

2019第二届燃料电池与关键材料技术论坛

2nd Fuel Cells and Key Materials Forum 2019

- 电堆、膜电极、双极板、质子交换膜、催化剂和气体扩散层
- Stack, MEA, Bipolar Plate, PEM, Catalyst and GDL



7.11-12

广州 Guangzhou



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会议背景

氢燃料电池（HFC）将氢气和氧气中的化学能通过电化学反应直接转化为电能，是氢能产业链的核心环节，在氢能交通运输应用和可再生能源大规模储能中起到关键作用。2019年3月，氢能首次被写入《政府工作报告》。在氢燃料电池新能源汽车发展提速的背景下，预计2030年中国氢燃料电池车（FCV）将达到100万辆，加氢站达到1000座。

氢燃料电池属于质子交换膜燃料电池（PEMFC），主要包括燃料电池堆、空气供应、氢气供应、热管理及水管理五个子系统。燃料电池堆主要由单电池以堆栈的方式构成，单电池包括双极板、膜电极和密封圈。膜电极包括质子交换膜、催化剂和气体扩散层。

目前中国已掌握氢燃料电池的核心技术，具备进行产业链大规模示范应用的条件。2018年4月，武汉喜玛拉雅光电成功自主研发燃料电池Pt/C催化剂量产技术；9月，东岳集团150万平米/年燃料电池膜项目淄博签约。2019年1月，武汉理工氢电2万平米/年膜电极产线投产；2月，苏州擎动中国首套卷对卷直接涂布法膜电极生产线投产；同月，新源动力全球首发大功率金属双极板电堆模块HYMOD-70。

除PEMFC外，固体氧化物燃料电池（SOFC）也正在得到积极推广应用。SOFC使用固体氧化物电解质，且在高温下工作，具有热电联产综合利用效率高、寿命长等优点。2018年8月，中国首套以煤为原料的SOFC发电系统在晋煤集团打通全流程；2019年2月，徐州华清能源SOFC项目开建，预计6月试产；3月，潮州三环SOFC电堆工程化开发入选科技部可再生能源与氢能技术重点专项。

第二届燃料电池与关键材料技术论坛将于2019年7月11-12日在广州召开。会议将探讨全球与中国燃料电池发展现状与市场展望，燃料电池标准与测试技术，电堆智能制造与性能提升，膜电极制备工艺路线与品质控制，燃料电池关键材料——双极板、质子交换膜、催化剂和气体扩散层技术进展与性能优化，燃料电池空气与氢气供应系统，SOFC技术研发、关键材料与电站应用经验等。键因素分析等。

日程安排

2019年7月11日 周四

08:30~18:00 商务考察

2019年7月11日 周四

18:00~21:00 会前注册

2019年7月12日 周五

08:30~12:30 演讲报告

12:30~14:00 自助午餐与交流

14:00~18:30 演讲报告

18:30~20:00 自助晚餐与交流

会议主题

1. 全球与中国燃料电池发展现状与市场展望
2. 燃料电池（PEMFC和SOFC）应用场景与系统设计
3. 车用燃料电池系统与关键部件标准与测试技术
4. 燃料电池电堆智能制造与性能提升
5. 膜电极制备工艺路线——GDE、CCM、有序化
6. 膜电极自动化产线技术与关键装备
7. 双极板技术路线选择——石墨型、金属型与复合型
8. 金属双极板制造技术与表面涂层工艺
9. 燃料电池用高性能质子交换膜研发与应用
10. 燃料电池催化剂量产技术与低铂催化剂研发
11. 气体扩散层国产化进展与性能提升
12. 燃料电池用粘合剂与密封材料
13. 燃料电池空气与氢气供应系统
14. SOFC技术进展与关键材料
15. SOFC在分布式热电联产系统的优势分析



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English-Chinese Simultaneous Interpretation will be provided.

Background

Hydrogen fuel cell (HFC) can directly convert chemical energies in hydrogen and oxygen into electricity by electrochemical reaction, it is core links of hydrogen energy industrial chain and plays important roles in hydrogen energy transportation and renewable energy large-scale energy storage. Mar 2019, hydrogen energy first been written in <Report on the Work of the Government 2018>, under background of hydrogen fuel cell new energy vehicles development acceleration, it is estimated that China fuel cell vehicles will reach 1M, hydrogen refueling stations will reach 1000 in 2030.

HFC belongs to PEMFC, and mainly includes fuel cell stacks, air supply, hydrogen supply, thermal management and water management etc. 5 subsystems. Fuel cell stacks mainly consist of monocrystalline by way of stacking, monocrystalline includes bipolar plate, MEA and sealing ring. MEA includes PEM, catalyst and GDL.

China currently has mastered core technologies of HFC and has conditions of industrial chain large-scale demonstration application. Apr 2018, Wuhan Himalaya Optoelectronics successfully and independently R&D fuel cell Pt/C catalyst mass production technology; Sep, Dongyue 1.5Mm²/a fuel cell membrane project signed in Zibo; Jan 2019, Wuhan WUT HyPower 20k m²/a MEA production line operation; Feb, Suzhou Hydrogene China first roll-to-roll direct coating method MEA production line operation; in the same month, Sunrise Power released large-power metal bipolar plate stack module HYMOD-70 to the world.

Except PEMFC, SOFC is also under actively popularization and application. SOFC uses solid oxide electrolyte and works under high-temperature, has high efficiency of heat and power cogeneration comprehensive utilization and long life etc. merits. Aug 2018, China first set SOFC power generation system which uses coal as raw material got through whole process in Jincheng Anthracite Mining Group; Feb 2019, Xuzhou Huatsing Power SOFC project started construction and estimated to trial production in Jun; Mar, Chaozhou Three-circle Group SOFC stack engineering development been selected to technology major special projects of renewable energy and hydrogen energy of MOST.

2nd Fuel Cells and Key Materials Forum 2019 will be held in Guangzhou on Jul 11-12, 2019. The conference will discuss global and China fuel cell development current situation and market prospect, fuel cell standard and test technology, stack intelligent manufacture and performance increase, MEA preparation technology route and quality control, fuel cell key material – bipolar plate, PEM, catalyst & GDL technology progress and performance optimization, fuel cell air & hydrogen supply system, SOFC technology R&D, key material and power station application experience etc.

Preliminary Agenda

Jul.11, 2019	Thursday
08:30~18:00	Industrial visiting
Jul.11, 2019	Thursday
18:00~21:00	Pre- conference Registration
Jul.12, 2019	Friday
08:30~12:30	Speech
12:30~14:00	Networking Lunch
14:00~18:30	Speech
18:30~20:00	Banquet



Topics

1. Global and China fuel cell development current situation and market prospect
2. Fuel cell (PEMFC and SOFC) application scenarios and system design
3. Vehicle used fuel cell systems and key parts standard and test technology
4. Fuel cell stack intelligent manufacture and performance increase
5. MEA preparation technology routes – GDE, CCM and ordered
6. MEA automatic production line technology and key device
7. Bipolar plate technology route selection – graphite, metal and composite
8. Metal bipolar plate manufacture technology and surface coating technology
9. Fuel cell used high-performance PEM R&D and application
10. Fuel cell catalyst mass production technology and low-Pt catalyst R&D
11. GDL localization progress and performance increase
12. Fuel cell used adhesion agent and sealing material
13. Fuel cell air and hydrogen supply system
14. SOFC technology progress and key materials
15. SOFC advantages analysis on distributed heat and power cogeneration system