liu, Bizhu Zheng, Yong Yang

P38 Enabling Stable High-Voltage $LiCoO_2$ Operation by Using Synergetic Interfacial Modification Strategy
Xuerui Yang, Min Lin, Wanli Yang, Yong Yang

P39 Quantitative analyzing the failure processes of rechargeable Li metal batteries
Yuxuan Xiang, Yong Yang

P40 State of health (SoH) estimation and degradation modes analysis of pouch NMC532/graphite Li-ion battery
Xiaoxuan Chen, Yonggang Hu

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P41 Modifying an ultrathin insulating layer to suppress lithium dendrite formation within garnet solid electrolytes
Shijun Tang, Guiwei Chen, Fucheng Ren, Zhengliang Gong, Yong Yang

P42 Design and synthesis of Cu-Sn-S nanomaterials for lithium storage
Jie Lin

P43 Unravelling the Fast Alkali-ion Dynamics in Paramagnetic Battery Materials Combined with NMR and Deep-Potential Molecular Dynamics Simulation
Min Lin, Xiangsi Liu, Yuxuan Xiang, Feng Wang , Yunpei Liu, Riqiang Fu, Jun Cheng, Yong Yang

P44 HCOONa interphase for high performance sodium anode free batteries
Chaozhi Wang, Xiaoliang Fang, Nanfeng Zheng

P45 Research on NASICON-type Solid Electrolyte $Li_{1.3}Al_{0.3}Ti_{1.7}(PO_4)_3$ and the Interface with Lithium Metal
Jianping Zhu, Yong Yang

P46 Highly Stable $LiCoO_2$-based Batteries at Cut-off 4.6 V and beyond
Ang Fu, Zhengfeng Zhang, Pengfei Yan, Yong Yang, Jianming Zheng

P47 Counter-Intuitive Structural Instability Aroused by Transition Metal Migration in Polyanionic Sodium Ion Host
Rui Liu, Shiyao Zheng, Yifei Yuan, Jun Lu*, Yong Yang*

P48 Chloroaluminate Ionic Liquid Electrolytes towards Advanced Sodium and Potassium Metal Batteries
Hao Sun

P49 Single-crystal Ni-rich layered oxide cathode materials
Linsen Li

P50 Bulk and interphasial structures of lithium battery materials revealed by multi-model synchrotron X-ray based characterization techniques
Zulipiya Shadike, Enyuan Hu, Jie Xiao, Xiao-Qing Yang

P51 The Electronic Structure of Anode Material Li2TiSiO5 and Its Structural Evolution during Lithiation
Yifan Wu, Zhenming Xu, Yao Liu, Junchao Chen, Luming Peng, Olaf J. Borkiewicz, Hong Zhu, Shou-Hang Bo, Yongyao Xia

P52 Reaction heterogeneity in layered Ni-rich cathode materials for Li-ion batteries
Chao Xu,Clare P. Grey

P53 Advantages and challenges of the applicable time-domain electrochemical impedance spectroscopy measurements
Taolin Lv, Shiyi Fu, Jingying Xie

P54 Go-TiN@Zinc protoporphyrin@Go-TiN triple composite nanofiber membrane as multifunctional interlayer for advanced lithium-sulfur batteries
Zhiheng Ren, Xiangzhong Ren

P55 $CoCO_3$@Mxene composite based on CO32- deep lithiation exhibits superior lithium storage performance
Xiaochao Wu, Xiangzhong Ren

P56 Designing high voltage stable and high energy density solid-state lithium batteries: From interfacial engineering to solid electrolyte thinning
Jianneng Liang, Xue Ye, Xueliang Andy Sun

P57 Understanding the charge compensation mechanism and structural changes in cation/anion redox Li-Mn-rich layered oxide cathode material at different current ranges
Xin He

P58 Origin of low Li-ion conductivity at “grain boundary” in perovskite solid-state

electrolyte
Lei Xu, Lifeng Zhang, Langli Luo

P59 In Situ Formed Polymer Electrolyte Shields Soluble Organic Cathode for Long Cycle Life, High Rate and Wide-Temperature Batteries
Mengjie Li, Yunhua Xu

P60 Customized Electrolytes Enabled Fast Charging and Stable Cycling Li-Metal Full Batteries
Hai Su, Yunhua Xu

P61 Regulation of Cathode-Electrolyte Interphase Formation via Non-Conventional Electrochemical Approach to Realize Stable High-Voltage Operation: 4.6 V Li||$LiCoO_2$ Batteries as a Typical.
Panxing Bai, Xiao Ji, Jiaxun Zhang, Weiran Zhang, Yunhua Xu, Chunsheng Wang

P62 Application of Mn-based Cathode Material for Li-ion Battery in Fuel Cell
Jiyi Li

P63 In-situ Polymerized Solid-state Electrolytes with Stable Cycling for Li/$LiCoO_2$ Batteries
Zhen Geng, Yuli Huang, Guochen Sun, Rusong Chen, Wenzhuo Cao, Hong Li

P64 Optimizing Interface of High-Ni/ low-Co Cathodes for Lithium Ion Batteries
Wen Liu, Jiaxuan Zuo, Yikun Bai, Wenbin Li, Jingjing Wang, Xifei Li

P65 Tailored Interphases Enabling Practical Lithium–Sulfur Full Batteries
Zeyu Shen, Weidong Zhang, Yingying Lu

P66 Interfacial modification enable stable cycling of high-voltage lithium-ion batteries
Shulan Mao, Yingying Lu

P67 Solvent-free synthesis of morphology-controllable nickel sulfides via one-pot plasma reactions for high-performance lithium-ion batteries
Yinghui Yang, Junzhang Wang, Xiufang Bian, Xingzhong Guo

P68 The Armed Solid Electrolyte Interphase under High Voltage for High-Performance Lithium Metal Anodes
Gongxun Lu, Jiale Zheng

P69 High-specific-energy and sustainable Li metal batteries
Tiefeng Liu

P70 An ultrastable lithium metal anode enabled by designed metal fluoride

spansules
Huadong Yuan, Zhijin Ju, Ouwei Sheng, Hao Xu

P71 Porous $TiNb_2O_7$@N-C as anode materials for lithium-ion batteries with ultrahigh rate performance
Xiao-Bin Zhong

P72 Rechargeable Hydrogen Gas Batteries
Wei Chen

P73 Recent progress of ionogel electrolytes in high-voltage energy storage devices
Qinqin Ruan, Jiajia Li, Haitao Zhang

P74 Construction of robust conductive networks in semi-solid Li-ion flow batteries
Shanshan Pan, Peipei Su, Haitao Zhang

P75 Constructing stable cathode/Li interfaces simultaneously via different electron density azo compounds for solid-state lithium metal batteries
Jin Li, Yingjun Cai, Haitao Zhang

P76 Interface mechanics and interfacial tailoring of Si-based thin-film micro-batteries
Chunguang Chen, Tao Zhou, Dmitri Danilov, Florian Hausen, Tobias U. Schülli, Jici Wen, R.-A. Eichel, Peter H. L. Notten, Yujie Wei

P77 Revealing lithium-ion diffusion network in the disordered rocksalt cathode materials
Junyang Wang, Yujian Sun, Yuanpeng Zhang, Jue Liu, Xiqian Yu, Hong Li

P78 Strategies to optimize the interface compatibility in solid state Li ion batteries
Pengfeng Jiang, Xia Lu

P79 Unlocking the Potential of P3 Structure for Practical Sodium-Ion Batteries by Fabricating Zero Strain Framework for Na^+ Intercalation
Yuansheng Shi, XiaLu

P80 Solvent-free all-solid polymer-based secondary Li-ion battery electrolyte
Zekun Zhou, Zhen Liu, Linyun Zhang, Xueying Zheng, Xieyi Xiao, Peng Zhang

P81 Deciphering the role of tetrahydrofuran residue in the poly(ethylene oxide)/LiTFSI hybrid used for secondary battery electrolyte
Zekun Zhou, Ruike Zou, Zhen Liu, Peng Zhang*

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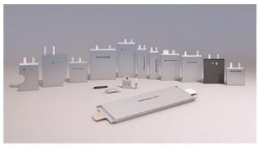

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On the basis of its market share of tungsten products ranking No.1 in the world, Xiamen Tungsten Co., Ltd. has been actively developing new energy materials industry dominated by lithium cathode materials. Since 2004, the company has invested a lot of money to establish production lines for LCO, LMO, NCM, LFP etc. It has become a leading company in the domestic new energy materials market, and is also the first enterprise in China to export NCM for power batteries to Japan.

With the continuous expansion of the scale of the company's new energy materials business, in order to better realize the independent function of the new energy materials business and promote the improvement of the performance and core competences of the new energy materials business, we separated from the Xiamen Tungsten Co., Ltd. on December 20, 2016 and established XTC New Energy Materials (Xiamen) Co. Ltd. In April 2020, the company completed the shareholding restructuring and was changed to XTC New Energy Materials Co., Ltd. In August 2021, XTC New Energy grabbed the opportunity of the spin-off and officially listed on the STAR Market (SSE: 688778), becoming the first company in Fujian Province.

The company now has 4 wholly-owned and holding subsidiaries and 1 new energy materials research institute, with four production bases in Haicang, Haijing, Sanming, and Ningde. It has a total production capacity of 65,000 tons of lithium battery cathode materials and a production and sales volume of 60,000 tons. Our target is to build XTC New Energy into the most internationally competitive new energy material industry base.

The company's products cover a full range of new energy material products such as LCO, NCM, precursors, LFP, high nickel materials, NCA, etc. Among them, 4.4V, 4.45V high voltage LCO, 523, 622 single crystal NCM Meta materials, 811 high nickel materials are well-known in the market. The products are used in 3C digital, EV market, energy storage and other fields, and widely serve well-known battery customers domestic and abroad. With market share ranked among the best in the industry, the company has created an outstanding brand of XTC New Energy Materials.

XTC New Energy has established the vision of "taking the development and expansion of the energy and new material industry as its own responsibility", adhering to the corporate mission of "providing advanced material solutions for achieving carbon neutrality". In the future, XTC New Energy will take the listing as a new starting point, take the development path of "high-end products, integration of production and research, and internationalization of management" by mechanism innovation, and strive to build itself into a first-class and respected public company.

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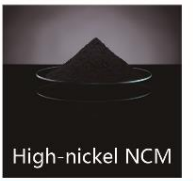
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Zhangjiagang Guotai Huarong New Chemical Materials Co., Ltd.

ABOUT US

Zhangjiagang Guotai Huarong New Chemical Materials Co., Ltd. was established in 2002. It is a national high-tech enterprise focusing on lithium battery materials and organic silicon materials. It is one of the world's three largest suppliers of lithium-ion battery electrolyte and domestic main manufacturer of silane coupling agents.

The company is headquartered in Zhangjiagang, with Korean company, Ningde company, and Polish company. It has National Post-doctoral Research Station, Provincial Enterprise Technology Center, Provincial Engineering Technology Research Center, and Provincial Enterprise Graduate Workstation. It has successively passed the British Standards Institution ISO9001、ISO14001、ISO45001、IATF16949 system certification.

The company is determined to become the world's largest and most comprehensive electrolyte supplier and the world's highest-end silane material supplier.

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CAPCHEM was founded in 2002 and originated from Shenzhen Capchem Co., Ltd. founded in 1996; it was changed to Shenzhen Capchem Technology Co., Ltd. in 2008. It was successfully listed in Shenzhen Stock Exchange (stock code: 300037) on January 8, 2010.

CAPCHEM products mainly include four series of lithium battery chemicals, capacitor chemicals, organic fluorine chemicals and semiconductor chemicals. The products have been exported to Japan, South Korea, the United States, Europe, Southeast Asia and other countries. With leading technological innovation advantages, excellent product quality, good after-sales service, stable and rapid delivery capacity, Capchem has become a global partner of well-known enterprises at home and abroad, including Panasonic, Murata, Samsung, LG, DuPont, Daikin, Solvay, Piramal, BYD and CATL. Capchem has gradually become a global leader in electronic chemicals and functional materials industry.

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TIME	24th Oct.	25th Oct.	26th Oct.	27th Oct.	28th Oct.	29th Oct.
PLACE	MILLENNIUM HARBOURVIEW HOTEL XIAMEN					
8:30-9:10	REGISTRATION	OPENING CEREMONY& GROUP PHOTO	PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION
9:10-10:00		PRESENTATION				
10:00-10:20		COFFEE BREAK				
10:20-12:00		PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION
12:00-13:30		LUNCH BREAK				
14:00-15:40		PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION
15:40-16:00		COFFEE BREAK				AWARDING & CLOSING CEREMONY
16:00-17:30		PRESENTATION	PRESENTATION	PRESENTATION	PRESENTATION	
18:30-20:30		DINNER& DISCUSSION	DINNER& DISCUSSION	DINNER& DISCUSSION	19:00-21:00 SOCIAL DINNER	