



第十届深圳国际石墨烯论坛

10th International Forum on Graphene in Shenzhen

第四届储能材料国际研讨会

4th International Conference on Energy Storage Materials

FORUM BROCHURE

Shenzhen · China

13-16 April, 2023

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扣电/软包等各种电池充放电产气原位检测仪器

电化学质谱仪PM-DEMS

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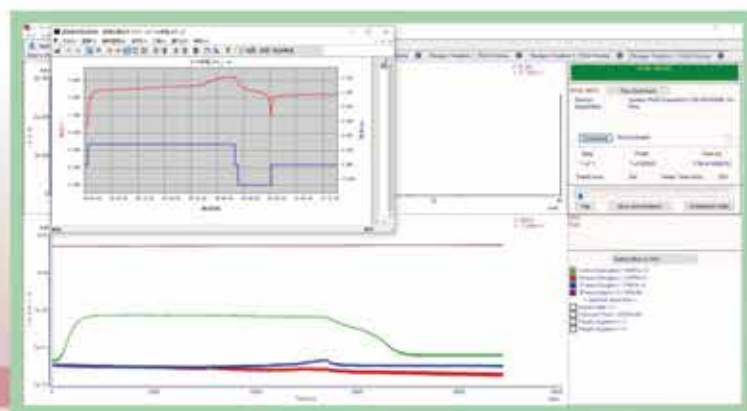
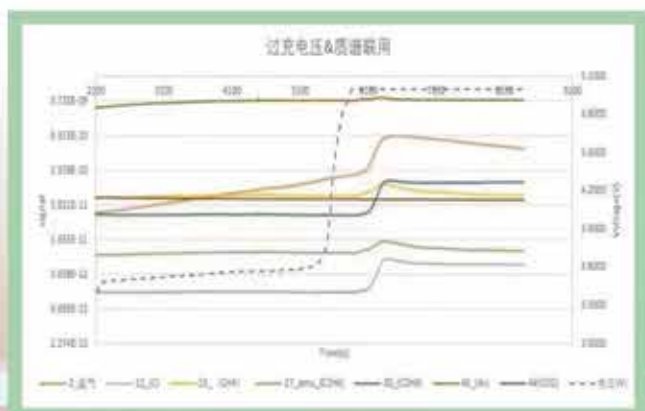
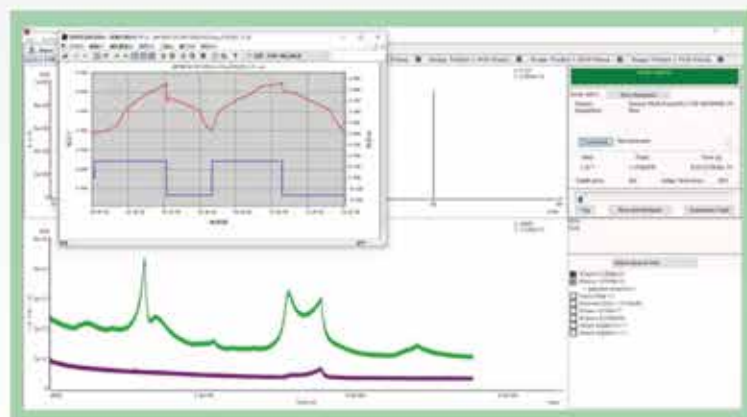
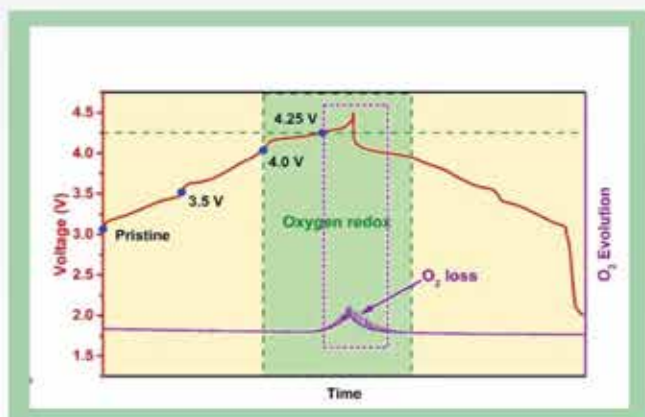


国产品牌

■ 高性能 高性价比 ■



电池产气案例图





永安市石墨和石墨烯产业园

YongAn High-Technology & Industrialization
of Graphite & Graphene

2016年，永安市依托资源禀赋，规划建设总面积20.6平方公里的石墨和石墨烯产业园，是福建省石墨产业“两核三区”发展布局中唯一的专业园区。园区交通便利，距三明沙县机场、连城冠豸山机场仅1小时，到南龙铁路永安南站和三明站仅20分钟，泉三高速贡川互通口与入园大道直连。目前已开发工业熟地7600亩，园区道路、供电、供水、污水处理、天然气、蒸汽等基础设施配套完善，开通城区至园区公交专线车。

近年来，永安举全市之力，按照“一纵三横”产业定位，着力于建平台、聚人才、育企业、铸链条发展目标，出台加快高端石墨和石墨烯产业集聚发展政策，加快建设石墨和石墨烯产业孵化中心、北京石墨烯研究福建产学研协同创新中心、永清石墨烯研究院、石墨烯应用工程实验室，努力建设配套完善、承载力强、服务优质的园区。目前，已有翔丰华、贝特瑞深瑞、鼎丰、泰启力飞、康碳、梦康、福碳、中禾等22家石墨和石墨烯等先进碳材料企业落地园区，涉及石墨负极材料、核石墨、高端特种石墨和石墨烯导热、导电、家居等产品研发生产制造。

园区将紧抓时代机遇围绕福建省石墨烯产业发展规划布局，创新突破，招才引智，突出产城融合发展，促进“石墨烯+”与生产、生活、生态等功能耦合，力争2025年石墨和石墨烯等先进碳材料相关产品产值突破100亿元，努力建设成为全国一流、有影响力的石墨烯产业园。





深圳市德方纳米科技股份有限公司

Shenzhen Dynamonic Co.,Ltd.

深圳市德方纳米科技股份有限公司（股票代码：300769）创建于2007年1月，致力于锂离子电池核心材料研发、生产和销售，是国家制造业单项冠军示范企业。公司的核心产品是磷酸盐系正极材料，产品广泛应用于新能源汽车动力电池、储能电池等领域。公司总部位于深圳市南山区，并在广东佛山、云南曲靖、四川宜宾建有大型研发和生产基地。

德方纳米控股子公司德方创域于2023年2月26日完成年产2万吨补锂剂一期项目的投产，该项目是目前全球首个实现量产的正极补锂剂项目，将有助于德方纳米在未来以更多元化的产品形态提升市场份额、以更极致的产品品质推动产能提升、以更前沿的科研技术赋能锂离子电池行业的革新与发展。

纳米磷酸铁锂

主要特点：

长循环/高安全/低成本

- 长循环，10000+循环寿命
- 高安全，结构稳定耐高温
- 综合性能好，低成本

纳米磷酸锰铁锂

主要特点：

高能量密度

- 高电压平台，能量密度可提升15%~20%
- 低温性能好，-20℃放电90%以上
- 具有良好的安全性

铁系正极补锂添加剂

主要特点：

高导电/高容量/易加工/高性价比

- 导电分子聚合，导电性高
- 高容量，首次充电克容量高达600 mAh/g
- 易加工，与现有产线匹配性高
- 高性价比，可降低电芯单位wh成本

XploRA PLUS

智能型全自动拉曼光谱仪

高分辨率

高灵敏度

超快速成像



- 科研级、高性能显微共焦拉曼光谱仪
- 不同实验条件间全自动切换（激发波长、光栅等）
- 强大的拓展功能（颗粒分析、自动聚焦、AFM-拉曼联用等）

扫/描/二/维/码
领/取/解/决/方/案



HORIBA 集团 · 科学仪器事业部

HORIBA Scientific（科学仪器事业部）隶属 HORIBA 集团，是全球著名的分析与检测仪器制造商之一。部门一直致力于为用户提供先进的检测和分析仪器，涉及光学光谱、分子光谱、表面测量、粒度表征、元素分析等。

HORIBA Scientific 旗下拥有众多知名品牌的技术优势，包括近 200 年光谱制造技术经验的 Jobin Yvon。今天，HORIBA Scientific 的各种高端检测分析仪器已经遍布全球各地，并在中国实现了销售和服务的本土化，位于上海、北京、广州、西安、成都、武汉等地的产品专家、售后服务团队以及全国各地的代理商机构可充分保障国内用户的技术咨询以及售后服务需求。

上海办公室: 021-6289 6060

北京办公室: 010-8567 9966

广州办公室: 020-3878 1883

西安办公室: 029-8886 8480

成都办公室: 028-8620 2663



微信公众号



1688网上商城



大金集团创立于1924年，是一家集空调、冷媒、压缩机的研发、生产、销售、售后服务为一体的世界知名企业。

大金氟化工（中国）有限公司成立于2001年4月，生产基地位于江苏省常熟新材料产业园，并在北京、上海、广州、深圳设有分公司。主要从事氟化工产品的生产加工、销售自产产品，提供售后服务及技术服务。

为抢抓市场发展机遇，2019年，成立了大金新材料（常熟）有限公司，主要生产面向半导体、新能源汽车、5G通信、航空航天等领域的高性能氟化工产品。

大金集团始终坚持以发掘客户“下一个需求”为使命，不断为客户创造新的价值。凭借完善的质量管理和技术服务、超前的环保意识、全球性的生产营销网络和长效的安全机制赢得了较高的赞誉度。

即使在使用高镍正极活性物质时，也能获得优异的浆料稳定性。



改善极片的抗裂性



极片的高密度化

NEOFLON VW - 770 PVdF 改性树脂

VW-770是具有大金特色的PVdF改性树脂，高镍活性物质浆料的粘度稳定性优异，可以提高极片的密度和抗裂性，这正是我们孜孜以求的超越传统PVdF粘结剂的功能性产品。

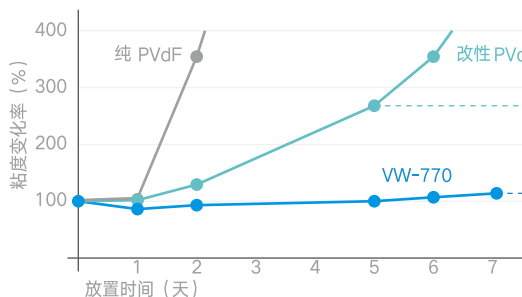
NEOFLON VT - 475 粘结剂改性剂

VT-475是一种粘结剂改性剂，通过添加到已使用的PVdF粘结剂中，提供与VW-770相同的“浆料粘度稳定性，电极柔韧性和高固含”。在不改变目前使用的粘结剂等级的情况下，我们的添加剂产品集成了VW-770开发中的宝贵经验，为提高电池性能做出贡献。标准添加量为20%，但应根据胶凝状态调整添加量。

大金氟化工锂离子电池正极粘结剂添加剂 NEOFLON VT-475荣获2023第三届先进电池材料集群产业发展论坛<清新低碳产品奖>



使用NMC 811活性物质时浆料粘度保持率



改性PVdF
浆料凝胶化



VW-770
合适的粘度

- 本产品作为工业用途而开发，使用在其他行业时不保证其安全性。在医疗、食品等行业使用时，请预先与本公司联系。
- 本资料信息来自于大金自测数据，在此不作任何明示或暗示的承诺、保证。

烯旺科技 石墨烯产业先锋

国家高新技术企业
深圳市石墨烯协会会长单位
石墨烯产业奠基人冯冠平教授2015年创办
率先将石墨烯从实验室运用到商业应用企业
国家军工资质认证的石墨烯企业
国内首家获得医疗器械资质认证的石墨烯企业
深圳创新企业70强、深圳行业领袖百强企业
平昌冬奥会《北京8分钟》、两届央视春晚石墨烯技术提供商



513^项
国内申请专利

331^项
授权专利

60^项
授权发明专利

40^项
石墨烯医疗成果

10万吨^年
石墨烯改性涂料

40万m²^年
CVD石墨烯薄膜生产线

四大业务体系



石墨烯医疗大健康

石墨烯医疗器械、养护护具、美容、能量房、服饰家纺系列



石墨烯改性涂料

石墨烯改性防腐涂料、改性功能涂料、改性热固性粉末涂料等五大产品体系



石墨烯热管理领域

石墨烯供暖系统、石墨烯发热部件、石墨烯发热行业合作体系



高导电石墨烯复合材料

联合研制高电导率石墨烯铜复合材料“超级铜”，导电性能超过银10%



扫码获取更多

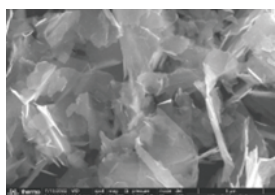


纳米技术领先者
创造纳米技术新应用

广东一纳科技有限公司位于广东省惠州仲恺高新技术产业开发区，是中国领先的石墨烯企业。公司以中山大学为技术起源背景，掌握多项石墨烯生产和应用的核心技术，以技术创新引领行业发展。

公司专业从事纳米材料的研发，生产及销售，在石墨烯技术研发实力方面处于行业领先地位，产品获得多家头部企业的认证并大批量供货。目前我司年产高质量石墨烯粉体400吨，石墨烯浆料1000吨。公司在石墨烯开发及应用等方面开展了诸多开创性的工作并取得突破性进展；公司与清华大学、中山大学、中科院等科研院所保持密切的合作关系。

公司以创造纳米技术新应用为愿景；以服务客户，与客户共成长为宗旨；坚持以创新为发展驱动力，以技术领先、服务专业为核心竞争力。旨在成为全球最优秀的纳米材料企业。



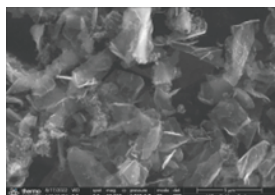
01 石墨烯粉体-AF100系列

本产品是具有高比表面积和较高导电性能的石墨烯粉体。呈现黑灰色的蓬松外观，兼容大多数工业常用的分散和成型工艺。
主要应用于二次电池、功能性复合材料。



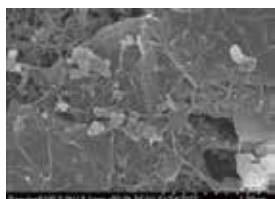
06 钠离子电池负极材料

本产品是一种无结块无杂质、颜色均一的黑色不规则粉体碳复合材料。
主要应用于低成本钠离子电池负极材料。



02 石墨烯复合粉体-AF600系列

本产品是一款以石墨烯、碳纳米管、导电炭黑为核心成份，专业针对锂离子正、负极材料开发的高性能复合导电粉体。利用石墨烯的优异导电性和柔性薄膜结构，可以在极片中形成高效三维导电网络，降低极片电阻率，提高电池倍率性能和循环寿命。同时还可以增强极片压实，从而提高电池能量密度。
主要应用于锂离子电池正负极导电材料使用。



03 石墨烯复合浆料-AL1000系列

本产品是一款以石墨烯、碳纳米管、导电炭黑为核心成份，专业针对水性锂电池工艺开发的高性能导电添加剂，不需要额外添加其他任何导电剂。利用石墨烯的优异导电性和柔性薄膜结构，可以在极片中形成高效三维导电网络，降低极片电阻率，提高电池倍率性能和循环寿命。同时还可以增强极片压实，从而提高电池能量密度；
主要应用于锂离子电池、一次电池、特种电容等领域。



04 石墨烯纳米分散液- FN-H21

石墨烯纳米分散液石墨烯作为新型纳米碳材料具有大比表面积、极强的导电性和结构柔性等优异特性。FN-H21石墨烯纳米分散液主要是由石墨烯纳米材料分散到液相中形成的一种稳定悬浮液体。主要表现为可以与经过清洁整孔后的单层或多层 PCB/FPC 孔壁完成粗糙界面充分接触与物理吸附，在各类非导体的孔壁表面上，形成一层连续均匀的石墨烯膜层。主要应用于PCB 制程工段取代化学镀铜 (PTH) 工艺，极大地缩短制程工艺路线，降低水消耗，节能、环保。



05 钠离子电池正极材料-NFM111

NFM111 镍铁锰酸钠是一种无结块无杂质、颜色均一的黑色球形或类球形粉末材料。
主要应用于钠离子电池正极。



公司地址：广东省惠州仲恺高新区潼湖生态智慧区创新园
联系电话：0752-5312168/15811972840
联系邮箱：wjx@gdanano.com
公司网址：<http://www.gdanano.com>



清华大学深圳国际研究生院
Tsinghua Shenzhen International Graduate School

材料与器件检测技术中心
Testing Technology Center of Materials and Devices

中心概况

清华大学深圳国际研究生院材料与器件检测技术中心成立于2008年，是依托广东省能源与环境材料创新团队建设，并经中国合格评定国家认可委员会(CNAS)认可和加拿大标准协会(CSA)授权，集第三方检测与校准、实验教学、科学研究与科技创新为一体的综合性服务机构，中心专注为广大企事业单位提供检测分析、标准制定、仪器校准业务。

目前，中心拥有总价值逾1.5亿元的专业测试分析仪器和研发设备，测试平台包括材料检测和器件检测两大业务，拥有完善的检测设备，包括：Thermo Scientific Spectra 300 TEM, HORIBA LabRAM HR800 Raman, Bruker Dimension Icon AFM, PHI 5000 Versa Probe XPS, ARC BTC-500, Maccor电池测试仪等在内的国际专业检测分析设备。

材料测试

微区形貌观测

场发射扫描电子显微镜TEM (Tecnai G2 F30, Tecnai G2Spiri H120)、冷场发射扫描电子显微镜SEM (HITACHI SU8010)、原位电化学原子力显微镜AFM (Bruker Dimension Icon)、双球差校正透射电子显微镜 (Thermo Scientific Spectra 300)、热场发射扫描电子显微镜 (Apres 2S) 等

结构、成分分析

原位X射线衍射仪In-Situ XRD (Bruker D8 Advance)、原位显微激光共聚焦拉曼光谱仪In-Situ Raman (HORIBA LabRam HR800)、原位傅立叶变换红外光谱仪In-Situ FTIR (Thermo Scientific Nicolet IS50)、原位X射线光电子能谱仪In-Situ XPS (PHI 5000 VersaProbe II)、气相色谱质谱联用仪GC-MS (TRACE 1300 GC ISQ)、元素分析仪Vario EL cube、电感耦合等离子体发射光谱仪ICP-OES (Arcos II MV)、紫外可见近红外分光光度计UV-Vis-NIR (Cary5000)、飞行时间二次离子质谱仪 (PHI nano TOF II) 等

理化性质

比表面积、孔径分布、孔隙率、物理吸附分析仪、激光粒度仪、纳米粒度与Zeta电位仪、电导率仪、真空度计、振实密度仪、同步热分析仪、差示扫描量热仪、热失重分析仪、热机械分析仪、动态热机械分析仪、热膨胀系数分析仪、接触角测量仪、水分测试仪、表面张力分析仪、万能电子试验机、硬度计、粘度计、纳米压痕仪等

电池测试

中心配备国内外先进的电池测试仪及环境辅助性设备，能够对动力电池电芯、模组、电池包进行Hppc、Soc标定，不同温度充放电容量，不同倍率放电容量、交流及直流电阻、工况模拟，不同温度存储、循环及耐久性能等进行测试。

平台设备

MACCOR动力电池测试仪 (S4000, MC16, MC8, 4000H等)、新威电池测试仪、蓝电测试系统、电化学工作站、热电参数测试系统、振动试验机、机械冲击试验机、电池高温隔爆试验机、电池挤压试验机、电池重物冲击试验机、电池燃烧喷射试验机、电池洗涤试验机、电池针刺试验机、静电放电模拟、电池短路试验机、电池低气压模拟试验机、绝热量热仪ARC (BTC-500) 等

荣誉资质

2013·中国合格评定国家认可委员会 (CNAS) 认可实验室
2016·加拿大标准协会 (CSA) 授权实验室

中心服务部分科研单位



中心服务部分企业单位



中心实景展示



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地 址: 深圳市南山区西丽大学城能源环境大楼4楼



欢迎扫码了解详情

深圳石墨烯创新中心有限公司

SHENZHEN GRAPHENE INNOVATION CENTER CO., LTD.

一 公司介绍

深圳石墨烯创新中心有限公司是在广东省工信厅、深圳市工信局和光明区政府的支持下，由清华大学牵头，联合政府产业平台、企业和社会资本，共同发起成立的以“政产学研用资”为主导模式的混合所有制公司。是集技术开发、检测服务、产业孵化等功能为一体的科技创新平台。创新中心设有技术专家委员，由 40 位技术专家组成，其中包括 12 位国内外院士。

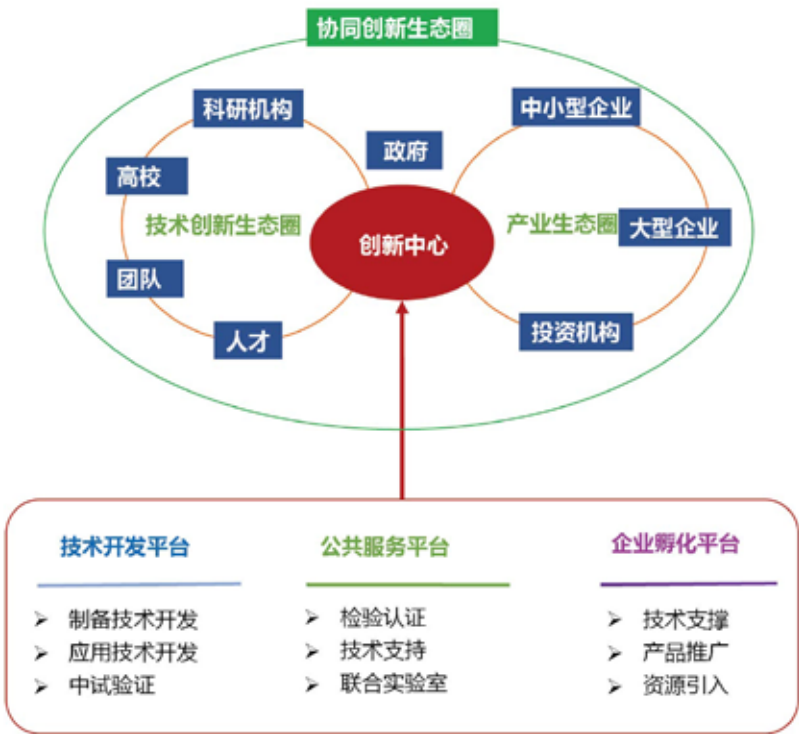


创新中心致力于石墨烯&新材料的研发、中试、产业化与商业化应用推广，石墨烯材料与器件检测服务，石墨烯材料与应用的计量标准化；具备开展石墨烯&新材料制备技术开发、储能/热管理/环境等领域应用技术开发、材料与器件测试的技术能力。依靠“石墨烯材料与器件测试评价公共服务平台”，可开展优质、可靠、高效的检测技术服务，平台按照 CNAS 体系要求管理运行，保证测试结果的科学性、公正性和准确性。

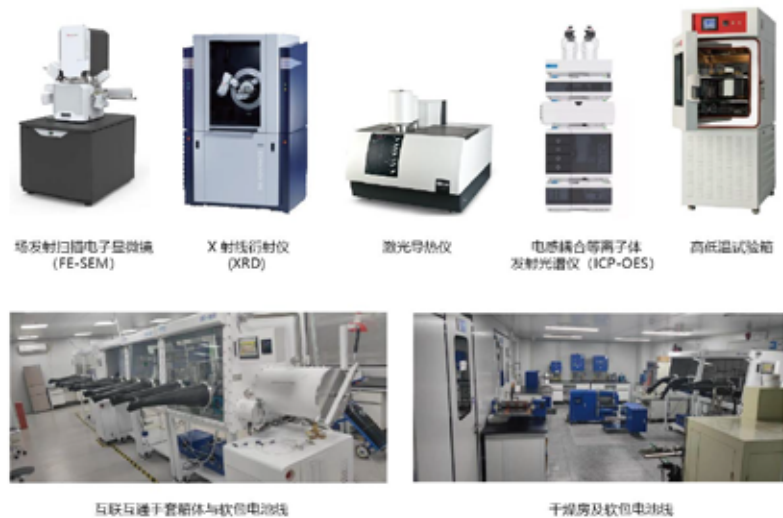
三 技术方向



二 创新平台



四 技术能力



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Foreword

The Fourth International Conference on Energy Storage Materials

13-16 April, 2023 Shenzhen·China

The Fourth International Conference on Energy Storage Materials will be held at Tsinghua Shenzhen International Graduate School during 13 April, to 16 April, 2023. The conference is jointly organized by Co-Organized by Institute of Technology for Carbon Neutrality, Shenzhen Institute of Advanced Technology, CAS, Shenzhen Institutes of Advanced Technology, Advanced Battery Materials Industry Cluster, and Shenzhen X9 Alliance of Universities and Institutes around X-Lake Sciensity.

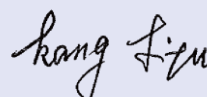
The conference mainly focuses on advanced energy storage materials and devices, and invites well-known scholars and entrepreneurs in universities and institutes from different countries to discuss the research and industrialization progress of the above mentioned materials and devices. At the same time, there will be oral presentations and poster sessions held in this conference. Our aim is to bridge between distinguished foreign and Chinese scientists, policy makers and entrepreneurs to exchange and cooperate, to promote the application of energy storage materials and the process of the energy storage devices.

Energy Storage Materials is also requesting written nominations from the international community for its 2020-2022 Energy Storage Materials Award. The purpose of this award is to recognize an outstanding scientist in the field of energy storage and conversion materials and devices who has made significant contribution and whose work shows significant innovation in the field. The award will be presented at this Conference, and the winner will be asked to give a plenary lecture at this conference and to write a paper related to his/her lecture for Energy Storage Materials. In addition, the Best Paper Award, the Most Cited Paper Award, and the Excellent Reviewer Awards in 2022 will be conferred at the conference as well.



Prof. Hui-Ming Cheng

Tsinghua Shenzhen International Graduate School
Institute of Metal Research, Chinese Academy of Sciences
Shenzhen Geim Graphene Center



Prof. Feiyu Kang

Tsinghua Shenzhen International Graduate School
Shenzhen Geim Graphene Center

Foreword

The Tenth International Forum on Graphene in Shenzhen

13-16 April, 2023 Shenzhen·China

Nowadays, the fundamental research and commercialization of two-dimensional (2D) materials: graphene, are blooming. Globally, China and many major developed countries/regions have formulated important strategic layouts for the future development of graphene materials and their application. According to China's thirteenth Five-Year National Plan, graphene-represented nano-functional materials are explicitly proposed to preferentially develop.

In order to further promoting the development of graphene based nano-carbon materials and other 2D materials in China and globally, The Tenth International Forum on Graphene in Shenzhen will be hold during 13-16 April, 2023 The conference is co-chaired by Prof. Hui-Ming Cheng (Member of the Chinese Academy of Sciences) and Prof. Feiyu Kang, hosted by Shenzhen Science Technology and Innovation Commission and the People's Government of Nanshan District, Shenzhen, and organized by Tsinghua Shenzhen International Graduate School, Institute of Metal Research, Chinese Academy of Sciences and Shenzhen Geim Graphene Center.

Since the first conference was held in 2014, this is the 10th high-level international one in Shenzhen, which will concentrate on graphene, novel 2D materials and other nano-carbon materials. Many world-renowned experts and entrepreneurs from China, USA, Europe, Korea, Singapore, Japan, etc., will present their excellent research work and discuss the industrialization on the above mentioned materials. Therefore, the conference will function as an exchange and corporation platform for those distinguished Chinese and abroad scientists, policy makers and entrepreneurs in the related fields.

On behalf of the organizing committee, we wish to express our warm welcome and sincere thanks to all of you, the distinguished speakers and attendees. We hope you will enjoy this wonderful forum and your stay in Shenzhen.



Prof. Hui-Ming Cheng

Tsinghua Shenzhen International Graduate School
Institute of Metal Research, Chinese Academy of
Sciences Shenzhen Geim Graphene Center



Prof. Feiyu Kang

Tsinghua Shenzhen International Graduate School
Shenzhen Geim Graphene Center

Concise Conference Agenda

Date	Time	Activities				
14 April Friday	08:30-09:00	Opening Ceremony				
	09:00-12:00	Plenary Speech				
		Lunch				
	13:30-15:45	Plenary Speech				
	16:15-17:45	Round Table-Future Graphene and Energy Storage Materials Industry Dialogue Session				
15 April Saturday	08:30-12:00	Plenary Speech & EnSM Awardees' Lectures				
		Lunch				
	13:30-13:55	EnSM Awarding Ceremony				
	13:55-17:50	EnSM Awardees' Lectures				
	17:50-18:00	IFGSZ & ICEnSM Excellent Poster Awarding Ceremony				
	18:30-20:30	Banquet				
16 April Sunday		Session	Session 1: Preparation of graphene and 2D materials	Session 2: Device applications for graphene and 2D materials	Session 3: Other applications for graphene and 2D materials	Session 4: Industrial development of graphene and energy storage materials
	08:30-17:00		Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech
		Session	Session 5: Alkali metal batteries	Session 6: Li-S batteries, metal-air batteries and flow batteries	Session 7: Aqueous batteries and supercapacitors	Session 8: New concepts and new device
	08:30-17:00		Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech Oral Presentation	Keynote Speech Invited Speech

Conference Time and Site

Theme	Time	Site	
Opening Ceremony Plenary Lecture Round Table Session	14 Apr, 2023 08:30-17:00	Shenzhen UniversityTown International Conference Center Auditorium	
Plenary Lecture EnSM Awardees' Lecture Awarding Ceremony	15 Apr, 2023 08:30-17:00	Shenzhen UniversityTown International Conference Center Auditorium	
session 1	16 Apr, 2023 08:30-17:00	Tsinghua SIGSEnergy and Environment Building	Room 503
session 2			Room 504
session 3			Room 502
session 4			Room 501
session 9			Conference Hall 104
session 5		Shenzhen University Town International Conference Center	Multipurpose Hall 204
session 6			Conference Hall 201
session 7			Video Conference Room 207
session 8			Conference Hall 202

Report Time: Plenary Lecture-45min, Keynote Speech-30min, Invited Speech+Oral Presentation-15min

Session 1: Preparation of graphene and 2D materials

Session 2: Device applications for graphene and 2D materials

Session 3: Other applications for graphene and 2D materials

Session 4: Industrial development of graphene and energy storage materials

Session 5: Alkali metal batteries

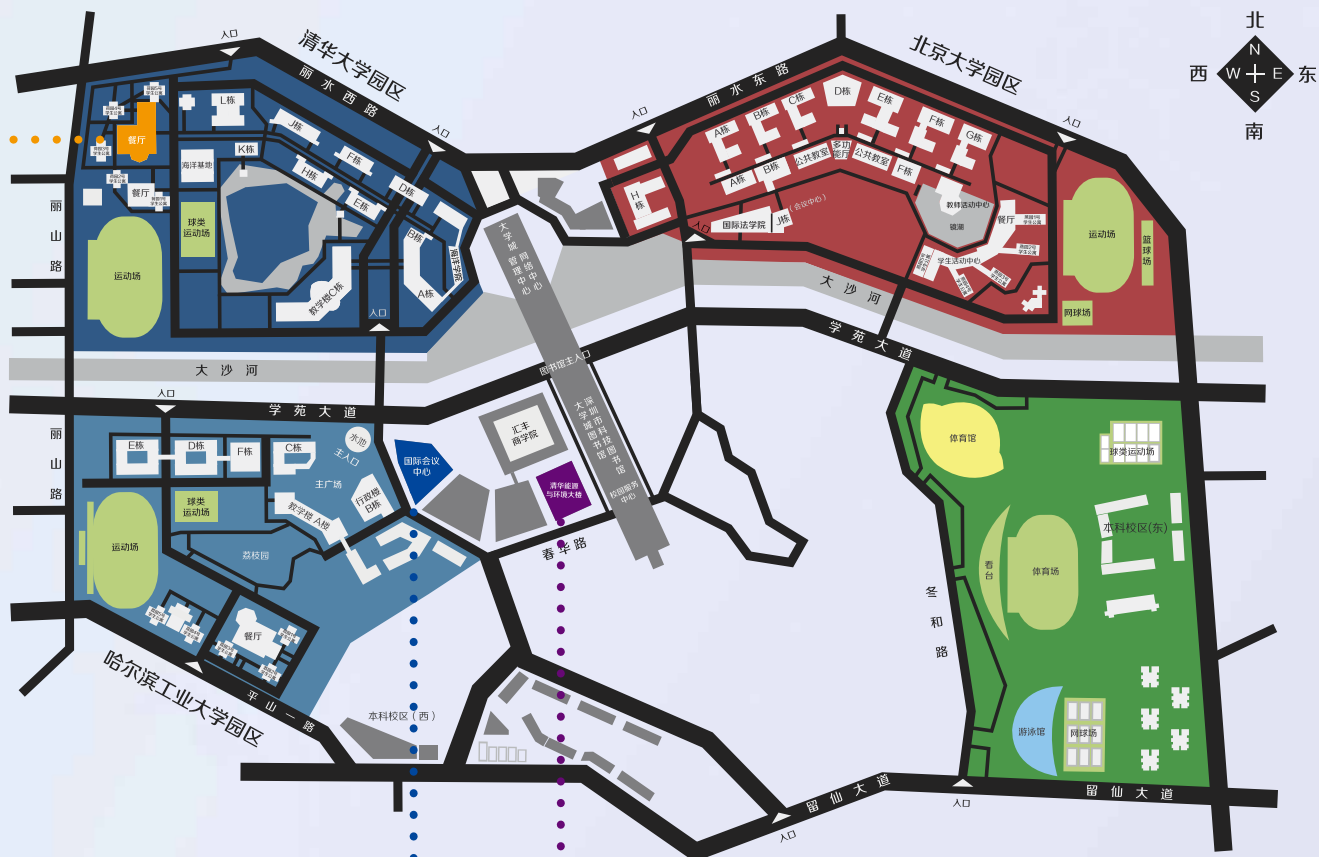
Session 6: Li-S batteries, metal-air batteries and flow batteries

Session 7: Aqueous batteries and supercapacitors

Session 8: New concepts and new device

Session 9: Battery recycling and utilization

Conference Venue Layout

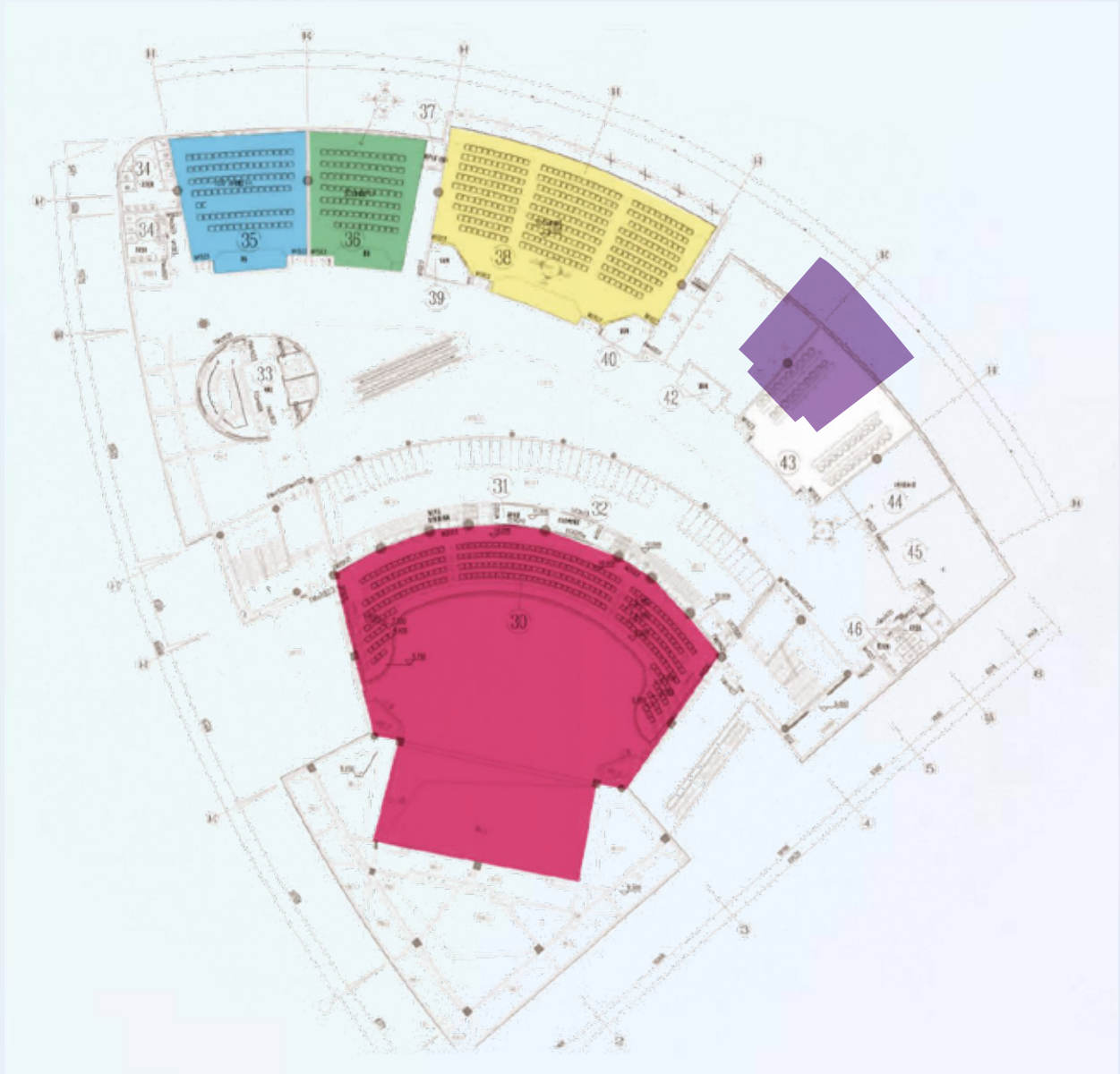







- 深圳大学城国际会议中心**
Shenzhen University Town International Conference Center
- 主会场**
Main Venue
 - 千人礼堂**
Auditorium, 2nd Floor
 - 分会五**
Session 5
 - 204多功能厅**
Multipurpose Hall 204, 2nd Floor
 - 分会六**
Session 6
 - 201会议室**
Conference Hall 201, 2nd Floor
 - 分会七**
Session 7
 - 207视频会议室**
Video Conference Room 207, 2nd Floor
 - 分会八**
Session 8
 - 202会议室**
Conference Hall 202, 2nd Floor

- 能源与环境大楼**
Energy and Environment Building
- 分会一**
Session 1
 - 503室**
Room 503, 5th Floor
 - 分会二**
Session 2
 - 504室**
Room 504, 5th Floor
 - 分会三**
Session 3
 - 502室**
Room 502, 5th Floor
 - 分会四**
Session 4
 - 501室**
Room 501, 5th Floor
 - 分会九**
Session 9
 - 104报告厅**
Conference Hall 104, 1st Floor

深圳大学城荷园一食堂-快乐食间
University Town of Shenzhen No.1 Cafeteria of Lotus Garden

Conference Venue Layout



- | | | | |
|---|---------------------|---|-----------------------|
|  | Auditorium |  | Conference Hall 201 |
|  | Conference Hall 202 |  | Multipurpose Hall 204 |
|  | Conference Hall 207 | | |

Service Information

Registration

1. Time: 14:00-18:00, 13 April, 2023 / 08:00-18:00, 14 April, 2023

2. Address: 1st Floor of Shenzhen University Town International Conference Center

Attendees can get conference materials, including attending badges, conference handbook and dining coupons, etc. at the registration desk

Location for Exhibition and Poster

Site for Exhibition:

Lobby, The first floor lobby and mezzanine lobby of the University City Conference Center

Site for Poster:

Corridor on the second floor of the University City Conference Center

Time and Location for Meal

Theme	Time	Site
Dinner Buffet (Only for Guest)	18:00-20:00, 13 April, 2023	Sheraton Bolin Tianrui Hotel Shenzhen
Lunch Buffet	12:00-13:30, 14 April, 2023	2 nd Floor, University Town of Shenzhen No.1 Cafeteria of Lotus Garden
Dinner Buffet (Only for Guest)	18:00-19:00, 14 April, 2023	2 nd Floor, University Town of Shenzhen No.1 Cafeteria of Lotus Garden
Lunch Buffet	12:00-13:30, 15 April, 2023	2 nd Floor, University Town of Shenzhen No.1 Cafeteria of Lotus Garden
Banquet	18:00-20:00, 15 April, 2023	2 nd Floor Kylin Hall, Kyin Villa
Lunch Buffet	12:00-13:30, 16 April, 2023	2 nd Floor, University Town of Shenzhen No.1 Cafeteria of Lotus Garden

Service Information

Vehicle Arrangement

Date	Time	Specific itinerary arrangement
14th, April	12:00,12:10,12:20,12:30 12:40,12:50,13:00	Shenzhen University City International Conference Center- ➡ No.1 Cafeteria of Lotus Garden (round-trip)
15th, April	12:00,12:10,12:20,12:30 12:40,12:50,13:00	Shenzhen University City International Conference Center- ➡ Shenzhen University City Tsinghua Happy Restaurant (round-trip)
	18:20	Shenzhen University City International Conference Center ➡ Shenzhen Kylin Villa
	20:30,20:40	Shenzhen Kylin Villa ➡ Shenzhen Bolin Tianrui Sheraton Hotel ➡ Vienna Hotel (Shenzhen University City Branch) ➡ Huali Liyu Service Apartment (Shenzhen University City Store) ➡ Shenzhen Jingfeng Hotel
16th, April	12:00,12:10,12:20,12:30 12:40,12:50,13:00	Tsinghua SIGS Energy and Environment Building ➡ Shenzhen University City International Conference Center ➡ Shenzhen University City Tsinghua Happy Restaurant (round-trip)
	18:00	Shenzhen University City International Conference Center ➡ Shenzhen Baoan Airport / Shenzhen North Station

Service Information

Meeting Notice

1. Please take care of all the materials delivered by organizing committee, including attendee badges, conference handbook, etc. Replacement is not possible if lost.
2. During the forum, please wear the included Forum Pass (badge) with you.
3. During the forum, please turn your mobile phone to vibration mode during the forum.
4. Any questions during the conference please contact the Meeting Affair Service of the organizing committee.

Conference Venue Wi-Fi

Account: UTSZ-Guest

Password: Mobile SMS authentication

Due to the bandwidth limit, the Wifi speed may be slow when it is fully loaded.

Symposium Secretariat

Zhexu Zhang Tsinghua Shenzhen International Graduate School, China

Tel: 18038109461 (wechat)

email: graphene@sz.tsinghua.edu.cn

ensm@sz.tsinghua.edu.cn

Conference services

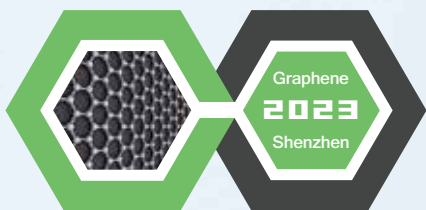
Lixia LIN

Tel: 13510491207 (wechat)

Zhexi Liu

Tel: 18562667450 (wechat)

Conference Committee



Organization

Main Organizers

Shenzhen Science Technology and Innovation Commission
The People's Government of Nanshan District, Shenzhen

Organizers

Tsinghua Shenzhen International Graduate School
Institute of Metal Research, CAS
Institute of Technology for Carbon Neutrality, Shenzhen Institute of Advanced Technology, CAS
Shenzhen Geim Graphene Center

Co-Organizers

Guangdong Graphene Innovation Center
Shenzhen Institutes of Advanced Technology
Advanced Battery Materials Industry Cluster
Shenzhen Power Supply Technology Society
National Technical Standard Innovation Base of Shenzhen
Shenzhen X9 Alliance of Universities and Institutes around X-Lake Sciensity

Supporters

Development and Reform Commission of Shenzhen Municipality
Industry and Information Technology Bureau of Shenzhen Municipality
Shenzhen Science and Technology Association

Conference Committee



Organization

Main Organizers

Tsinghua Shenzhen International Graduate School

Institute of Metal Research, CAS

Shenzhen Geim Graphene Center

Co-Organizers

Elsevier B.V.

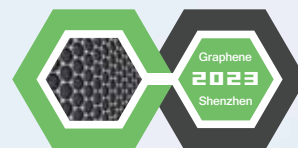
Institute of Technology for Carbon Neutrality, Shenzhen Institute of Advanced Technology, CAS

Shenzhen Institutes of Advanced Technology

Advanced Battery Materials Industry Cluster

Shenzhen X9 Alliance of Universities and Institutes around X-Lake Sciensity

Program Committee



Chairmen

Prof. Hui-Ming Cheng Shenzhen Institutes of Advanced Technology, China, Institute of Metal Research, CAS, Shenzhen Geim Graphene Center, China

Prof. Feiyu Kang Tsinghua Shenzhen International Graduate School, China, Shenzhen Geim Graphene Center, China

Chairs

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Prof. Quan-Hong Yang Tianjin University, China

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Prof. Bilu Liu Tsinghua Shenzhen International Graduate School, China

Prof. Dongming Sun Institute of Metal Research, CAS, China

Prof. Ruitao Lv Tsinghua University, China

Prof. Xiaomin Xu Tsinghua Shenzhen International Graduate School, China

Prof. Chang Liu Institute of Metal Research, CAS, China

Prof. Ling Qiu Tsinghua Shenzhen International Graduate School, China

Prof. Yang Su Tsinghua Shenzhen International Graduate School, China

Prof. Baohua Li Tsinghua Shenzhen International Graduate School, China

Prof. Wei Lv Tsinghua Shenzhen International Graduate School, China

GM Xianying Qin Shenzhen Graphene Innovation Center Company, Limited, China

GM Qinwei Wei Shenzhen Matterene Technology Company, Limited (MATTERENE), China

Symposium Secretariat

Zhexu Zhang Tsinghua Shenzhen International Graduate School, China

Tel: 18038109461 (wechat)

email: graphene@sz.tsinghua.edu.cn

Program Committee



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Prof. Hui-Ming Cheng Shenzhen Institutes of Advanced Technology, China, Institute of Metal Research, CAS, Shenzhen Geim Graphene Center, China

Prof. Feiyu Kang Tsinghua Shenzhen International Graduate School, China, Shenzhen Geim Graphene Center, China

Chairs

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Prof. Yan-Bing He Tsinghua Shenzhen International Graduate School, China

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Prof. Guanglei Cui Qingdao Institute of Biomass Energy and Bioprocess Technology, CAS, China

Prof. Liumin Suo Institute of Physics, CAS, China

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Prof. Yang Bai Shenzhen Institutes of Advanced Technology, China

Prof. Baohua Li Tsinghua Shenzhen International Graduate School, China

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Symposium Secretariat

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email: ensm@sz.tsinghua.edu.cn

Conference Agenda

Auditorium, 2nd Floor of Shenzhen University Town Conference Center

Day 1: Opening Ceremony & IFGSZ Plenary Lecture

Time: 08:30-12:00, Friday Morning, 14 April, 2023	
Time	Activities
Chairman: Prof. Hui-Ming Cheng	
08:30-09:00	Opening Ceremony
09:00-09:45	Plenary: Konstantin Novoselov, <i>National University of Singapore, Singapore</i> Materials for the Future
09:45-10:25	Plenary: Dan Li, <i>The University of Melbourne, Australia</i> Electrifying Electrolyte-Infused Graphene Membranes: Insights for Future Ionotronics
10:25-10:50	Group Photo & Coffee Break
Chairman: Prof. Bilu Liu	
10:50-11:35	Plenary: Kian Ping Loh, <i>The Hong Kong Polytechnic University, China</i> Engineering Nanospace using 2D Polymer and 2D Covalent Organic Framework
11:35-12:20	Plenary: Xinliang Feng, <i>Technische Universität Dresden, Germany</i> Advances in Organic 2D Crystals — From On-Water Surface Chemistry to Functional Applications
12:00-13:00	Lunch

Day 1: IFGSZ Plenary Lecture

Time: 13:30-17:30, Friday Afternoon ,14 April, 2023	
Time	Activities
Chairman: Prof. Wencai Ren	
13:30-14:15	Plenary: Xinran Wang, Nanjing University, China 2D Semiconductors for Future Computing
14:15-15:00	Plenary: Yuliang Li, Institute of Chemistry Chinese Academy of Sciences, China Overview of Research Progress in Two-dimensional Carbon-graphdiyne
15:00-15:45	Plenary: Andrea C. Ferrari, University of Cambridge, England Graphene and Layered Materials for Photonics and Optoelectronics
15:45-16:15	Coffee Break
Modulator: Prof. Feiyu Kang	
16:15-17:45	Round Table - Future Graphene and Energy Storage Materials Industry Dialogue Session Dialogue Guest: Yanwu Zhu, University of Science and Technology of China Shifeng Hou, Shandong Lite Nanotechnology Co., Ltd., China Xinhua Zhou, Shenzhen CLOU Electronics Co. Ltd., China Yu Bai, Shenzhen XFH Technology Co., Ltd., China Jin Wu, Shenzhen Cubic-Science Technology Co., Ltd., China Shaoxin Zhou, SMOTermal Management Material and Technology Co., Ltd., China

Auditorium, 2nd Floor of Shenzhen University Town Conference Center

Day 2: Opening Ceremony & ICEnSM Plenary Lecture

Time: 08:30-12:00, Saturday Morning, 15 April, 2023	
Time	Activities
Chairman: Prof. Feiyu Kang	
08:30-09:15	Plenary: Chaoyang Wang, <i>The Pennsylvania State University, USA</i> Heat-Tolerant Battery for Electric Vehicles and Its Implications for Materials Development
09:15-09:45	Keynote: Feng Lin, EnSM Young Scientist Award 2020, <i>Virginia Polytechnic Institute and State University, USA</i> Characterization and Regulation of Metal Dissolution and Redeposition Dynamics near Operating Electrode Surfaces
09:45-10:15	Keynote: Yijin Liu, EnSM Young Scientist Award 2022, <i>Stanford Linear Accelerator Center National Accelerator Laboratory, USA</i> A Macro-to-nano Zoom Through a Real-world Battery with X-ray Vision
10:15-10:45	Coffee Break
Chairman: Prof. Guangmin Zhou	
10:45-11:30	Plenary: Feng Pan, <i>Peking University Shenzhen Graduate School, China</i> Exploring Material Genes and Structure Chemistry in Li-ion Batteries
11:30-12:15	Plenary: Yongyao Xia, <i>Fudan University, China</i> Secondary Lithium Batteries Worked at Low Temperature
12:00-13:00	Lunch

Day 2: Awardees' Lecture & Awarding Ceremony

Time: 13:30-17:30, Saturday Afternoon, 15 April, 2023

Time	Activities
EnSM Awardees' Lectures Chairman: Prof. Hui-Ming Cheng	
13:30-13:55	EnSM Awarding Ceremony
13:55-14:15	Plenary: Yoshino Akria, EnSM Achievement Award 2020, Global Zero Emission Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Japan Brief History and Future of Lithium-ion Battery
14:15-15:00	Plenary: Yang-Kook Sun, EnSM Achievement Award 2022, Hanyang University, Korea High-Capacity Ni-rich Cathode Materials for Electric Vehicles
15:00-15:45	Plenary: Feng Wu, EnSM Achievement Award 2021, Beijing Institute of Technology, China Developing High-Efficient Energy Storage Materials and Devices
15:45-16:00	Coffee Break
Chairman: Prof. Hui-Ming Cheng	
16:00-16:30	Keynote: Ho Seok Park, EnSM Young Scientist Award 2020, Sungkyunkwan University, Korea Surface Chemistry of 2D Black Phosphorus for Energy Storage
16:30-17:00	Keynote: Minghao Yu, EnSM Young Scientist Award 2021, Technische Universität Dresden, Germany High-Kinetics Energy Storage Enabled by 2D Layered Materials

17:00-17:30	Keynote: Wei Lv, EnSM Young Scientist Award 2021, Tsinghua <i>Shenzhen International Graduate School, China</i> Catalysis and Catalyst Design for Lithium-Sulfur Batteries
17:30-18:00	Keynote: Jia-Qi Huang, EnSM Young Scientist Award 2022, <i>Beijing Institute of Technology, China</i> Advanced Interface Design in Lithium Metal Batteries
18:00-18:10	IFGSZ & ICEnSM Excellent Poster Awarding Ceremony
18:30-20:30	Banquet for all registered participants

**Room 503, 5th Floor of Tsinghua SIGS Energy and
Environment Building**

Day 3: Session 1: Preparation of graphene and 2D materials

Time: 08:30-12:00, Sunday Morning, 16 April, 2023

Time	Activities
Chairman: Prof. Xiaolong Zou	
08:30-09:00	Keynote: Hailin Peng, <i>Peking University, China</i> High-mobility 2D Semiconductor Integrated with High-<i>k</i> Native Oxide
09:00-09:30	Keynote: Xiaoyan Zhang, <i>Chalmers University of Technology, Sweden</i> Organic functionalization of 2D materials
09:30-10:00	Keynote: Lain-Jong Li, <i>University of Hong Kong, China</i> Perspectives on 2D Semiconductor-Based Devices and Circuits
10:00-10:15	Invited: Fengxia Geng, <i>Soochow University, China</i> Delamination of Non-van der Waals Structures towards Two-Dimensional Crystals
10:15-10:45	Coffee Break
Chairman: Prof. Hailin Peng	
10:45-11:15	Keynote: Zheng Liu, <i>Nanyang Technological University, Singapore</i> 2D Materials Engineering: from Single Domain, Superlattice, Many Domains to Amorphous
11:15-11:45	Keynote: Qunfeng Cheng, <i>Beihang University, China</i> High Performance Carbon-based Nanocomposites
11:45-12:00	Invited: Teng Ma, <i>The Hong Kong Polytechnic University, China</i> Layer-controlled Growth of 2D Ferroelectric MoTe₂ with Strong Nonlinear Hall Effect
12:00-12:15	Invited: Liwei Liu, <i>Beijing Institute of Technology, China</i> Low-dimensional NbSe₂ with CDW Superstructures —a Versatile Platform for Exploring Quantum Phenomena

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Xiaolong Zou	
13:30-14:00	Keynote: Kaihui Liu, <i>Peking University, China</i> Designed Growth of Stacked Graphene
14:00-14:30	Keynote: Yongji Gong, <i>Beihang University, China</i> Synthesis of 2D Materials and Their Properties Tuning
14:30-15:00	Keynote: Yanwu Zhu, <i>University of Science and Technology of China</i> Atomically Precise Preparation, Characterization and Application of Carbon Nanomaterials
15:00-15:30	Coffee Break
Chairman: Prof. Yanwu Zhu	
15:30-16:00	Keynote: Gottfried, J. Michael, <i>Philipps-Universität Marburg, Germany</i> Beyond Graphene: On-Surface Synthesis Unlocks New Carbon Allotropes
16:00-16:15	Oral: Qing Zhang, <i>Institute of Metal Research, CAS, China</i> Fabrication of High-quality Graphene Films and Mechanism of Graphitization Promoted by Lattice Defects
16:15-16:30	Oral: Yifan Sun, <i>Shanghai Jiao Tong University, China</i> Two-Dimensional Colloidal Nanostructures of Transition Metal Dichalcogenides
16:30-16:45	Oral: Zhengwei Zhang, <i>Central South University, China</i> Controllable Synthesis of Two-dimensional Heterojunctions

**Room 504, 5th Floor of Tsinghua SIGS Energy and
Environment Building**

Day 3: Session 2: Device applications for graphene and 2D materials

Time: 08:30-12:00, Sunday Morning, 16 April, 2023	
Time	Activities
Chairman: Dr. Qiangmin Yu	
08:30-09:00	Keynote: Yeliang Wang, <i>Beijing Institute of Technology, China</i> Wafer-scale Single-crystal 2D Semiconductor MoTe₂ Synthesized by the Controllable Phase Transition
09:00-09:30	Keynote: Zhiyuan Zeng, <i>City University of Hong Kong, China</i> Electrochemical Lithium Intercalation & Exfoliation in 2D TMDs and its In-situ studies
09:30-10:00	Keynote: Yuanyue Liu, <i>University of Texas at Austin, USA</i> Carrier Transport in 2D Materials: Understandings and Predictions from First Principles
10:00-10:20	Invited: Yuting Luo, <i>University of Toronto, Canada</i> Two-Dimensional Molybdenum Disulfide for Mechanistic Study and High-Current-Density Water Splitting
10:20-10:45	Coffee Break
Chairman: Prof. Xiaomin Xu	
10:45-11:15	Keynote: Qian Miao, <i>The Chinese University of Hong Kong, China</i> Curved Molecular Nanocarbons and Supramolecular 2D Materials for Electronic Devices
11:15-11:45	Keynote: Yu Ye, <i>Peking University, China</i> Two-dimensional Semiconductor towards Inter-tier Interconnection Integrated Circuits
11:45-12:15	Keynote: Jiadong Zhou, <i>Beijing Institute of Technology, China</i> Synthesis and properties of novel 2D materials

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Dong-Ming Sun	
13:30-14:00	Keynote: Jian-Bin Xu, The Chinese University of Hong Kong, China Light-Matter Interplay in the Exciton-Photon Hybrid Systems in 2D Motifs
14:00-14:30	Keynote: Yang Chai, The Hong Kong Polytechnic University, China In-sensor Computing for Artificial Vision
14:30-15:00	Keynote: Jiong Lu, National University of Singapore Linking Atomic-scale Investigations in 2D Materials with Macroscopic-scale Devices via Gate-tunable STM/AFM
15:00-15:30	Coffee Break
Chairman: Prof. Jian-Bin Xu	
15:30-16:00	Keynote: Jiong Zhao, The Hong Kong Polytechnic University, China Precise Phase Engineering on Two-Dimensional Ferroic Chalcogenides
16:00-16:20	Invited: Simin Feng, Suzhou Institute of Nano-Tech and Nano-Bionics, CAS, China Conductive Metal-Organic Framework Nanosheets towards Fast Responsive Ionic Soft Actuator
16:20-16:40	Invited: Honggang Gu, Huazhong University of Science and Technology, China Advanced Spectroscopic Ellipsometry for Low-dimensional Materials
16:40-17:00	Invited: Qingliang Feng, Northwestern Polytechnical University, China Controlled Growth of Two-dimensional Materials towards All-time Photodetection
17:00-17:12	Oral: Xiangdong Yang, Ningbo University of Technology, China Wafer-Scale van der Waals Integration of 2D Electronics
17:12-17:24	Oral: Xuan Song, Beijing Institute of Technology, China Atomic-Resolution, Reversible Transformation and Layered Electron States of Chiral Charge Density Waves

**Room 502, 5th Floor of Tsinghua SIGS Energy and
Environment Building**

Day 3: Session 3: Other applications for graphene and 2D materials

Time: 08:30-12:00, Sunday Morning, 16 April, 2023

Time	Activities
Chairman: Prof. Jun Yin	
08:30-09:00	Keynote: Guqiao Ding, Shanghai Institute of Microsystem and Information Technology, China Research Progress of Highly Thermal Conductive Graphene Films
09:00-09:30	Keynote: Ming Xu, Huazhong University of Science and Technology, China Structural Design of Multifunctional Nanocarbon Materials for Extreme-environmental Applications
09:30-10:00	Keynote: Pengzhan Sun, University of Macau, China Limits on Gas Impermeability of Graphene
10:00-10:15	Invited: Qingbin Zheng, The Chinese University of Hong Kong, China Anisotropic Carbon Networks for Multidimensional Sensing
10:15-10:45	Coffee Break
Chairman: Prof. Ming Xu	
10:45-11:15	Keynote: Jun Yin, Nanjing University of Aeronautics and Astronautics, China Probing Van der Waals Interactions of 2D systems
11:15-11:45	Keynote: Sheng Hu, Xiamen University, China Mass Transport at Nanoscale for Osmotic Power Generation
11:45-12:00	Oral: Yong Chen, Foshan University, China Three-Dimensional Porous Graphene as Pt-Based Catalyst Support for Enhancing the Alkaline Hydrogen Evolution
12:00-12:15	Oral: Jing Li, University of Shanghai for Science and Technology, China Nano-Bionics, CAS, China Highly Conductive Anticorrosive Graphene Coatings on Stainless Steel Bipolar Plates

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Yang Su	
13:30-14:00	Keynote: Gongping Liu, Nanjing Tech University, China Graphene-based Membranes for Water Desalination: from Hydrophilic Channels to Hydrophobic Channels
14:00-14:30	Keynote: Chunyi Zhi, City University of Hong Kong, China Mxene: Synthesis and Unusual Physical and Chemical Properties
14:30-15:00	Keynote: Cheng-Te Lin, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China Carbon-Based Thermal Management Materials for Electronic Packaging
15:00-15:30	Coffee Break
Chairman: Prof. Ling Qiu	
15:30-16:00	Keynote: Zhuang Liu, Sichuan University, China Two-dimensional Membranes for Ion Separation
16:00-16:15	Invited: Zhiyuan Xiong, South China University of Technology, China Ion-specific Nanoconfinement Effect in Multilayered Graphene Membranes
16:15-16:30	Invited: Qinghua Liang, Ganjiang Innovation Academy, CAS, China Probing Nanoconfined Ion Transport in Electrified 2D Laminate Membranes with Electrochemical Impedance Spectroscopy
16:30-16:45	Invited: Minshu Liu, Monash University, Australia, Monash University, Suzhou SIP, China Advanced Materials for Thermal Management
16:45-17:00	Oral: Jincheng Li, Kunming University of Science and Technology, China Atomically Dispersed Fe/Co-N-C and Their Composites for Fuel Cells and Zn-Air Batteries

**Room 501, 5th Floor of Tsinghua SIGS Energy and
Environment Building**

**Day 3: Session 4: Industrial development of graphene and
energy storage materials**

Time: 08:30-12:00, Sunday Morning, 16 April, 2023

Time	Activities
Chairman: Prof. Hongda Du	
08:30-09:00	Keynote: Mingdong Zhang , <i>Shenzhen Distinta Interfacial Technology Co., Ltd., China</i> Application of Highly Conductive Water-based Paste in Electronic Products
09:00-09:30	Keynote: Shifeng Hou , <i>Shandong Agricultural University, Shandong Leadernano Co., Ltd., China</i> The Separation of Chiral Molecules through Functional Graphene oxide Membrane
09:30-10:00	Keynote: Long Zhang , <i>Changchun University of Technology, China</i> Viscosity-alleviation and Heat Transfer Enhancement of Graphene on Its Water-based Nanofluid in Static and Flow Environment
10:00-10:15	Invited: Quan Li , <i>Shenzhen XFH Technology Co., Ltd., China</i> Progress on the Mildly Expanded Graphite for Anodes Materials of Lithium-ion Batteries
10:15-10:45	Coffee Break
Chairman: Prof. Shifeng Hou	
10:45-11:15	Keynote: Daping He , <i>Wuhan University of Technology, China</i> Graphene Assembled Film Based Radio Frequency Electronics and Industrialization
11:15-11:45	Keynote: Yuanxin (Lorris) Wan , <i>Shenzhen Dynanonic Co., Ltd., China</i> Application of Lithium Supplement in LiFePO₄ Energy Storage Batteries
11:45-12:15	Keynote: Hongda Du , <i>Tsinghua Shenzhen International Graduate School, Kaifeng Pingmei New Carbon Materials Technology Co. Ltd., China</i> Cost Reduction of Graphene Membrane Graphitization

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Daping He	
13:30-14:00	Keynote: Li Lin, Peking University, Beijing Graphene Institute, China Crack- and Contamination-free Transfer of Graphene Single Crystals
14:00-14:30	Keynote: Jianxing Wang, Guangdong One Nano Technology Co., Ltd., China High Quality Graphene Composite Conductive Agent Helps the Development of Energy Storage Applications
14:30-15:00	Keynote: Daliang Han, Tianjin University, China Nonflammable Hydrous Organic Electrolytes for Zinc Batteries
15:00-15:30	Coffee Break
Chairman: Dr. Xianying Qin	
15:30-16:00	Keynote: Wei Wei, ZHIWEI New Energy (Changzhou) Co., Ltd., China Micro-silicon/carbon anodes with practical significance
16:00-16:15	Invited: Liangzhen Long, Graphene New Materials Technologies Inc., China GNM Medical Breakthroughs & Strategies on Graphene Material
16:15-16:30	Invited: Fang-Yuan Su, Institute of Coal Chemistry, CAS, China Toward Data-Driven Applications in Carbon Materials for Energy Storage Devices

**Multipurpose Hall 204, 2nd Floor of Shenzhen University Town
Conference Center**

Day 3: Session 5: Alkali metal batteries

Time: 08:30-12:00, Sunday Morning, 16 April, 2023	
Time	Activities
Chairman: Prof. Shaoming Huang	
08:30-09:00	Keynote: Naoaki Yabuuchi, Yokohama National University, Japan Electrode Materials Made from Abundant Elements for Sodium Batteries
09:00-09:30	Keynote: Xin Li, Harvard University, USA Electrochemical Structure Evolution in Layered Na_xTMO₂
09:30-10:00	Keynote: Byoungwoo Kang, Pohang University of Science and Technology, Korea Developing Electrode Materials for Li-ion batteries: High Rate Capability in Polyanion Materials
10:00-10:15	Invited: Ming Liu, Tsinghua Shenzhen International Graduate School, China A Direct View on Li-ion Transport and Li-metal Plating in Solid State Electrolytes
10:15-10:45	Coffee Break
Chairman: Prof. Ming Liu	
10:45-11:15	Keynote: Shaoming Huang, Guangdong University of Technology, China

	Design, Fabrication and Performances of Key Materials for Lithium Metal Batteries
11:15-11:30	Invited: Yinguo Xiao, Peking University Shenzhen Graduate School, China Unveiling the Migration Behavior of Lithium Ions in NCM/Graphite Full Cell via in Operando Neutron Diffraction
11:30-11:45	Invited: Zhizhen Zhang, Sun Yat-sen University, China Exploiting the Paddle-Wheel Mechanism for the Design of Fast Ion Conductors
11:45-12:00	Oral: Yidan Cao, Tsinghua Shenzhen International Graduate School, China Approaches Towards High-Energy-Density Anode-Free Lithium Battery by Interfacial Manipulation
12:00-12:15	Oral: Qi Liu, Hunan University, China Structure and Functional Design of Solid-State Electrolyte

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023

Time	Activities
Chairman: Prof. Yan-Bing He	
13:30-13:45	Invited: Jian-Gan Wang, Northwestern Polytechnical University, China Building high-performance Na-ion batteries
13:45-14:00	Invited: Zhiqiang Shi, Tianjin Polytechnic University, China Revisiting Electrolyte Kinetics Differences in Sodium Ion Battery: Are Esters Really Inferior to Ethers?
14:00-14:30	Keynote: Laurence Croguennec, Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB), French New Vanadium Phosphates as Positive Electrode Materials for Na-ion and K-ion batteries
14:30-14:45	Oral: Yan-Fei Huang, Shenzhen University, China Relaxor Ferroelectric Polymer with Ultrahigh Dielectric Constant Largely Promotes the Dissociation of Lithium Salts to Achieve High Ionic Conductivity
14:30-14:45	Oral: Deping Li, Harbin Institute of Technology, Shenzhen, China Carbon-based Composites for K ion Battery Applications
14:45-15:00	Oral: Jiabin Ma, Tsinghua Shenzhen International Graduate School, China Activating the Room Temperature Performance of Solid-State Lithium Batteries
15:00-15:30	Coffee Break
Chairman: Prof. Yong-Sheng Hu	
15:30-15:45	Oral: Ying Wang, Fudan University, China Development of solid-state Li-metal battery using polymer and Al
15:45-16:15	Keynote: Philipp Adelhelm, Friedrich Schiller University Jena, Germany Inorganic Electrodes for Sodium-ion Batteries
16:15-16:45	Keynote: Robert Dominko, National Institute of Chemistry, Slovenia University of Ljubljana, Slovenia Reliability of Li Metal Protection Layers

**Conference Hall 201, 2nd Floor of Shenzhen University Town
Conference Center**

Day 3: Session 6: Li-S batteries, metal-air batteries and flow batteries

Time: 08:30-12:00, Sunday Morning, 16 April, 2023	
Time	Activities
Chairman: Prof. Qiang Zhang	
08:30-09:00	Keynote: Donghai Wang, <i>The Pennsylvania State University, USA</i> Development of Material for High Energy Density Li – Sulfur Batteries
09:00-09:30	Keynote: Jun Lu, <i>Argonne National Laboratory, USA</i> Understanding Metals' Roles in Layered Structure Oxides for High-Energy Lithium-Ion Batteries
09:30-10:00	Keynote: Zaiping Guo, <i>The University of Adelaide, Australia</i> Toward Stable Lithium–Sulfur Batteries with High Energy Density
10:00-10:15	Invited: Gang Huang, <i>Changchun Institute of Applied Chemistry, CAS, China</i> Lithium-Anode Protection in Li-Air Batteries
10:15-10:45	Coffee Break
Chairman: Prof. Jun Lu	
10:45-11:15	Keynote: Jiulin Wang, <i>Xinjiang University, China</i> Electrochemical Polymerization of Nonflammable Electrolyte Enabling Fast-Charging Lithium-Sulfur Battery
11:15-11:45	Keynote: Shubin Yang, <i>Beijing University of Aeronautics and Astronautics, China</i> Scaleable Production of MXenes for High Energy Lithium Metal Batteries
11:45-12:00	Invited: Xiao Zhao, <i>Jilin University, China</i> In-situ Dynamic Characterization of Oxygen Reduction Interfaces
12:00-12:15	Invited: Peng Tan, <i>University of Science and Technology of China</i> Investigation on Transport Issues in Zn-air Batteries

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Quanquan Pang	
13:30-14:00	Keynote: Jieshan Qiu, Beijing University of Chemical Technology, China Carbon-Hybridized Hydroxides for Energy Conversion and Storage
14:00-14:30	Keynote: Yiwang Chen, Jiangxi Normal University, Nanchang University, China Crucial Technologies of Wide Voltage Aqueous Supercapacitors
14:30-15:00	Keynote: Guang Feng, Huazhong University of Science and Technology, China Molecular Simulation Study of Ionic-liquid-based Supercapacitors
15:00-15:30	Coffee Break
Chairman: Prof. Guang Feng	
15:30-16:00	Keynote: Quanquan Pang, Peking University, China Sulfur electrochemistry and its use in rechargeable batteries
16:00-16:15	Invited: Wei Guo, Zhengzhou University, China Organic-Inorganic Composite Materials for Rechargeable Lithium
16:15-16:30	Oral: Haodong Shi, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China Design of Three-Dimensional Structured Lithium Metal Anodes

	and Their Applications in High-Energy-Density Batteries
16:30-16:45	Oral: Huicong Yang, <i>Institute of Metal Research, CAS, China</i> Modifying kinetics of electrode-electrolyte interface reaction by solvent-solute interactions
16:45-17:00	Oral: Xia Wang, <i>Max-Planck-Institute for Chemical Physics of Solids, Germany</i> Developing Advanced Oxygen Electrocatalysts for Zinc Air Batteries: From Morphology Control to Atom Level Electronic Structure Manipulation
17:00-17:15	Oral: Li Wang, <i>Tianjin University, China</i> Rational Design of Manganese-Based Mullite Electrocatalysts for Lithium-Sulfur Batteries
17:15-17:30	Oral: Xiang Chen, <i>Tsinghua University, China</i> An Electrocatalytic Model of the Sulfur Reduction Reaction in Lithium–Sulfur Batteries

**Video Conference Room 207, 2nd Floor of Shenzhen
University Town Conference Center**

Day 3: Session 7: Aqueous batteries and supercapacitors

Time: 08:30-12:00, Sunday Morning, 16 April, 2023	
Time	Activities
Chairman: Prof. Huilin Pan	
08:30-09:00	Keynote: Sang-Young Lee, Yonsei University, Korea Nanoprinted Artistic Supercapacitors
09:00-09:30	Keynote: Xiulei Ji, Oregon State University, USA Reversible Proton Storage: A Path to Diffusion-Free Ion Battery
09:30-10:00	Keynote: Fei Wang, Fudan University, China High Energy Zn Batteries Based on the Electrolyte and Interface Regulation
10:00-10:15	Invited: Cheng Yang, Tsinghua Shenzhen International Graduate School, China High-frequency Supercapacitors Based on Laser Processing: Principles, Methods and Devices
10:15-10:45	Coffee Break
Chairman: Prof. Cheng Yang	
10:45-11:15	Keynote: Juchen Guo, University of California, Riverside, USA Electrolytes for Rechargeable Aluminum Batteries
11:15-11:45	Keynote: Huilin Pan, Zhejiang University, China Stabilizing Zn Anodes via Tailored Interface in Aqueous Systems
11:45-12:00	Invited: Linfeng Hu, Southeast University, China Novel Layered, Hydrated Phosphates for High-voltage Aqueous Zinc-ion Battery Applications
12:00-12:15	Invited: Dong Zhou, Tsinghua Shenzhen International Graduate School, China In Purity of Compatible Electrolytes for Rechargeable Aqueous/Multivalent-ion Batteries

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Dongliang Chao	
13:30-14:00	Keynote: Yonggang Wang, Fudan University, China Organic Electrodes-based Rechargeable Batteries
14:00-14:30	Keynote: Yi-Chun Lu, The Chinese University of Hong Kong, China Material Designs for High-Performance Aqueous Battery Systems
14:30-15:00	Keynote: Jingwen Zhao, Qingdao Institute of Biomass Energy and Bioprocess Technology, CAS, China Weak Hydrogen Bonding for Wide-window Aqueous Electrolytes
15:00-15:30	Coffee Break
Chairman: Prof. Jingwen Zhao	
15:30-16:00	Keynote: Jiang Zhou, Central South University, China The Key Materials of Rechargeable Zinc Batteries
16:00-16:30	Keynote: Dongliang Chao, Fudan University, China Zn Electrochemistry towards Energetic Aqueous Battery
16:30-17:00	Keynote: Zhe Weng, Tianjin University, China Interfacial Engineering for Highly Reversible Zn anodes
17:00-17:15	Invited: Zifeng Lin, Sichuan University, China Pseudocapacitive Charge Storage of MXene in Aqueous Electrolytes
17:15-17:30	Invited: Ying Tao, Tianjin University, China Gelation and Densification of 2D Materials Towards Compact and Ultrafast Supercapacitors

**Conference Hall 202, 2nd Floor of Shenzhen University Town
Conference Center**

Day 3: Session 8: New concepts and new device

Time: 08:30-12:00, Sunday Morning, 16 April, 2023

Time	Activities
Chairman: Prof. Lijie Ci	
08:30-09:00	Keynote: Liqiang Mai, Wuhan University of Technology, China One Dimensional Nanomaterials for Emerging Energy Storage
09:00-09:30	Keynote: An-Min Cao, Institute of Chemistry Chinese Academy of Sciences, China Precise Construction of Artificial Interface Layers for High Performance Secondary Batteries
09:30-09:45	Invited: Shuhong Jiao, University of Science and Technology of China Interfacial Regulation and Mechanism Study on Lithium Metal Batteries
09:45-10:00	Invited: Xiaoguang Yang, Beijing Institute of Technology, China Extreme Fast Charging of High-Energy Li-ion Batteries via Thermal Modulation
10:00-10:15	Invited: Wei Luo, Tongji University, China Interface Engineering of Solid-State Li Metal Batteries
10:15-10:45	Coffee Break
Chairman: Prof. Liqiang Mai	
10:45-11:15	Keynote: Lijie Ci, Harbin Institute of Technology, Shenzhen, China Investigation on the Stability of Metallic Lithium Metal Anode for Advanced Li-air Batteries
11:15-11:45	Keynote: Yan Yu, University of Science and Technology of China High Energy Density and Low-Cost Na-S Batteries
11:45-12:00	Invited: Zhan Lin, Guangdong University of Technology, China High Capacity Co-Free Li-rich Mn-Based Cathodes
12:00-12:15	Invited: Le Yu, Beijing University of Chemical Technology, China Design and Synthesis of Hollow Nanostructures for Electrochemical Energy Storage

Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Qiaobao Zhang	
13:30-14:00	Keynote: Haijun Yu, Beijing University of Technology, China High Energy Density and Low-Cost Aluminum-Sulfur batteries
14:00-14:30	Keynote: Han Hu, China University of Petroleum, China Petroleum Asphalt Derived Carbons for Energy Storage Applications
14:30-14:45	Invited: Guoxiu Wang, University of Technology Sydney, Australia Advanced Low-cost Batteries for Large-scale Energy Storage
14:45-15:00	Invited: Qiaobao Zhang, Xiamen University, China Designing and Understanding of High-Performance Si-Based Composite Anodes Through In Situ Transmission Electron Microscopy
15:00-15:30	Coffee Break
Chairman: Prof. Haijun Yu	
15:30-15:45	Invited: Jianmin Ma, Tiangong University, China Electrolyte Chemistry and Additive Innovation
15:45-16:00	Oral: Hongfei Li, Southern University of Science and Technology, China Aqueous Multivalent-ion Batteries: Design and Exploration
16:00-16:15	Oral: Gang Wang, Ningbo Institute of Materials Technology and Engineering, CAS, China Dual-ion Electrochemical Energy Storage: Fundamental and

	Devices
16:15-16:30	Oral: Cuiping Han, Shenzhen Institute of Advanced Technology, CAS, China Materials Design for High-Rate and Long-life Aqueous Zn Ion Battery and It's Interface Regulation
16:30-16:45	Oral: Wen Yang, Beijing Institute of Technology, China The Design of Semi-solid/Solid Super-ionic Conductors for High Energy and High Power Lithium Batteries
16:45-17:00	Oral: Qianqian Yao, Sun Yat-Sen University, China An Emerging Potassium Metal Capacitor

Conference Hall, 1st Floor of Tsinghua SIGS Energy and Environment Building

Day 3: Session 9: Battery recycling and utilization

Time: 08:30-12:00, Sunday Morning, 16 April, 2023	
Time	Activities
Chairman: Prof. Huayi Yin	
08:30-09:00	Keynote: Qing Wang, National University of Singapore Regenerative Oxidative Leaching for Spent LiFePO₄ Recycling
09:00-09:30	Keynote: Yansong Shen, The University of New South Wales, Australia Metallurgy engineering-inspired Process Design and Optimisation for Efficient Solar PV Recycling
09:30-10:00	Keynote: Li Li, Beijing Institute of Technology, China Carbon Neutrality Strategies for Sustainable Batteries: from Structure, Recycle, Property to Application
10:00-10:15	Invited: Wei Chen, University of Science and Technology of China Aqueous Rechargeable Hydrogen Gas Batteries
10:15-10:45	Coffee Break
Chairman: Prof. Li Li	
10:45-11:15	Keynote: Jiafeng Zhang, Central South University, China Efficient Regeneration of Retired LiFePO₄ Cathode by Combining Spontaneous and Electrically Driven Processes
11:15-11:45	Keynote: Huayi Yin, Northeastern University, China Electrochemical Recovery of Spent Lithium-ion Batteries
11:45-12:00	Invited: Panpan Xu, Suzhou Institute of Nano-Tech and Nano-Bionics, CAS, China Efficient Direct Recycling of Spent Lithium Ion Batteries Materials
12:00-12:15	Invited: Jialiang Zhang, University of Science and Technology Beijing, China Key Technology for the Multi-Elements Step Recovery and Harmless Disposal of Spent Lithium Ion Batteries

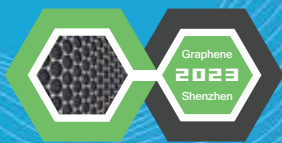
Time: 13:30-17:30, Sunday Afternoon, 16 April, 2023	
Time	Activities
Chairman: Prof. Fangyang Liu	
13:30-14:00	Keynote: Liang Shen, Jilin University, China High Performance Organic/perovskite Photovoltaics and Detection
14:00-14:30	Keynote: Yun Hau Ng, City University of Hong Kong, China Solar Fuels from Photocatalytic and Photoelectrochemical Routes
14:30-15:00	Keynote: Da-Wei Wang, The University of New South Wales, Australia Waste-Energy Nexus – Some Thoughts and Trials
15:00-15:30	Coffee Break
Chairman: Prof. Liang Shen	
15:30-16:00	Keynote: Fangyang Liu, Central South University, China Efficient Recovery of Valuable Elements from End-of-Life Photovoltaic Modules
16:00-16:15	Invited: Xiang Ge, Guizhou University, China Recycling Lithium Cobalt Oxide (LCO) Based on Eutectic Choline Chloride-Oxalic Acid with Solvent Reusability and High Efficiency
16:15-16:30	Oral: Yue Yang, Central South University, China Efficient Separation and Recycling of Valuable Components from Cathode Materials of Spent Lithium-Ion Battery
16:30-16:45	Invited: Jiangfeng Qian, Wuhan University, China Direct Regeneration of Spent Li-Ion Battery Cathodes via Chemical Relithiation Reaction

Conference Notes

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Conference Notes

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Main Organizers

Shenzhen Science Technology and Innovation Commission

The People's Government of Nanshan District, Shenzhen

Organizers

Tsinghua Shenzhen International Graduate School

Institute of Metal Research, Chinese Academy of Sciences

Institute of Technology for Carbon Neutrality, SIAT, CAS

Shenzhen Geim Graphene Center

Co-Organizers

Guangdong Graphene Innovation Center

Shenzhen Institutes of Advanced Technology

Advanced Battery Materials Industry Cluster

Shenzhen Power Supply Technology Society

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