

SAE 2023 全球能源与可持续发展

GLOBAL ENERGY AND SUSTAINABILITY DEVELOPMENT SUMMIT

高峰论坛暨领袖闭门峰会

2023年8月25-26日 中国上海
AUGUST 25-26 SHANGHAI, CHINA



同期活动

CO-LOCATED EVENT

2023 汽车动力总成多元化技术国际论坛
VEHICLE POWERTRAIN DIVERSIFICATION TECHNOLOGY FORUM



SAE 2023 全球能源与可持续发展

GLOBAL ENERGY AND SUSTAINABILITY DEVELOPMENT SUMMIT

高峰论坛暨领袖闭门峰会

2023年 8月25~26日 中国 上海

August 25~26 Shanghai, China

主办单位

HOST



协办单位

CO-HOSTS

安亭·上海国际汽车城
Anting · Shanghai International Automobile City

TÜVNORD

合作伙伴

PARTNER

 中汽中心 | 检测
中汽研汽车检验中心(武汉)有限公司

目录

主办单位介绍	2
协办 & 合作伙伴	4
会议组委会	6
会议概览	9
会议日程	
第一天	10
第二天	14
同期活动	18
论文宣讲	20

WHATS INSIDE

Host Introduction	2
Co-hosts & Partner	4
Organizing Committee	6
Event-At-A-Glance	9
Technical Program	
Day One	10
Day Two	14
Co-located Event	18
Paper Presentation	20

本论坛旨在为思想的交流提供一个开放的平台。参会者或听众的发言未经本人及其公司的许可不得引用或剽窃。未经本人及其公司的许可，发言、讨论或照片的任何记录都不得擅自使用。

图像的使用规则

请注意，以SAE International活动与参与者的名义所拍摄的照片与视频的版权属于SAE International。只要注册参加SAE International的活动，即视为同意SAE International可在不通知您或对您提供报酬的情况下，为了宣传等目的使用任何有您出现在内的照片或视频。

The purpose of this session is to provide an open exchange of ideas. Remarks made by participants or members of the audience cannot be quoted or attributed to the individual or their company unless express permission has been granted by the individual and their company. Any record of remarks, discussion, or photographs may not be used unless express permission has been granted by the individual and their company.

CONSENT TO USE OF IMAGES

Please note that photographs and video taken by or on behalf of SAE International of event activities and attendees shall be the property of SAE International. By registering for an SAE International event, you consent to the use by SAE International of any photograph or video in which you appear, including for promotional purposes, in print, digital, or other format, without notice or compensation to you.



HOST INTRODUCTION



SAE International is a global association committed to advancing mobility knowledge and solutions for the benefit of humanity. By engaging nearly 200,000 engineers, technical experts and volunteers, we connect and educate mobility professionals to enable safe, clean, and accessible mobility solutions. We act on two priorities: encouraging a lifetime of learning for mobility engineering professionals and setting the standards for industry engineering. We strive for a better world through the work of our philanthropic SAE Foundation, including award-winning programs like A World In Motion® and the Collegiate Design Series™.

SAE International, as one of the world's largest standard development organizations in the mobility industries, we provide society and the global mobility engineering community with:

- Neutral forums that convene to address society's mobility needs
- The most reliable and comprehensive collection of engineering resources that advance mobility
- STEM education and professional development programs that inspire and build mobility's current and future workforce
- Consensus-based standards that advance quality, safety and innovation
- A global community whose collective wisdom makes mobility safe, clean and accessible



主办单位介绍



SAE International 是一家全球性的学会组织，致力于推动造福人类的航空航天、汽车、商用车及工程农用机械行业知识与解决方案的发展。为了实现安全、清洁、便捷的交通运输解决方案，SAE 在全球建立了拥有 20 万名工程师、技术专家及志愿者的网络平台，并不断培养行业专业人才。我们工作的两大优先事项是：激励航空航天、汽车、商用车及工程农用机械行业工程专业人才的终身学习，并为行业工程设定标准。我们通过慈善机构 SAE 基金会的工作努力创造一个更美好的世界，包括 A World in Motion（运动中的世界）和 Collegiate Design Series（大学生设计系列）等项目。

SAE International，作为目前全球最大的航空航天、汽车、商用车及工程农用机械行业的标准制定组织之一，始终致力于：

- 搭建中立平台，促进解决社会的出行需求
- 提供全球最可靠、最全面的工程资源，促进行业发展
- 通过 STEM 教育与职业发展项目，激发与培养行业现有与未来劳动力
- 通过共识的标准，提高产品质量、安全性和创新性
- 搭建全球性的社区，通过集体智慧让出行更安全、更清洁、更便捷



CO-HOSTS INTRODUCTION

安亭·上海国际汽车城
Anting • Shanghai International Automobile City

Shanghai International Automobile City, located in Jiading, sits at the interface of Shanghai with the rest of the Yangtze River Delta and the key nodule along the Shanghai-Ningbo Development Axis. Through its 22 years of development, the SIAC has become the automotive industry park in China with the largest industrial scale, the highest level of R&D, and the most comprehensive industry chain. With its deep R&D resources, the SIAC has been a trailblazer in the industrial trend to create CASE (connected, autonomous, shared, electric) vehicles, and started to push commercialization model innovation, and to establish itself as a talent hub in the industry, with the end goal of “taking the lead in China and building a presence in the world.”

TUVNORD

TÜV(Technischer Überwachungsverein) is interpreted as the German Technical Supervision Association. TUV NORD Group is one of the three certification bodies authorized by TUV (Technischer Überwachungsverein). As the world’s leading technical service expert, TUV NORD Group has set up more than 150 branches or subsidiaries in over 70 countries around the world. In the course of over 150 years of development, TUV NORD has developed into one of the top ten certification bodies in the world, from the initial “Association for the Inspection of Steam Boilers”, to becoming an officially authorized technical service company in Germany, continuously expanding the scope of service and perfecting its services.

PARTNER INTRODUCTION

 **中汽中心 | 检测**
中汽研汽车检验中心(武汉)有限公司

CATARC Automotive Test Center (Wuhan) Co., Ltd. is the first approved national quality inspection center in the field of new energy vehicles. As a national high-tech enterprise represented by the fields of intelligent networking, power batteries, and electric drive of new energy vehicles, it will gradually build into a first-class technology innovation service platform in China, providing one-stop services covering industry consulting, technology research and development, product testing, etc. for enterprises.



协办单位介绍

安亭·上海国际汽车城
Anting · Shanghai International Automobile City

上海国际汽车城地处嘉定，是上海面向长三角的门户、沪宁发展轴的重要节点城市。经过 22 年开发建设，汽车城已建设成为国内汽车产业规模最大、研发水平最高、产业链最完整的汽车产业基地。当前，在汽车产业电动化、智能化、网联化、共享化新变革趋势下，汽车城正以丰富的研发资源为优势，不断探索布局汽车前沿领域，持续推动商业模式创新，加快构筑汽车人才高地，力争实现“在国内占领制高点、在国际上有一席之地”。

TÜVNORD

TÜV(Technischer Überwachungsverein) 中文解释为德国技术监督协会。TÜV NORD 是德国技术监督协会授权的三大认证机构之一。作为全球领先技术服务专家，TÜV NORD 集团在全球 70 多个国家设有超过 150 家分支机构。在超过 150 年的发展历程中，TÜV NORD 从最初的“压力容器检验协会”，到成为德国官方授权的技术服务公司，持续拓展服务范畴，完善服务，迄今已发展成为全球领先检验检测认证机构之一。

合作伙伴介绍

 **中汽中心 | 检测**
中汽研汽车检验中心(武汉)有限公司

中汽研汽车检验中心（武汉）有限公司是新能源汽车领域首个获批的国家质检中心，作为以新能源汽车智能网联、动力电池、电驱领域为代表的国家高新技术企业，将逐步构建成国内一流的技术创新服务平台，可为企业提供涵盖行业咨询、技术研发、产品检测等在内的一站式服务。



会议组委会

ORGANIZING COMMITTEE

大会主席

Chair

David Schutt

SAE International 首席执行官
CEO, SAE International

张立军

ZHANG Lijun

同济大学 汽车学院院长
Dean, School of Automotive Studies, Tongji University

执行主席

Executive Chair

Frank Menchaca

SAE International 可持续发展主席
President, Sustainable Mobility Solutions, SAE International

韩志玉

HAN Zhiyu

同济大学 教授、SAE Fellow、SAE 新能源汽车技术委员会主席
Professor, Tongji University; SAE Fellow; Chair, SAE New Energy Vehicle Technical Committee

论坛主席

Forum Chair

Robert Galyen

SAE Fellow、前宁德时代首席技术官
SAE Fellow; Former CTO, CATL

帅石金

SHUAI Shijin

清华大学 教授
Professor, Tsinghua University

吴凯

WU Kai

宁德时代 首席科学家
Chief Scientist, CATL

徐向阳

XU Xiangyang

北京航空航天大学交通科学与工程学院教授、学术委员会主任
Professor, School of Transportation Science and Engineering, Beihang University

许敏

XU Min

上海交通大学 汽车工程研究院 院长、SAE Fellow
Dean, Institute of Automotive Engineering, Shanghai Jiao Tong University; SAE Fellow

尧命发

YAO Mingfa

天津大学 讲席教授、SAE Fellow
Chair Professor, Tianjin University; SAE Fellow

赵治国

ZHAO Zhiguo

同济大学 汽车学院 副院长、教授
Vice Dean and Professor, School of Automotive Studies, Tongji University

会议组委会

ORGANIZING COMMITTEE

同期活动: 2023汽车动力总成多元化技术国际论坛

Co-located Event: 2023 Vehicle Powertrain Diversification Technology Forum

大会主席

Chair

张立军 同济大学 汽车学院院长
ZHANG Lijun Dean, School of Automotive Studies, Tongji University

副主席

Vice Chair

韩志玉 同济大学 教授、SAE Fellow、SAE 新能源汽车技术委员会主席
HAN Zhiyu Professor, Tongji University; SAE Fellow; Chair, SAE New Energy Vehicle Technical Committee

徐向阳 北京航空航天大学交通科学与工程学院教授
XU Xiangyang Professor, School of Transportation Science and Engineering, Beihang University

赵治国 同济大学 汽车学院 副院长、教授
ZHAO Zhiguo Vice Dean and Professor, School of Automotive Studies, Tongji University

执行主席

Executive Chair

赵治国 同济大学 汽车学院 副院长、教授
ZHAO Zhiguo Vice Dean and Professor, School of Automotive Studies, Tongji University

分会主席

Session Chair

新能源汽车前沿技术
Advanced Technology in New Energy Vehicles

陈勇 广西大学
CHEN Yong Guangxi University

孟德建 同济大学
MENG Dejian Tongji University

新能源汽车的控制及优化
Control and Optimization of New Energy Vehicles

林霖 南京航空航天大学
LIN Fen Nanjing University of Aeronautics and Astronautics

高炳钊 同济大学
GAO Bingzhao Tongji University

混合动力专用发动机
Dedicated Hybrid Engine

孔令逊 上海交通大学
David Hung Shanghai Jiao Tong University

董光宇 同济大学
DONG Guangyu Tongji University

零碳内燃机
Zero Carbon Internal Combustion Engine

谢辉 天津大学
XIE Hui Tianjin University

蔡黎明 同济大学
CAI Liming Tongji University

混合动力专用变速器
Dedicated Hybrid Transmissions

何洪文 北京理工大学
HE Hongwen Beijing Institute of Technology

董鹏 北京航空航天大学
DONG Peng Beihang University

电机和电驱动系统
Electrical Motor and E-Drive System

祝小元 东南大学
ZHU Xiaoyuan Southeast University

帅志斌 中国北方车辆研究所
SHUAI Zhibin China North Vehicle Research Institute

电池和管理系统
Battery and Battery Management System

胡晓松 重庆大学
HU Xiaosong Chongqing University

戴海峰 同济大学
DAI Haifeng Tongji University

燃料电池和系统
Fuel Cells and Fuel Cell Systems

林瑞 同济大学
LIN Rui Tongji University

李蕴琪 北京航空航天大学
LI Yunqi Beihang University



“THE TÜV NORD GROUP IS A GLOBAL LEADER IN TECHNOLOGY SERVICES WITH THE CLEAR AIM OF ACCOMPANYING ITS CLIENTS WITH PRUDENCE AND FORESIGHT INTO THE FUTURE.”



TÜV北德车辆服务

- ISO 26262 车辆功能安全
- ISO/PAS 21448 预期功能安全
- ECE R155/R156, ISO/SAE 21434 网络安全
- 审核、评估、认证、测试

TÜV北德简介

TÜV北德(TÜV NORD)至今已经有150多年的历史,在世界上七十多个国家设立了分公司,拥有14000多名员工,是德国最大的技术服务认证公司之一。和德国、欧洲乃至全球的工业企业和政府机关长期合作,在世界范围内,被广泛认可。

TÜV NORD

地址:上海市静安区康宁路288弄1号
联系人:朱俊杰
邮箱:junzhu@tuv-nord.com
电话:021-33196362/13764017478

依据各类安全标准,提供培训、研发支持以及评审

- ISO 26262——功能安全
- ISO/PAS 21448——预期功能安全
- ISO/SAE 21434, ISO 5112——网络安全工程
- ISO/AWI 24089——软件更新工程

汽车电子及电子/电气架构测试实验室

- 系统分析, V&V概念, 测试执行
- E/E系统防护概念
- 自动驾驶、网联汽车、网联安全及软件更新要求

UNECE 车辆型式认证(VTA)服务

- 网络安全 UN ECE R155
- 软件更新 UN ECE R156
- 复杂电子系统的特殊要求,例如: ECE R13, R13H, R79, R131, R152, R157.....



8月24日 August 24	
领袖闭门峰会 Leadship Closed Door Summit	
8月25日 August 25	
SAE 2023 全球能源与可持续发展高峰论坛 Global Energy and Sustainability Development Summit	
9:00~9:20 欢迎致辞 Welcome Address	
9:20~11:20 主旨演讲 Keynote Speech	
11:20~12:10 圆桌讨论 Panel Discussion	
交通能源可持续发展论坛 Sustainable Development of Transportation Energy Forum	
13:30~16:00 技术演讲 Technical Speech	
16:15~17:00 圆桌讨论 Panel Discussion	
8月26日 August 26	
电池与充换电技术发展论坛 Battery and Charging/Swapping Technology Development Forum	汽车动力总成多元化技术论坛 Vehicle Powertrain Diversification Technology Forum
9:00~12:15 技术演讲 Technical Speech	9:00~9:10 欢迎致辞 Welcome Speech
	9:10~12:00 技术演讲 Technical Speech
交通动力碳排放论坛 Mobility Carbon Emissions Forum	汽车动力总成多元化技术论坛 Vehicle Powertrain Diversification Technology Forum
13:30~16:00 技术演讲 Technical Speech	13:30~17:15 论文宣讲 Paper Presentation
16:15~16:45 圆桌讨论 Panel Discussion	17:15~17:30 优秀论文颁奖 Award for Outstanding Papers

TECHNICAL PROGRAM

AUGUST 25

MAIN VENUE	Global Energy and Sustainability Development Summit
9:00	<p>WELCOME ADDRESS</p> <p>Frank Menchaca President, Sustainable Mobility Solutions, SAE International PAN Xiaohong General Manager, Shanghai International Auto City (Group) Co., Ltd.</p>
	<p>KEYNOTE SPEECH</p> <p>Moderator: ZHANG Lijun Dean, School of Automotive Studies, Tongji University</p>
9:20	<p>The Thoughts on New Energy Vehicle Technology Route</p> <p>YU Zhuoping Professor, Tongji University</p>
9:50	<p>Thinking on the Transformation of Passenger Car Powertrain in China under the Dual Carbon Background</p> <p>LI Jincheng Chief Expert, FAW R&D Center</p>
10:20	<p>Sustainability in Motion: A Roadmap to Net-Zero</p> <p>Kelly Senecal Co-founder and Owner, Convergent Science</p>
10:50	<p>Innovation Drive under Dual Carbon Goals - Value Analysis of GWM's Innovative Configuration</p> <p>LIU Bao Deputy General Manager, Great Wall Motor Technical Center</p>
11:20	<p>Panel: Sustainable Development of Transportation Energy and Powertrain</p> <p>Moderator: ZHANG Lijun Dean, School of Automotive Studies, Tongji University</p> <p>YU Zhuoping Professor, Tongji University HAN Zhiyu Professor, Tongji University; SAE Fellow; Chair of SAE New Energy Vehicles Technical Committee XU Xiangyang Professor, School of Transportation Science and Engineering, Beihang University LI Jincheng Chief Expert, FAW R&D Center HUANG Chendong Founder and CEO, NEWRIZON</p>
12:10	Lunch

会议日程

8月25日

主会场	全球能源与可持续发展高峰论坛
	欢迎致辞
9:00	Frank Menchaca SAE International 可持续发展主席 潘晓红 上海国际汽车城（集团）有限公司 总经理
	主旨演讲 主持人： 张立军 同济大学 汽车学院院长
9:20	关于新能源汽车技术路线的几点思考 余卓平 同济大学 教授
9:50	双碳背景下中国乘用车动力转型的思考 李金成 中国第一汽车集团有限公司研发总院 首席专家
10:20	动态可持续性：通往零排放的路线图 Kelly Senecal Convergent Science 联合创始人
10:50	双碳目标下的创新驱动——长城汽车创新构型价值分析 刘宝 长城汽车技术中心 副总经理
	圆桌讨论：交通能源与动力可持续发展 主持人： 张立军 同济大学 汽车学院院长
11:20	余卓平 同济大学 教授 韩志玉 同济大学 教授、SAE Fellow、SAE新能源汽车技术委员会主席 徐向阳 北京航空航天大学 交通科学与工程学院教授 李金成 中国第一汽车集团有限公司研发总院 首席专家 黄晨东 前晨汽车 创始人兼首席执行官
12:10	午餐

TECHNICAL PROGRAM

AUGUST 25

MAIN VENUE	Sustainable Development of Transportation Energy Forum Moderator: SHUAI Shijin Professor, the State Key Laboratory of Intelligent Clean Vehicle and Mobility, Tsinghua University
13:30	State of the Art and Prospect of Hydrogen Power Technologies for Mobility SHUAI Shijin Professor, the State Key Laboratory of Intelligent Clean Vehicle and Mobility, Tsinghua University
13:55	Multiple Approaches for the Low Carbon Technology Innovations of Automotive Mitsuto Sakai Director, Intelligent ElectroMobility R&D Center by TOYOTA (China) Co., Ltd. Beijing Branch
14:20	Methanol Hydrogen - Boosting Energy Transition and Hydrogen Transportation CHENG Jinglei Chair and CEO, SunHydro Group
14:45	The Path to Carbon Neutrality in the EU Automotive Industry YU Heng Business Line Manager of Vehicle Department, TUV NORD (Hangzhou) Co., Ltd.
15:10	Working Together to Address Global Challenges in Adoption of Electrified Vehicles and Machines Brian Engle Director, Amphenol Business Development; Chair, SAE Battery Standards Steering Committee
15:35	Prospects for eFuels under Net-Zero Carbon Emission Background XU Hongming Professor, University of Birmingham; Distinguished Visiting Professor, Tsinghua University; SAE Fellow
16:00	Tea Break
16:15 ~ 17:00	Panel: Prospects for the Application of Carbon-Neutral Fuels in Transportation Moderator: SHUAI Shijin Professor at the State Key Laboratory of Intelligent Clean Vehicle and Mobility, Tsinghua University Mitsuto Sakai Director of Intelligent ElectroMobility R&D Center by TOYOTA (China) Co., Ltd. Beijing Branch CHENG Jinglei Chair and CEO, SunHydro Group XU Hongming Professor, University of Birmingham; Distinguished Visiting Professor, Tsinghua University; SAE Fellow GU Jianming CTO, Valeo China LIN Rui Professor, Tongji University

会议日程

8月25日

主会场	交通能源可持续发展论坛 主持人：帅石金 清华大学 智能绿色车辆与交通全国重点实验室教授
13:30	交通氢能动力技术发展现状及展望 帅石金 清华大学 智能绿色车辆与交通全国重点实验室教授
13:55	汽车低碳技术革新的多方位探索 坂井光人 丰田智能电动汽车研发中心（中国）有限公司北京分公司 主任
14:20	甲醇氢能——助力能源转型和氢能交通 程惊雷 青岛阳氢集团 董事长
14:45	欧盟汽车行业碳中和之路 余恒 杭州汉德质量认证服务有限公司 车辆部业务线经理
15:10	携手应对电动汽车的全球挑战 Brian Engle 安费诺 业务发展总监、SAE电池指导委员会主席
15:35	零碳背景下的电子合成燃料展望 徐宏明 英国伯明翰大学 教授、清华大学 卓越访问教授、SAE Fellow
16:00	茶歇
	圆桌讨论: 交通碳中和燃料应用前景 主持人：帅石金 清华大学 智能绿色车辆与交通全国重点实验室教授
16:15 ~ 17:00	坂井光人 丰田智能电动汽车研发中心（中国）有限公司北京分公司 主任 程惊雷 青岛阳氢集团董事长 徐宏明 英国伯明翰大学教授、清华大学卓越访问教授、SAE Fellow 顾剑民 法雷奥中国 首席技术官 林瑞 同济大学 教授

TECHNICAL PROGRAM

AUGUST 26

PARALLEL VENUE	Battery and Charging/Swapping Technology Development Forum Moderator: JIANG Chunsheng Deputy General Manager, CATARC Automotive Inspection Center (Wuhan) Co., Ltd.
9:00	Market Opportunities for Comprehensive Vehicle Electrification in the Public Sector JIANG Chunsheng Deputy General Manager, CATARC Automotive Inspection Center (Wuhan) Co., Ltd.
9:30	The Development Status and Trend of Power Battery Technology XIAO Chengwei Researcher, China Electronics Technology Group Corporation No.18 Institute
10:00	Power-up for a Better Life SHEN Fei SVP, NIO
10:30	Tea Break
10:45	Full Solution for Sustainable Battery Materials and IEA Battery Swapping Task based on Carbon Neutral LIN Xiao CEO, Botree Cycling; Operating Agent of IEA HEV TCP Task 48 Battery Swapping
11:15	The Solution to "Energy Anxiety" - XFC (Extreme Fast Charging) Technology MAO Wenfeng Chief Scientist and Director, Battery Research Institute, Greater Bay Technology
11:45	Progress of the Standards for Passenger Car Battery Swapping Industry WU Yuanhe R&D Director, Electronics Service Products, CATL
12:15	Lunch

会议日程

8月26日

分会场	电池与充换电技术发展论坛 主持人：姜春生 中汽研汽车检验中心（武汉）有限公司 副总经理
9:00	公共领域车辆全面电动化的市场机遇 姜春生 中汽研汽车检验中心（武汉）有限公司 副总经理
9:30	动力电池技术发展现状及趋势 肖成伟 中国电子科技集团公司第十八研究所 研究员
10:00	为美好生活加电 沈斐 蔚来 高级副总裁
10:30	茶歇
10:45	碳合规下的动力电池行业可持续发展与国际能源署换电任务组 林晓 博萃循环董事长、IEA换电任务组长
11:15	“补能焦虑”的破局之路——XFC极速充电技术 毛文峰 广州巨湾技研有限公司 首席科学家、电池研究院院长
11:45	乘用车换电行业标准进展 吴元和 宁德时代 电服产品研发总监
12:15	午餐

TECHNICAL PROGRAM

AUGUST 26

PARALLEL VENUE	Mobility Carbon Emissions Forum Moderator: YAO Mingfa Chair Professor of Tianjin University; Vice President of Qinghai Minzu University; SAE Fellow
13:30	Technical Roadmap for Ships to Achieve Net-Zero Carbon Emissions YAO Mingfa Chair Professor of Tianjin University; Vice President of Qinghai Minzu University; SAE Fellow
13:55	Methanol Energy Power Under Carbon Neutrality SHEN Yuan General Manager of Collaborative Innovation Center, Geely
14:20	Passenger Car Carbon Emission Model and Carbon Economic Model Based on Full Life Cycle LI Xuesong Associate Professor, Shanghai Jiao Tong University
14:45	Control Technology of Aviation Airborne Intelligent Pump Source WANG Yan Professor, Beihang University
15:10	Transportation Energy Transition and Decarbonization LIN Zhenhong Professor, South China University of Technology
15:35	Development of Aviation Electrification and Application of Electric Propulsion System ZHANG He Professor, University of Nottingham Ningbo China
16:00 ~ 16:45	Panel: Technical Path of Low-carbonization of Transportation Power Moderator: YAO Mingfa Chair Professor, Tianjin University; Vice President, Qinghai Minzu University; SAE Fellow SHEN Yuan General Manager, Collaborative Innovation Center, Geely LI Xuesong Associate Professor, Shanghai Jiao Tong University WANG Yan Professor, Beihang University LIN Zhenhong Professor, South China University of Technology ZHANG He Professor, University of Nottingham Ningbo China

会议日程

8月26日

分会场	交通动力碳排放论坛 主持人：尧命发 天津大学 讲席教授、青海民族大学 副校长、SAE Fellow
13:30	船舶实现双碳目标的技术途径 尧命发 天津大学 讲席教授、青海民族大学 副校长、SAE Fellow
13:55	碳中和下的甲醇能源动力 沈源 吉利协同创新中心 总经理
14:20	基于全生命周期的乘用车碳排放模型与碳经济模型 李雪松 上海交通大学 副教授
14:45	航空机载智能泵源控制技术 王岩 北京航空航天大学 教授
15:10	交通能源转型和碳减排 林镇宏 华南理工大学 教授
15:35	航空电气化发展和电驱系统应用 张何 宁波诺丁汉大学 教授
	圆桌讨论: 交通动力低碳化的技术路径 主持人：尧命发 天津大学 讲席教授、青海民族大学 副校长、SAE Fellow
16:00 ~ 16:45	沈源 吉利协同创新中心 总经理 李雪松 上海交通大学 副教授 林镇宏 华南理工大学 教授 王岩 北京航空航天大学 教授 张何 宁波诺丁汉大学 教授

TECHNICAL PROGRAM

AUGUST 26 CO-LOCATED EVENT

PARALLEL VENUE	Vehicle Powertrain Diversification Technology Forum Moderator: ZHAO Zhiguo Vice Dean and Professor, School of Automotive Studies, Tongji University
	WELCOME ADDRESS
9:00	ZHAO Zhiguo Vice Dean and Professor, School of Automotive Studies, Tongji University
9:10	Development Status and Trends of Hybrid Powertrain Energy Management Strategies XU Xiangyang Professor and Director of Academic Committee, School of Transportation Science and Engineering, Beihang University
9:35	Powertrain Technology Development of Passenger Vehicles under the Dual Carbon Background XU Zheng Director, SAIC Motor R&D Innovation Headquarters
10:00	Research and Practice on Low-Carbon and Zero-Carbon Transition of New Energy Commercial Vehicles ZHONG Yuwei SVP, Guangxi Yuchai; Chair, Yuchai Synland
10:25	Tea Break
10:45	Diversified Electrification Trend and the R&D Practice of Chang'an Automobile LIU Jiwei HEV Development Manager, Chongqing Chang'an Automobile
11:10	Thoughts on Powertrain Diversification Under Dual Carbon Environment ZHANG Weidong Chief Engineer, Shenyang Aerospace Mitsubishi Motors Engine Manufacturing Co., Ltd.
11:35	Discussion on the Status and Trends of Commercial Vehicle Electric Drive Market and Technology DENG Yueyue Chief Engineer, TBK Co., Ltd.
12:00	Lunch

会议日程

8月26日 同期活动

分会场	汽车动力总成多元化技术国际论坛 主持人：赵治国 同济大学 汽车学院副院长、教授
9:00	欢迎致辞 赵治国 同济大学 汽车学院副院长、教授
9:10	混合动力能量管理策略发展现状和趋势 徐向阳 北京航空航天大学交通科学与工程学院教授、学术委员会主任
9:35	双碳背景下乘用车动力总成技术开发 徐政 上汽集团创新研究开发总院 总监
10:00	新能源商用车低碳零碳转型研究与实践 钟玉伟 广西玉柴机器股份有限公司 高级副总裁、玉柴芯蓝新能源动力科技有限公司 董事长
10:25	茶歇
10:45	多元电气化趋势及长安研发实践 刘继伟 重庆长安汽车股份有限公司 混动开发经理
11:10	双碳环境下的动力多元化思考 张卫东 沈阳航天三菱汽车发动机制造有限公司 总工程师
11:35	商用车电驱动市场、技术现状和趋势探讨 邓跃跃 特百佳动力科技股份有限公司 总工程师
12:00	午餐

PAPER PRESENTATION

AUGUST 26

ROOM 1	ROOM 2		ROOM 3	
Fuel Cells and Fuel Cell Systems	Advanced Technology in New Energy Vehicles	Electrical Motor and E-Drive System	Dedicated Hybrid Engine	Zero Carbon Internal Combustion Engine
	Control and Optimization of New Energy Vehicles		Battery and Battery Management System	Dedicated Hybrid Transmissions

ROOM 1: Fuel Cells and Fuel Cell Systems

Chair: LIN Rui Tongji University LI Yunqi Beihang University

13:30	23CETP-0024 A Multi-sine Excitation Signal Optimization Strategy for EIS Measurement of High-power Fuel Cells XU Xinru Tongji University
13:45	23CETP-0017 Leakage and Diffusion Analysis and Safety Research of Onboard Hydrogen Systems in Different Space ZHANG Yongtao Beijing Jiaotong University
14:00	23CETP-0021 Prediction of the Remaining Useful Life of the Proton Exchange Membrane Fuel Cell with an Integrated Health Index FAN Lei Tongji University
14:15	23CETP-0018 Study on Transient Tolerance Concentration of Cathode Ammonia in Proton Exchange Membrane Fuel Cells JING Yuan Tongji University
14:30	23CETP-0019 Experimental Study on Transient Response Characteristics of Commercial-size PEMFC under Varying Load MA Yunyang Tongji University
14:45	23CETP-0022 Inlet Gas Temperature Control Technology for PEMFC Stack Test Benches PEI Yaowang Tongji University
15:00	23CETP-0020 A Novel Hybrid Method Based on the Sliding Window Method for the Estimation of the State of Health of the Proton Exchange Membrane Fuel Cell FAN Lei Tongji University
15:15	23CETP-0043 Improving Dynamic Response of PEMFC Anode Pressure in Dropped Load Scenarios through Split Range Control ZHANG Junyu Tongji University
15:30	23CETP-0002 Optimization of Microporous Layer Composition at Varying Humidities for High-Performance Polymer Exchange Membrane Fuel Cell LOU Mingyu Tongji University
15:45	23CETP-0041 Analysis of Rotor Dynamics Characteristics of Roots Hydrogen Circulation Pump LIN Mengzhu Tongji University
16:00	23CETP-0016 Research on the Control Method of Staggered Parallel Boost Structure in Fuel Cell System LIU Qilin Tongji University
16:15	23CETP-0044 Research on Air Mass Flow and Pressure Control Method for the Multi-stack Fuel Cell System Based on Model Predictive Control XIE Zhengchun Tongji University
16:30	23CETP-0042 Research on Cold Start Strategy of Vehicle Multi-stack Fuel Cell System JIN Yapeng Tongji University

论文宣讲

8月26日

会议室1	会议室2		会议室3	
燃料电池和系统	新能源汽车前沿技术	电机和电驱动系统	混合动力专用发动机	零碳内燃机
	新能源汽车的控制及优化		电池和管理系统	混合动力专用变速器

会议室 1: 燃料电池和系统

主席: 林瑞 同济大学 李蕴琪 北京航空航天大学

23CETP-0024	13:30	用于大功率燃料电池电化学阻抗谱测量的多频复合正弦激励信号优化策略 徐欣茹 同济大学
23CETP-0017	13:45	车载供氢系统在不同空间的泄漏扩散分析与安全研究 张永涛 北京交通大学
23CETP-0021	14:00	使用融合健康指标的质子交换膜燃料电池剩余使用寿命预测 樊磊 同济大学
23CETP-0018	14:15	质子交换膜燃料电池对阴极氨的瞬时耐受浓度研究 景源 同济大学
23CETP-0019	14:30	变载工况下大面积燃料电池瞬态响应特性研究 马云阳 同济大学
23CETP-0022	14:45	燃料电池测试台进气温度控制技术 裴尧旺 同济大学
23CETP-0020	15:00	基于滑动窗口方法的质子交换膜燃料电池健康状态估计混合方法 樊磊 同济大学
23CETP-0043	15:15	改善降载场景下质子交换膜燃料电池阳极压力动态响应的分程控制测量 张俊宇 同济大学
23CETP-0002	15:30	宽幅湿度下高性能质子交换膜燃料电池微孔层组分优化研究 娄明宇 同济大学
23CETP-0041	15:45	罗茨式氢气循环泵的转子动力学特性分析 林梦竹 同济大学
23CETP-0016	16:00	基于交错并联Boost结构的燃料电池系统DC/DC控制方法研究 刘其林 同济大学
23CETP-0044	16:15	基于模型预测控制的多堆燃料电池系统空气流量和压力控制方法研究 谢正春 同济大学
23CETP-0042	16:30	车用多堆燃料电池系统冷启动策略研究 晋亚鹏 同济大学

PAPER PRESENTATION

AUGUST 26

ROOM 2

Advanced Technology in New Energy Vehicles

Chair: **CHEN Yong** Guangxi University **MENG Dejian** Tongji University

13:30	23CETP-0023 Experimental Study on Energy Consumption and Emissions of Heavy-duty Hybrid Dump Truck HAN Ronggang CATARC
13:45	23CETP-0036 Simulation Study on the Effect of In-Cylinder Water Injection Mass on Engine Combustion and Emissions Characteristics GUAN Jun Tongji University
14:00	23CETP-0034 Energy Transformation Propelled Evolution of Automotive Carbon Emissions MENG Shuo Tongji University
14:15	23CETP-0033 Design of a Permanent Magnet Biased Radial Magnetic Bearing for Energy Storage of Vehicle Flywheels SHA Yingdi Chongqing Tongwo Automobile Technology Co., Ltd.

Electrical Motor and E-Drive System

Chair: **ZHU Xiaoyuan** Southeast University **SHUAI Zhibin** China North Vehicle Research Institute

14:30	23CETP-0009 Matching and Optimization Design of Electric Drive Assembly Mounting System of Electric Vehicle WANG Yifan Tongji University
14:45	23CETP-0012 Analysis and Control of Gear Rattle Noise for E-axle WANG Dong CATARC
15:00	23CETP-0011 Analysis of Dynamic Characteristics and Load Sharing Performance of Electric Driven Planetary Gear System Based on Electromechanical Coupling Model GUO Fang Chang'an University
15:15	23CETP-0039 Gear Fault Diagnosis for Vehicle Electric Drive Systems Based on Stator Currents GONG Hao Jiangsu University
15:30	23CETP-0040 Transient Temperature Field Prediction of PMSM Based on Electromagnetic-heat-flow Multi-physics Coupling and Data-Driven Fusion Modeling TANG Peng Tongji University

Control and Optimization of New Energy Vehicles

Chair: **LIN Fen** Nanjing University of Aeronautics and Astronautics **GAO Bingzhao** Tongji University

15:45	23CETP-0030 An Operating Point Adjustment Model Using PMP-GWO-Bi-LSTM for Range Extended Electric Vehicle HUANG Wei University of Science and Technology of China
16:00	23CETP-0013 Energy Management Based on D4QN Reinforcement Learning for a Series-parallel Multi-speed Hybrid Electric Vehicle ZHAO Yinghua Tongji University
16:15	23CETP-0031 Assisted Steering Control for Distributed Drive Electric Vehicles Based on Combination of Driving and Braking WANG Cheng Wuhan University of Technology

论文宣讲

8月26日

会议室 2

新能源汽车前沿技术

主席: 陈勇 广西大学 孟德建 同济大学

- | | |
|-------|--|
| 13:30 | 23CETP-0023
重型混合动力自卸车能耗及排放试验研究
韩荣港 中国汽车技术研究中心有限公司 |
| 13:45 | 23CETP-0036
缸内喷水质量对发动机燃烧和排放特性影响的仿真研究
管俊 同济大学 |
| 14:00 | 23CETP-0034
能源转型推动下的汽车碳排放演变
孟硕 同济大学 |
| 14:15 | 23CETP-0033
一种用于车载飞轮储能的永磁偏置径向磁轴承设计
沙迎递 重庆同沃汽车科技有限公司 |

电机和电驱动系统

主席: 祝小元 东南大学 帅志斌 中国北方车辆研究所

- | | |
|-------|--|
| 14:30 | 23CETP-0009
电动汽车电驱动总成悬置系统匹配与优化设计
王一凡 同济大学 |
| 14:45 | 23CETP-0012
电驱桥齿轮敲击噪声分析与控制
王东 中汽中心 |
| 15:00 | 23CETP-0011
电驱动行星轮系机电耦合动态特性及均载性能分析
郭芳 长安大学 |
| 15:15 | 23CETP-0039
基于定子电流的汽车电驱动系统齿轮故障诊断
宫昊 江苏大学 |
| 15:30 | 23CETP-0040
基于电磁热流多物理场耦合和数据驱动融合建模的永磁同步电机瞬态温度场预测
唐鹏 同济大学 |

新能源汽车的控制及优化

主席: 林葵 南京航空航天大学 高炳钊 同济大学

- | | |
|-------|---|
| 15:45 | 23CETP-0030
一种用于增程式混合动力汽车工况点调节的PMP-GWO-Bi LSTM模型开发
黄伟 中国科学技术大学 |
| 16:00 | 23CETP-0013
基于D4QN强化学习算法的串并联多挡混合动力乘用车能量管理策略研究
赵瀛华 同济大学 |
| 16:15 | 23CETP-0031
基于驱动与制动相结合的分布式驱动电动汽车辅助转向控制
王诚 武汉理工大学 |

PAPER PRESENTATION

AUGUST 26

ROOM 3

Dedicated Hybrid Engine

Chair: **David Hung** Shanghai Jiao Tong University **DONG Guangyu** Tongji University

13:30	23CETP-0005 An Experimental Study on Soot Particles Size Distribution and Nanostructure Evolution at Different Tailpipe Positions of a Dedicated Hybrid Engine FU Jiale Tongji University
13:45	23CETP-0027 Simulation Study on EGR Condensate Flow and Uniformity of Each Cylinder in the Intake Manifold LI Guanting BYD
14:00	23CETP-0006 Simulation Study on High Expansion Ratio Dedicated Hybrid Engine for Hybrid Commercial Vehicle Application WANG Xiaosa Tianjin University
14:15	23CETP-0028 Research on the Influence of Different Working Conditions on the Driving Range, Energy Consumption and Emissions of Heavy-duty Hybrid Buses FENG Zhonghui TATC

Zero Carbon Internal Combustion Engine

Chair: **XIE Hui** Tianjin University **CAI Liming** Tongji University

14:30	23CETP-0026 Research on Injection Characteristics of Marine Ammonia Fuel Injector Under Wide Temperature Range WEI Yunpeng Harbin Engineering University
14:45	23CETP-0045 Simulation Study of the Effect of Nozzle Position and Hydrogen Injection Strategy on Hydrogen Engine Combustion Characteristic TIAN Yuan Tongji University
15:00	23CETP-0025 Numerical Investigations on Formation Process of N₂O in Ammonia/Hydrogen Fueled Pre-Chamber Jet Ignition Engine SHANG Quanbo Tongji University
15:15	23CETP-0046 LES Study of the Mixing Process and Cyclic Variation of a Direct-Injection Hydrogen Engine LIU Xiaoqi Tongji University
15:30	23CETP-0029 Numerical Simulation of the Effect of In-Cylinder Water Spraying on the Knock and Combustion Characteristics of a Hydrogen-Argon Oxygen Engine PANG Kai Tianjin University

论文宣讲

8月26日

会议室 3

混合动力专用发动机

主席: 孔令逊 上海交通大学 董光宇 同济大学

- | | | |
|-------------|-------|---|
| 23CETP-0005 | 13:30 | 混合动力专用发动机排气管不同位置碳烟颗粒粒径分布及纳米结构演变实验研究
付佳乐 同济大学 |
| 23CETP-0027 | 13:45 | 进气歧管内EGR冷凝水流动仿真研究
李冠廷 比亚迪汽车工业有限公司 |
| 23CETP-0006 | 14:00 | 面向混合动力商用车应用的高膨胀比混合动力专用发动机仿真研究
王潇洒 天津大学 |
| 23CETP-0028 | 14:15 | 不同工况对重型混动公交车续驶里程、能耗及排放影响研究
冯钟辉 中汽研汽车检验中心(天津)有限公司 |

零碳内燃机

主席: 谢辉 天津大学 蔡黎明 同济大学

- | | | |
|-------------|-------|--|
| 23CETP-0026 | 14:30 | 宽温域下船用氨燃料喷射器喷射特性研究
魏云鹏 哈尔滨工程大学 |
| 23CETP-0045 | 14:45 | 喷嘴位置与喷氢策略对氢气发动机燃烧特性的仿真研究
田原 同济大学 |
| 23CETP-0025 | 15:00 | 氨氢燃料射流点火发动机N ₂ O生成过程的仿真研究
商权波 同济大学 |
| 23CETP-0046 | 15:15 | 直喷氢气发动机混合过程及其循环变动的大涡模拟研究
刘晓祺 同济大学 |
| 23CETP-0029 | 15:30 | 缸内喷水对氢-氧发动机爆震与燃烧特性影响的数值模拟研究
庞凯 天津大学 |

PAPER PRESENTATION

AUGUST 26

ROOM 3

Battery and Battery Management System

Chair: HU Xiaosong Chongqing University **DAI Haifeng** Tongji University

15:45 23CETP-0003
Sensitivity Analysis of Advanced Non-linear Observer for States Estimation of Lithium ion Batteries
Muhammad Saeed Chongqing University

16:00 23CETP-0037
Knee-Point Identification of Battery Degradation Trajectory Based on Constant Voltage Charging Capacity Variation
CHEN Jianguo Shanghai University of Technology

Dedicated Hybrid Transmissions

Chair: HE Hongwen Beijing University of Technology **DONG Peng** Beihang University

16:15 23CETP-0007
Optimization of Energy Management Strategy for Multi-Mode Hybrid Transmission Based on Condition Prediction
JIANG Yutong Beijing University of Science and Technology

16:30 23CETP-0008
Torsional Vibration Attenuation of HEV Drivetrain Featuring on a Controllable Damper
LIU Shaofei Hefei University of Technology

论文宣讲

8月26日

会议室 3

电池和管理系统

主席: 胡晓松 重庆大学 戴海峰 同济大学

23CETP-0003
15:45 高级非线性观测器对锂离子电池状态估计的灵敏度分析
Muhammad Saeed 重庆大学

23CETP-0037
16:00 基于恒压充电量的锂离子电池衰减拐点识别
陈建国 上海理工大学

混合动力专用变速器

主席: 何洪文 北京理工大学 董鹏 北京航空航天大学

23CETP-0007
16:15 基于工况预测的多模混合动力变速器能量管理策略优化
姜禹彤 北京科技大学

23CETP-0008
16:30 采用可控阻尼器的混合动力汽车传动系统的扭转减振
刘少飞 合肥工业大学

2023 汽车动力总成多元化技术国际论坛 通过双盲同行评审论文列表

以下论文将由 SAE International 正式出版发行，并收录至 EI 检索。
正式出版后可至 SAE Mobilus 数字图书馆查阅：<https://saemobilus.sae.org/>

正式论文出版编号	投稿编号	论文题目
2023-01-7000	23CETP-0003	Sensitivity Analysis of Advanced Non-linear Observer for States Estimation of Lithium ion Batteries
2023-01-7001	23CETP-0020	A Novel Hybrid Method Based on the Sliding Window Method for the Estimation of the State of Health of the Proton Exchange Membrane Fuel Cell
2023-01-7002	23CETP-0009	Matching and Optimization Design of Electric Drive Assembly Mounting System of Electric Vehicle
2023-01-7003	23CETP-0005	An Experimental Study on Soot Particles Size Distribution and Nanostructure Evolution at Different Tailpipe Positions of a Dedicated Hybrid Engine
2023-01-7004	23CETP-0036	Simulation Study on the Effect of In-Cylinder Water Injection Mass on Engine Combustion and Emissions Characteristics
2023-01-7005	23CETP-0006	Simulation Study on High Expansion Ratio Dedicated Hybrid Engine for Hybrid Commercial Vehicle Application
2023-01-7006	23CETP-0034	Energy Transformation Propelled Evolution of Automotive Carbon Emissions
2023-01-7007	23CETP-0013	Energy Management Based on D4QN Reinforcement Learning for a Series-parallel Multi-speed Hybrid Electric Vehicle
2023-01-7008	23CETP-0022	Inlet Gas Temperature Control Technology for PEMFC Stack Test Benches
2023-01-7009	23CETP-0019	Experimental Study on Transient Response Characteristics of Commercial-size PEMFC under Varying Load
2023-01-7010	23CETP-0018	Study on Transient Tolerance Concentration of Cathode Ammonia in Proton Exchange Membrane Fuel Cells
2023-01-7011	23CETP-0011	Analysis of Dynamic Characteristics and Load Sharing Performance of Electric Driven Planetary Gear System Based on Electromechanical Coupling Model
2023-01-7012	23CETP-0031	Assisted Steering Control for Distributed Drive Electric Vehicles Based on Combination of Driving and Braking
2023-01-7013	23CETP-0021	Prediction of the Remaining Useful Life of the Proton Exchange Membrane Fuel Cell with an Integrated Health Index
2023-01-7014	23CETP-0023	Experimental Study on Energy Consumption and Emissions of Heavy-duty Hybrid Dump Truck
2023-01-7015	23CETP-0017	Leakage and Diffusion Analysis and Safety Research of Onboard Hydrogen Systems in Different Space
2023-01-7016	23CETP-0002	Optimization of Microporous Layer Composition at Varying Humidities for High-Performance Polymer Exchange Membrane Fuel Cell
2023-01-7017	23CETP-0026	Research on Injection Characteristics of Marine Ammonia Fuel Injector under Wide Temperature Range



2023-01-7018	23CETP-0045	Simulation Study of the Effect of Nozzle Position and Hydrogen Injection Strategy on Hydrogen Engine Combustion Characteristic
2023-01-7019	23CETP-0012	Analysis and Control of Gear Rattle Noise for E-axle
2023-01-7020	23CETP-0030	An Operating Point Adjustment Model Using PMP-GWO-Bi-LSTM for Range Extended Electric Vehicle
2023-01-7021	23CETP-0033	Design of a Permanent Magnet Biased Radial Magnetic Bearing for Energy Storage of Vehicle Flywheels
2023-01-7022	23CETP-0008	Torsional Vibration Attenuation of HEV Drivetrain Featuring on a Controllable Damper
2023-01-7023	23CETP-0025	Numerical Investigations on Formation Process of N2O in Ammonia/Hydrogen Fueled Pre-chamber Jet Ignition Engine
2023-01-7024	23CETP-0029	Numerical Simulation of the Effect of In-cylinder Water Spraying on the Knock and Combustion Characteristics of a Hydrogen-argon Oxygen Engine
2023-01-7025	23CETP-0046	LES Study of the Mixing Process and Cyclic Variation of a Direct-Injection Hydrogen Engine
2023-01-7026	23CETP-0043	Improving Dynamic Response of PEMFC Anode Pressure in Dropped Load Scenarios through Split Range Control
2023-01-7027	23CETP-0041	Analysis of Rotor Dynamics Characteristics of Roots Hydrogen Circulation Pump
2023-01-7028	23CETP-0016	Research on the Control Method of Staggered Parallel Boost Structure in Fuel Cell System
2023-01-7029	23CETP-0024	A Multi-sine Excitation Signal Optimization Strategy for EIS Measurement of High-power Fuel Cells
2023-01-7030	23CETP-0039	Gear Fault Diagnosis for Vehicle Electric Drive Systems Based on Stator Currents
2023-01-7031	23CETP-0040	Transient Temperature Field Prediction of PMSM Based on Electromagnetic-heat-flow Multi-physics Coupling and Data-driven Fusion Modeling
2023-01-7032	23CETP-0007	Optimization of Energy Management Strategy for Multi-Mode Hybrid Transmission Based on Condition Prediction
2023-01-7033	23CETP-0037	Knee-point Identification of Battery Degradation Trajectory Based on Constant Voltage Charging Capacity Variation
2023-01-7034	23CETP-0027	Simulation Study on EGR Condensate Flow and Uniformity of Each Cylinder in the Intake Manifold
2023-01-7035	23CETP-0028	Research on the Influence of Different Working Conditions on the Driving Range, Energy Consumption and Emissions of Heavy-duty Hybrid Buses
2023-01-7036	23CETP-0042	Research on Cold Start Strategy of Vehicle Multi-stack Fuel Cell System
2023-01-7037	23CETP-0044	Research on Air Mass Flow and Pressure Control Method for the Multi-stack Fuel Cell System Based on Model Predictive Control



联系我们

中国上海市虹口区四川北路1350号利通广场2506室 (200080)

电话: +86-21-6140-8900

全球官网: www.sae.org

中国办公室: chinaoffice@sae.org

传真: +86-21-6140-8901

中文网站: www.sae.org.cn



SAE 微信公众号