# SAE 2018 新能源汽车国际论坛 (第六届) NEW ENERGY VEHICLE FORUM

2018年 9月11-12日 上海颖奕皇冠假日酒店

September 11-12, 2018 Crowne Plaza Shanghai Anting Golf, Shanghai, China



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### 目录

主办单位介绍	2
会议概览	4
会场平面图	5
会议日程	10
演讲嘉宾简历	18
赞助商与展商介绍	29

### WHATS INSIDE

Hosts Introduction	2
Event-At-A-Glance	4
Floor Plan	5
Technical Program	10
Speaker Biographies	18
Spansors & Exhibitors Drofiles	20

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我们通过全面的项目、产品和服务,为行业提供信息、工具和技术,以帮助专业人士更好地完成工作,并保证下一代业内工程师能够获得良好的职业发展。

自 1905 年起,SAE 就开始建立航空航天、汽车、商用车及工程农用机械领域的工程师网络,整合他们所需要的技术资源,以满足他们终生学习的需要,推动行业技术的进步与发展。

SAE International 第一任副主席是一个名叫亨利·福特(美国福特汽车公司创始人)的才志兼备的工程师,在最早的发展阶段,SAE 就获得了奥维尔·莱特(飞机发明人之一)等人的支持。在此基础上,我们建立了一个紧密合作、信息互通的广泛的中立性平台,并制定了许多首创标准。今天,SAE 已经成为了全球公认最权威的航空、汽车、商用车及工程农用机械工程知识来源,而信息共享仍然是我们的基本原则。

A professional society, SAE International is the authority on vehicle engineering. We develop more vehicle technical standards—and more aerospace standards—than any other organization. We offer the largest library of vehicle engineering content. And, we bring together the largest global network of engineers in the world.

Through a comprehensive collection of programs, products and services, we supply the information, tools, and technical know-how to help today's professionals do their jobs better while we ensure the development of the next generation of mobility engineers.

Since 1905, SAE has connected automotive, aerospace, and commercial vehicle engineers to each other and the technical resources needed to foster a lifetime of learning, solutions to improved vehicle technology, and the advancement of the mobility industry.

SAE International—whose first vice president was an up-and-coming engineering talent by the name of Henry Ford and included early supporters like Orville Wright—was based on providing a platform for collaborative and informed dialog and the impetus of its earliest standardization efforts. Today, the sharing of information remains at its core, with SAE being acknowledged globally as the ultimate knowledge source for mobility engineering.

### **玄亭・上海国际汽车城**

Anting • Shanghai International Automobile Cit 人 • 车 • 城 市 的 完 美 融 合 2001年9月,经上海市委市政府决策,在上海安亭地区建设上海国际汽车城,规划面积100平方公里。经过十七年的开发建设,总投资超过1100亿元人民币。目前,汽车城拥有上汽大众、德尔福派克、科世达华阳等263家汽车整车及零部件企业,211个研发机构,6个国家级公共服务平台,12家总部类企业,106家汽车技术研究中心,152家高新技术企业,超过2万名专业工程师等行业人才。

在市、区两级政府的指导下,汽车城正重点推进以"EVCARD 电动汽车分时租赁"为创新项目的电动汽车国际示范城市建设;打造综合性产业和示范应用基地为目标的我国首个智能网联汽车试点示范区,以汽车创新港、同济科技园、新能源汽车及关键零部件产业基地为重点的汽车产业高地建设。

2017年,汽车城完成规模以上工业总产值 3592.6亿元,同比增长 11.1%,其中汽车产业完成规上总产值 3373.0亿元,同比增长 11.3%。上海国际汽车城在"产城深度融合发展"目标的指导下,努力将汽车城建设成为世界汽车产业中心。

The name Shanghai International Automobile City (SIAC) was first proposed in September 2001 by the municipal government as an important part of Shanghai's industrial development strategy. So 17 years have passed with an investment of 110 billion RMB in fixed assets. Until now, SIAC have 263 OEM and AUTO parts enterprises, 211 R&D institutions, 6 national public service platforms, 12 headquarters enterprises, 106 automotive technology research centers, 152 high-tech enterprises, and more than 20,000 professional engineers.

In the end of 2017, the gross industrial output value above designated was 359,260,000,000 RMB. Based on keeping perfect balance among human beings, vehicles, and city, SIAC Group keens to make the automobile city become the center of world automobile industry.

### 行业支持单位 INDUSTRY SUPPORTER



9月11日・September 11	
09:00	欢迎致辞 Welcome Speech
09:20	主旨演讲 Keynote
10:20	茶歇 Tea Break
11:00	汽车研发 Vehicle Research and Development
12:00	午餐Lunch
13:30	汽车研发 Vehicle Research and Development
15:30	茶歇 Tea Break
16:00	专家座谈 - 解决新能源汽车面临的挑战 Panel Discussion - Addressing the Challenges of NEV
	9月12日・September 12
09:00	9月12日・September 12 主旨演讲 Keynote
09:00 09:45	
	主旨演讲 Keynote
09:45	主旨演讲 Keynote 电池与能量存储系统技术 Battery & ESS Technology
09:45 10:15	主旨演讲 Keynote 电池与能量存储系统技术 Battery & ESS Technology 茶歇 Tea Break
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09:45 10:15 10:45 11:45	主旨演讲 Keynote 电池与能量存储系统技术 Battery & ESS Technology  茶歇 Tea Break 电池与能量存储系统技术 Battery & ESS Technology  午餐 Lunch

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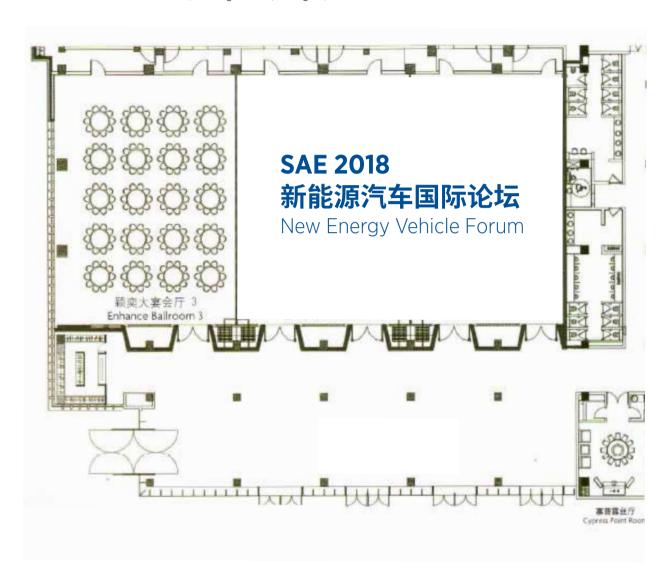
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Enhance Ballroom 1&2, 1F - Crowne Plaza Shanghai Anting Golf

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	SEPTEMBER 11	
9:00	Welcome Speech Billy XU General Manager, China - SAE International Shanghai International Automobile City	
	KEYNOTE	
9:20	Using "Big Data" to Better Design an Electrified Vehicle Brett Hinds Ford Motor Company	
	ABSTRACT  Modern vehicles are equipped with embedded modems that broadcast vehicle operating parameters back to the OEM. The insight gleaned from this data have a significant potential to impact the design of future vehicles. MyFord Mobile and FordPass are 2 platforms used at Ford Motor Company to collect non-PII data from electrified and conventional vehicles respectively. This paper outlines how "Big Data" tools are used to analyze these large data sets. It also provide some analysis examples on how the data is used to better design the next generation electrified vehicle systems and components.	
9:50	The Policy Management Thinking & Industry Influence of China's Dual-Credit Scheme  Dr. Dongchang ZHAO China Automotive Technology & Research Center  ABSTRACT  By focusing on management thoughts and policy trends of dual award points for both fuel consumption and new energy, the report will analyze the impact of policy requirements on industrial development and further discuss	
10:20	development trend of energy-saving and new energy vehicles in future.  Tea Break	
	VEHICLE RESEARCH AND DEVELOPMENT	
11:00	Propulsion Technologies: "An Integrated Path Forward"  Dr. Chengwu DUAN General Motors	
11:30	Geely's New Energy Strategy and Bo Rui GE Development Dr. Jianfeng ZHANG GEELY New Energy R&D Institute  ABSTRACT Present "Blue Geely Initiative" and new energy development strategy. Geely will develop hybrid vehicles, pure electric vehicles, fuel cell vehicles and other save energy vehicles. Hybrid vehicles may meet ongoing customer needs because of battery limitation. Geely 7DCTH platform, integrated transmission and electric motor, power battery, integrated DC/DC and motor controller will also be introduced. 7DCTH is Geely newly developed P2.5 platform which has one motor and two clutches. A motor is mounted on the even axis. This system can drive the vehicle only by the motor, or only by the engine, or by both of them. 7DCTH platform is widely used in Geely automotive and over 10 vehicle models are under development. Bo Rui GE has started production this year. We develop HCU application software inhouse based on AUTOSAR architecture and use model based development process. Through software platformization, standardization, and automation, we reduce software development cost.	
	LUNCH	

### 9月11日

### 9:00 欢迎致辞

徐秉良 SAE International 中国区总经理

上海国际汽车城领导

### 主旨演讲

### 9:20 运用"大数据"优化设计电动汽车

Brett Hinds 福特汽车

### 摘要

现代汽车配备的嵌入式调制解调器能够将汽车运行参数反馈给 OEM。从这些数据得出的洞见可能在很大程度上影响未来汽车的设计。福特汽车公司分别使用 MyFord Mobile 和 FordPass 两个平台来搜集电动汽车和传统汽车的非 PII 数据。本文简述了如何使用"大数据"工具来分析这些大型数据集,并提供了一些分析案例以说明如何使用数据来更好地设计下一代电气化汽车系统和组件。

### 9:50 双积分政策管理思路与产业影响

赵冬昶 博士 中国汽车技术研究中心

### 摘要

演讲主要围绕油耗与新能源双积分政策的管理思路和政策导向展开,剖析政策要求下对产业发展的影响,进一步探讨未来节能与新能源汽车的发展趋势。

### 10:20 茶歇

### 汽车研发

11:00 推进技术: "一体化前进之路"

段诚武 博士 通用汽车

### 11:30 **吉利新能源战略以及博瑞 GE 的研发**

张剑锋 博士 吉利新能源研究院

### 摘要

借助"蓝色吉利行动"和新能源发展战略,吉利将开发混合动力汽车、纯电动汽车、燃料电池汽车和其他节能汽车。考虑到电池限制,混合动力车辆可满足不断增长的客户需求。 吉利 7DCTH 平台、集成传动和电动机,动力电池,集成 DC/DC 和电动机控制器也将陆续推出。 7DCTH 是由吉利开发的全新P2.5 平台,包括一个安装在双数轴上的电机和两个离合器。 该系统可以实现仅由电动机、仅由发动机或由两者驱动汽车。 吉利汽车将广泛采用 7DCTH 平台,且目前正在 开发 10 多种车型。博瑞格已于今年开始生产。目前我们在内部开发基于 AUTOSAR 架构的 HCU 应用软件,并使用基于模型的开发过程。通过软件平台化、标准化和自动化,我们降低了软件开发的成本。

### VEHICLE RESEARCH AND DEVELOPMENT

### 13:30 New Technology Trends of Electric Vehicle Development

Dr. Ping CHEN BAIC New Technology Institute

#### **ABSTRACT**

As ten years have passed since China started developing electric vehicles, profound adjustments and revolutions have happened in national strategies, policies and regulations, market and product layouts, and global companies' strategies. Meanwhile new changes inside and outside the industry have created new technology trends, such as EIC system improvement and ICV. The presentation will focus on the new environment of EV industry and technology trends and elaborate on BAIC's electrification strategy and layout.

### 14:00 **Development of NEV Charging Standards in China**

Ferhat Semet BMW R&D Center

#### **ABSTRACT**

Under the support and guidance of policies and also the drive from the market, China has become the leading power in e-Mobility. The relevant new energy vehicle charging standards have also formed a relatively comprehensive ecosystem encompassing areas such as charging station, charging interface, charging point operation, charging services and etc. The speaker tries to give a holistic view of the current landscape in NEV charging standardization and identify the opportunities and challenges that lie ahead in the charging industry.

### 14:30 **Volvo Cars Electrification Journey**

Michael WONG Volvo R&D China

### **ABSTRACT**

- Volvo Cars electrification strategy
- Electrification key challenges
- Module system concept
- Opportunities in E-axle Drive and HV Battery

### 15:00 **Developing The Next Generation Smart Device**

 $\textbf{David Twohig} \ \mathsf{BYTON}$ 

#### **ABSTRACT**

Mr. David Twohig, BYTON Chief Vehicle Engineer, will introduce China's NEV landscape from a historic point of view. Against this backdrop, he will elaborate on how BYTON vehicles are built as a next generation smart device to "let life continue on the move" via the seamless blending of digital technology and automobile manufacturing. In particular, he will highlight the importance of innovative UI/UX, intuitive design, and an EV platform for smart and connected cars that unlock the potential of future mobility.

#### 15:30 Tea Break

### PANEL DISCUSSION - ADDRESSING THE CHALLENGES OF NEV

### 16:00 **MODERATOR**

**Dr. Lu XIONG** New Energy Automotive Engineering Center of Tongji University

### **PENALISTS**

Dr. Kevin Tallio Ford Motor CompanyMichael WONG Volvo R&D ChinaDavid Twohig BYTON

### 汽车研发

### 13:30 电动汽车开发的新技术趋势

陈 平 博士 北汽新技术研究院

### 摘要

中国电动汽车从起步到发展已历十载。无论是国家的战略定位、政策法规的支持,还是市场及产品的布局、全球企业的战略,都经历了一些列深入的调整与变革。同时,内外部环境的新变化带来了以三电系统性能提升、智能网联等新的技术发展趋势。本演讲将围绕以上两部分内容(即电动产业的新产业环境和技术发展趋势),并结合北汽集团在电动化方向的战略布局做以阐释。

### 14:00 中国新能源汽车充电标准发展概况

Ferhat Semet 宝马北京研发中心

### 摘要

在政策引导扶持和市场驱动下,中国已经成为了电动车出行的领导力量。新能源汽车充电的相关标准也已经逐渐形成了一个比较完善的标准生态系统,它包括了充电设施、充电接口、充电站建设运行、充电服务等方面。发言人尝试做出对于新能源汽车充电标准化工作的一个总体介绍,并讨论充电行业未来所面临的机遇与挑战。

### 14:30 沃尔沃汽车电气化之旅

Michael WONG 沃尔沃中国研发中心

### 摘要

- 沃尔沃汽车的电气化策略
- 电气化的关键难题
- 模块系统概念
- E-Axle 电动轴与混合动力汽车电池的机遇

### 15:00 研发下一代智能终端

**David Twohig** 拜腾

### 摘要

拜腾首席工程师谭文韬先生专注于智能化时代的汽车研发,将从历史对比角度分析当下中国新能源汽车格局,阐述拜腾在这样的大环境下通过深度融合汽车开发与数字技术,打造下一代智能终端,让人们的生活在车中延续。此外,他将重点介绍创新的用户界面,智能可视化的设计与专为电动车打造的平台为消费者开启未来出行生活的无限可能。

### 15:30 茶歇

### 专家座谈 - 解决新能源汽车面临的挑战

### 16:00 主持人

熊 璐 博士 同济大学 新能源汽车工程中心

### 嘉宾

Kevin Tallio 博士 福特汽车

Michael WONG 沃尔沃中国研发中心

**David Twohig** 拜腾

### **SEPTEMBER 12 KEYNOTE** 9:00 EVs as a Driver of Grid Modernization and Sustainable Nuclear Power© Paul Sheridan DDM Consulting **BATTERY & ESS TECHNOLOGY** 9:45 The Application Trend of Thermal Interface Materials in EV Power System **Dr. Yuan ZHAO** Henkel Corporation **ABSTRACT** Lithium ion batteries are used a wide range of devices including smart phones, notebook computers, medical equipment, power tools, and electric vehicles, etc. As ever-increasing demand for higher power densities and larger capacities, the lithium ion batteries become more and more thermally limited. For example, these batteries need to acquire and release electricity at very high current levels, which inevitably generates excessive heat and drastically increase battery temperature. However, temperature limits for Lithium-ion batteries are quite narrow (typically 0 to 45 C). High temperatures (above 45 C) during charging process may lead to battery degradation or even premature failure. Therefore, controlling and regulating battery temperature is critical for normal operations of any devices powered by Lithium-ion batteries. This presentation will give an overview of Henkel's thermal management materials for NEV batteries. Numerical studies will be presented to demonstrate thermal characteristics and performance advantages of the various concepts for Lithium-ion batteries. 10:15 Tea Break 10:45 **New Application of Mission-Critical Sensing Technology on NEV Powertrain System Kewin JIA** Sensata Technologies **ABSTRACT** New sensing solutions on New Energy Vehicle are required for NEV market development and technology upgrade in order to meet more critical requirements on Safety and Energy Efficiency. It is getting even more critical for NEV success to have innovative sensing technology and solutions on system level. From key system needs of Battery, E-motor and High Voltage Module, the technology development and new product application were shared about new sensing solutions on NEV powertrain system. 11:15 **Design and Test Challenges of EV/HEV Chi CHEN** Keysight **ABSTRACT** With the rapid development of NEV industry all over the world, China also follows the global pace closely and sees significant development in lithium battery and power vehicle. As an excellent partner for global testing, Keysight offers various solutions for vehicle and new energy industries. Keysight will take this chance to highlight testing solutions for power vehicles, beginning with charging pile, on-board charging, BMS, battery performance and inverter performance.

### LUNCH

### 9月12日

### 主旨演讲

### 9:00 电动汽车 - 电网现代化与可持续核电的驱动力

Paul Sheridan DDM Consulting 咨询公司

### 电池与能量存储系统技术

### 9:45 电动汽车动力系统中的热界面材料的应用发展趋势

Yuan ZHAO 博士 汉高集团

### 摘要

锂离子电池广泛用于各种设备,包括智能电话、笔记本电脑、医疗设备、电动工具和电动车辆等。随着对高功率密度和大容量需求的不断增加,锂离子电池越来越受到热限制。例如,这些电池需要在非常高的电流水平下进行电力获取和释放,这不可避免地产生过热并大幅提高电池温度。然而,锂离子电池的温度极限相当窄(通常为0至45℃)。充电过程中的高温(45℃以上)可能导致电池退化甚至过早失效。因此,控制和调节电池温度对于任何由锂离子电池供电的设备的正常运行都是至关重要的。

本演讲将概述汉高的 NEV 电池中的热管理材料,数值研究将展示锂离子电池的各种概念的热特性和性能优势。

### 10:15 茶歇

### 10:45 新能源动力系统关键传感技术的新应用

贾永平 森萨塔科技

### 摘要

新能源汽车的市场发展和技术升级带来了更多传感技术的新需求,以满足日益发展的更苛刻的安全和节能要求。如何在系统上发展和创新传感解决方案成为新能源发展成功中至关重要的一环。本演讲着重从新能源动力系统关键部件电池、电机和高压模块入手,分享了创新传感技术和解决方案的发展和新产品应用。

### 11:15 电动与混动车设计与测试挑战

陈 篪 是德科技

### 摘要

伴随着全球热门的新能源汽车产业迅速增长,中国紧跟着世界步伐,在锂电池和动力汽车领域有着巨大的发展,是德科技作为全球测试的优秀合作伙伴在汽车和新能源产业上有着众多的解决方案。是德科技将利用此次机会重点介绍一下在动力汽车上的系列测试解决方案,从充电桩开始,到车载充电、BMS、电池性能和逆变器性能的全套测试方案等。

### 午餐

### MOTOR AND ELECTRIC CONTROL/CHARGING

### 13:30 Distributed Drive Electric Vehicle Control System Research, Development and Practice

Dr. Lu XIONG New Energy Automotive Engineering Center of Tongji University

#### **ABSTRACT**

Electrification is the trend of automobile development. In order to achieve higher efficiency, more energy saving and active safety on electric vehicles, vehicle dynamics control devices have been the focus of research and development in automobile industry. A distributed drive electric vehicle (DDEV) equipped with wheel-side motors or in-wheel motors has advantages of better controllability, shorter transmission chain, more compact structure and higher interior space utilization rate.

DDEVs can fast and precisely apply driving and braking torque control on single wheel, and distribute torque control between axes and among wheels within motor's working range. A variety of dynamics control functions can be easily implemented in DDEVs. In the last twenty years, Tongji University has done a lot of R&D and application work in DDEV control area. Acceleration slip regulation (ASR) and anti-brake system (ABS) can be realized by controlling the drive or brake torque of the motor on each wheel. Vehicle's active safety performance can be improved by handling improvement control (HIC) and electronic stability control (ESC) through torque vectoring control, where torques are allocated directly among wheels. At the same time, vehicle's dynamic performance can be improved with motor torque and projected environment parameter such as pavement adhesion coefficient, and vehicle states and key parameters such as mass, tire-road friction coefficient, speed, sideslip angel, etc. More energy can be saved by making full use of motor's high efficiency range and regenerative braking.

### 14:00 A Modern Electric Bus Fleet: Improving Public Transit with System-Level Modeling

Junlin XU CYBERNET

### **ABSTRACT**

As cities across the world continue to increase in both population and density, public transportation plays a critical role in creating liveable cities. The current adoption of electrified transportation, however, presents a wide array of new challenges that must be carefully considered before these systems are implemented.

In order to ensure an optimized implementation of electrified bus fleets, Maplesoft developed a system-level models of bus dynamics. These models allowed to determine optimal locations for charging stations, energy efficiency of buses, and a range of other factors when considering implementation for a particular community. By working with system-level models, we could make well-informed decisions without the need for large-scale testing on physical buses.

In this report, we will introduce a model-based approach to answer design questions early and deliver optimized strategies before the need for physical testing.

### 电机、电气控制或充电系统

### 13:30 分布式驱动电动车控制系统的研究、开发与实践

熊璐博士 同济大学 新能源汽车工程中心

### 摘要

电动化是汽车发展的趋势。为了更好地实现电动汽车高效节能与主动安全的目标,车辆行驶动力学控制 装置一直是汽车工业研发的焦点。基于轮边或轮毂电机的分布式驱动电动汽车具有可控性好、传动链短、 结构紧凑、车内空间利用率高等优点。

分布式驱动电动汽车可以在电机能力范围内精确、快速地实现单个车轮驱制动力矩控制和轴间、轮间转矩分配控制,便于实现先进动力学控制功能。近二十年来,同济大学在分布式驱动电动汽车控制领域开展了大量的研发并进行实践。通过单个车轮驱动力和制动力的独立控制可以实现制动防抱死(ABS)、驱动防滑(ASR)功能,通过直接横摆力矩控制实现操纵性改善控制(HIC)、电子稳定性控制功能(ESC),提高车辆主动安全性能;同时结合电机转矩信息获得路面附着系数等环境参数以及质量、车速等车辆关键参数和状态信息,改善车辆动力学性能;充分利用电机高效区间,结合回馈制动策略可以更好地节约电能。

### 14:00 现代电动巴士车队:运用系统级模型改进公共交通

徐俊林 莎益博

### 摘要

随着世界各地人口的不断增长、人口密度的不断增大,城市公共交通成为了打造宜居城市的关键。然而,电气化交通系统在城市中的部署也带来了很多新的挑战。我们必须争取在这些交通系统正式投入运行前将这些挑战——解决。

加拿大软件公司 Maplesoft 开发了一款系统级的公交车动力模型,来保障电气化公交车队的最优运作。 这些模型能够确定电动公交车在某一区域投入使用前需考虑的诸多因素,如充电站的最优选址、电动公 交车的能效等。有了系统级的模型,我们无需用实体公交车进行大规模实验就可以掌握充分信息,做出 良好决策。

在本次演讲中,我们将介绍在进行实体测试前,如何在设计流程早期利用模型解决设计问题,并制定出优化的设计策略。

### 14:30 High Efficiency Wireless Charging of Electric Vehicles

Dr. Chunting (Chris) MI San Diego State University

#### **ABSTRACT**

Wireless power transfer (WPT) technology offers significant improvement in convenience and electric safety for electric vehicle (EV) charging. Both capacitive and inductive wireless power transfer technology have been investigated for various applications. Experiments show that tens of kilowatts of power transfer can be achieved over 200mm distance with an efficiency of 97% (DC-DC), and an alignment tolerance of up to 300mm.

In this presentation, we will first look at the basic principle of WPT and its applications. Then we will show that safety is still one of the major concerns of WPT system for both inductive and capacitive power transfer. Then, we will discuss two unique topologies, the double-sided LCC topology which is one of the recommended topologies by the SAE J2954 standard for EV passenger car applications, and the LCLC topology for capacitive wireless power transfer. Finally, we will show some case studies that can be potentially commercialized with economic and safety viability. The application of WPT in various automotive vehicles will be discussed, including automatic guided vehicles (AGV), low-speed maglev trains, transit buses, elevators, delivery trucks, and fast charging of passenger cars.

### 15:00 Tea Break

15:30

### Transient Lateral Performance of a Four Wheel In-Wheel-Motor Torque Vectoring Strategy

**Gary ZHONG** Protean Electric

#### **ABSTRACT**

In this presentation we investigate, via standard ISO tests and our own quantitative tests, torque vectoring techniques and how they affect the lateral performance of vehicles. Real world tests and results will be presented using data generated from a vehicle equipped with four in-wheel-motors with full independent control. Meanwhile, we also present the study on the existing typical Torque Vectoring Applications in the industry. The conclusion from all the studies and tests is that torque vectoring improves driving stability and cornering experiences. Protean and ProteanDrive technology are also introduced in this presentation to show the IWM torque vectoring application's maturity.

### 16:00 The Solution of DC Link Capacitor

Hongkai WANG EAGTOP

### **ABSTRACT**

Infineon module-based two-sided water-cooling + capacitor integration solution; design and selection of EV on-board film capacitor; selection, design and applications of EV power electronics.

### 14:30 电动汽车的高效无线充电技术

米春亭 博士 美国圣迭戈州立大学

### 摘要

无线电力传输(WPT)技术可以极大地增进电动汽车充电的便利性与电力安全。目前,人们正在积极探索电感耦合式无线电力传输和电容耦合式无线电力传输技术的不同应用前景。实验证明,在无线电力传输技术的帮助下,对电动车进行直流充电,可以实现万瓦级的传动功率,传输效率可达 97%,传输距离可达 200 毫米以上,而准直容差则可达 300 毫米。

本次演讲中,我们首先会谈及 WPT 的基本原则及其应用,之后我们会讲到安全问题,无论是电感耦合 WPT 还是电容耦合 WPT,安全问题都是 WPT 系统设计时所关注的最为重要的问题。此后我们将讨论两种不同的拓扑模型,一种是双面 LCC 拓扑,即 SAE J2954 标准所推荐的电动乘用车用拓扑模型之一,另一种是适用于电容耦合 WPT 的 LCLC 拓扑。最后,我们会列举一些展示 WPT 系统商业潜能与经济安全效益的应用实例。最后,我们会探讨 WPT 在包括自动导引车(AGV)、低速磁悬浮列车、公共巴士、电梯、运货车等不同种类汽车中以及 WPT 在小客车快速充电中的应用。

### 15:00 茶歇

### 15:30 应用扭矩矢量控制的轮毂电机四驱车辆瞬态侧向性能研究

仲小龙 Protean Electric

### 摘要

我们通过标准的测试方式和定量的测试研究了扭矩矢量控制技术及其对车辆侧向性能的影响。演讲报告也会演示搭载四台轮毂电机并使用完全独立控制的车辆实测数据及结果。同时,我们还展示了行业中当前典型的扭矩矢量控制应用的研究。从这些研究和测试得出一致的结论是扭矩矢量控制改善了驾驶稳定性和过弯感受。另外,我们也对 Protean 和 ProteanDrive 技术做了简要介绍,以展示基于轮毂电机的扭矩矢量应用的日趋成熟。

#### 16:00 车载直流支撑电容器解决方案

王宏凯 鹰峰电子

### 摘要

基于英飞凌模块的双面水冷散热 + 电容器集成方案; 电动汽车车载薄膜电容器设计、选型介绍; 电动汽车电力电子选型、设计应用方案。

### **Brett Hinds**

### 福特汽车 电气化动力总成系统 总工程师

Brett Hinds 于 1990 年毕业于劳伦斯理工大学并获得 BSME 学位,之后便加入了福特。后来他从奥克兰大学获得了工程管理硕士学位。目前 Hinds 正在攻读班尼迪克大学的领导力博士学位。

Brett 将过去 28 年的整个职业生涯都贡献给了福特的发动机和动力总成产品开发部门。他曾在 多个管理岗位上任职,包括研发部门下属的先进发动机设计与发展部门经理和福特全球小型汽油和柴油发动机的发动机设计首席工程师。

从 2015 年开始,Brett 便投身于电气化动力总成的相关工作。他一开始是福特混合动力和电池电动动力总成系统的首席工程师,目前出任能量储存和高压系统首席工程师一职。



### **Brett Hinds**

### Chief Engineer, Electrified Powertrain Systems Ford Motor Company

Brett Hinds has been with Ford since 1990 upon graduation from Lawrence Technological University with a BSME degree. He later earned a MS in Engineering Management from Oakland University and currently working on his PhD in Leadership at the Benedictine University.

Brett has spent his entire 28 year career with Ford in the area of engine and powertrain product development. He has served in several management positions including Manager of the Advanced Engine Design and Development Department within the Research organization and Chief Engineer of Engine Design for Ford's global small gasoline and diesel engines.

Brett has been involved in Electrified Powertrains since 2015, first as Chief Engineer for Ford's Hybrid and Battery Electric Powertrain Systems and more recently as the Energy Storage and High Voltage Systems Chief Engineer.

### 赵冬昶 博士

### 中国汽车技术研究中心 数据资源中心 副总工程师

中国人民大学产业经济学博士,高级工程师,高级经济师,中国汽车技术研究中心有限公司首席专家,数据资源中心副总工程师,工业和信息化部新能源汽车补贴清算审核专家,能源基金会、CCTP 执委会等多家机构专家委员。

曾参与国家社会科学基金和自然科学基金多项;重点参加完成联合国工业发展组织委托课题《中国汽车节能战略研究》、工信部项目《乘用车企业平均燃料消耗量与新能源汽车积分管理办法研究》、《节能与新能源汽车推广政策实施效果研究》、《节能与新能源商用车积分管理制度》、《汽车燃料消耗量数据管理系统开发与应用》等多项,策划并撰写《中国汽车节能发展报告》系列图书,在产业发展趋势和汽车节能政策方面开展深入研究。



### Dr. Dongchang ZHAO

### Deputy Chief Engineer, Automotive Date Center China Automotive Technology & Research Center

Dr. Dongchang Zhao obtained his PhD in Industrial Economics from Renmin University of China and he is a senior engineer and senior economist. Now he serves as Chief Expert of China Automotive Technology and Research Center Co., Ltd. and Deputy Chief Engineer of Automotive Data Center. He is also an expert of NEV subsidy clearing and review of Ministry of Industry and Information Technology, and an expert committee member of Energy Foundation, CCTP Executive Council and other organizations.

He has engaged in various programs of the National Social Science Fund of China and the National Natural Science Fund of China, especially Research on China's Automotive Saving Strategy, a subject commissioned by the United Nations Industrial Development Organization, and several projects of MIIT, including Research on Average Fuel Consumption of Passenger Vehicle Companies and Regulations of NEV Award Point, Research on the Implementation Effect of Policies for Promoting Energy-saving and New Energy Vehicle, Regulations on Award Points for Energy-saving and New Energy Commercial Vehicle, and Development and Application of Data Management System of Vehicle Fuel Consumption. He has also planned and wrote Report on Vehicle Energy Conservation Development in China books, carrying out in-depth research on industrial development trend and vehicle energy conservation policies.

### 段诚武 博士

### 通用汽车 中国研发部门研发经理

段诚武博士是通用汽车中国研发部门的研发经理。他领导电气化动力传动系统的研发活动,重点关注下一代高性能电驱系统。他拥有 5 项国际授权专利,开发了数项通用汽车内部研发工具和方法,并有超过 20 项国际专利申请。他在国际知名的期刊和会议上发表超过 20 篇学术论文。段诚武博士是英国技术工程学会会士,国际自动机工程师学会和美国机械工程师学会活跃会员。他本科毕业于上海同济大学,并取得美国阿拉巴阿大学硕士学位和美国俄亥俄州立大学博士学位。



### Dr. Chengwu DUAN

### Lab Group Manager General Motors

Dr. Chengwu Duan is the lab group manager from GM R&D in China. He leads the R&D activities of electrified power transfer system, focusing on next generation electric drive. He holds 5 international patents, numerous GM internal Tool/Methods, over 20 pending patents and several defensive disclosures. He has authored over 20 technical papers in reputable journals and conferences. He is a Fellow of Institution of Engineering and Technology (IET), and an active member of SAE and ASME. He has a bachelor degree from Tongji University, a master of science degree from University of Alabama and a PhD degree from The Ohio State University.

### 张剑锋 博士

### 吉利新能源研究院 资深总工程师

张剑峰,2002年获西安交通大学博士学位,2005-2015年供职上海汽车新能源部,2015年加入吉利汽车,担任高级总工程师,负责7DCTH混合平台的开发。



### **Dr. Jianfeng ZHANG**

### Senior Chief Engineer GEELY New Energy R&D Institute

Jianfeng Zhang received his Ph.D degree from Xi'an Jiatong Unversity in 2002. He joined SAIC motor new energy department in 2005-2015, and joined Geely automobile since 2015 as a senior chief engineer. He is responsible for the 7DCTH hybrid platform development.

### 陈平博士

### 北汽新技术研究院 副院长

陈平,博士、教授级高级工程师,自 1998 年起开始从事电动车、混合动力车研发工作。 2000 年 -2009 年在日本日产汽车株式会社工作期间,一直从事当前世界最先进的混合动力车、电动车的研发工作; 2009 年回国加盟重庆长安新能源汽车有限公司,担任公司总工程师、副总经理,负责新能源车研发工作; 2014 年加盟北京新能源汽车股份有限公司,任职总工程师,负责公司技术产品规划战略及产品研发; 2017 年任职北汽集团新技术研究院副院长,负责电动化新技术的应用研发工作。期间主导多款新能源车型的研发工作,承担了包括国家 863 和工信部创新工程等多项新能源汽车项目研发工作,在动力



系统设计、整车控制策略、电池系统设计等三大电核心技术研发上取得了重大成就,是 113 项专利的发明人,期间多次获得国家部委及团体的各种奖项。陈平获得浙江大学工学学士学位,东京工业大学工学硕士学位和清华大学工学博士学位。陈平还任能源国策专家委员会委员、北京新能源汽车产业联盟理事、电动车辆国家工程实验室技术委员会委员、北京市电动车辆协同创新中心科学技术委员会委员、中央企业电动车产业联盟专家等社会职务。

### **Dr. Ping CHEN**

### Vice President BAIC New Technology Institute

Ping Chen is PhD and professor-level senior engineer. He started working on EV and HEV in 1998. During his career in Nissan Japan from 2000 to 2009, he was engaged in the research and development of the most advanced HEV and EV models. He came back to China and joined Chongqing Changan NEV in 2009 as Chief Engineer and VP who presided over the development of NEV. In 2014, he joined BAIC BJEV as Chief Engineer to supervise the planning, strategy and development for technological products. In 2017, he was appointed Vice President of BAIC New Technology Institute to supervise the development of new electrification technologies.

He directed the development of multiple NEV models, as well as several NEV projects including national project 863 and MIIT Innovation Project. He made significant achievements in three core electrification technologies: power system design, vehicle control strategy, and battery system design. He owns 113 patents and a broad range of awards from national departments and organizations. He graduated from Zhejiang University as B.E., and obtained M.S. from Tokyo Institute of Technology and D.E. from Tsinghua University.

Chen is a member of Expert Committee of National Energy Strategies, council of Beijing NEV Industry Union, member of Technology Committee of National Engineering Laboratory for Electric Vehicles, member of Science and Technology Committee of Collaborative Innovation Center for Electric Vehicles, and expert in State-Owned Enterprise Electric Vehicle Industry Alliance.

### **Ferhat Semet**

### 宝马北京研发中心 新能源汽车充电系统经理

Ferhat Semet 是宝马北京研发中心新能源汽车充电系统经理。他专门从事有关电动汽车的研发工作已有4年时间。目前他负责宝马中国在充电领域内的技术需求管理,标准化以及测试验证等方面的研发工作。



### **Ferhat Semet**

### Manager New Energy Vehicle, Charging Systems BMW R&D Center

Ferhat Semet is the Manager for New Energy Vehicles – Charging Systems at BMW R&D Center in Beijing, China. He has specialized in NEV research and development since four years. He currently leads the requirement management, GB/T standardization, test and validation activities in charging for the BMW Group in China.

### Michael WONG

### 沃尔沃中国研发中心 汽车推进系统部高级主管

Michael Wong于 2016年加入沃尔沃汽车公司,目前担任沃尔沃中国研发中心汽车推进系统部门高级主管,负责传统内燃发动机与电动推进系统的研发。在加入沃尔沃之前,Michael 曾在福特汽车与康明斯工作了近 20 年,担任过产品研发、生产、产品策略、车辆整合等领域的众多岗位。他曾在英国、德国、比利时、瑞典、日本和中国工作过。他还参与过多个跨 OEM 合作共享项目,并带领过多个乘用车和商用车应用项目。



### Michael WONG

### Senior Director, Vehicle Propulsion Volvo R&D China

Michael Wong joined Volvo Cars in 2016 and is currently Senior Director, Vehicle Propulsion Unit within Volvo R&D China. His unit responsibility includes both ICE as well as electric propulsion systems. Before joining Volvo Cars, Michael had nearly 20 years' working experience in Ford Motor Company and Cummins, in a variety of roles in product development, manufacturing, product strategy, and vehicle integration. Michael has worked at various locations in UK, Germany, Belgium, Sweden, Japan and China. He has worked on several cross OEM joint co-operation and shared platform projects, and has led projects in both passenger car and commercial vehicle applications.

### **David Twohig**

### 拜腾 首席汽车工程师

谭文韬先生是一位经验丰富的汽车工程高管,在汽车设计与开发领域拥有超过 25 年的跨国工作经验,他具有出色的领导能力与扎实的专业知识,并深谙工程开发与管理,曾凭借个人在汽车工程领域的出色成就获得由英国权威汽车杂志 Autocar 颁发的 Mundy 工程奖。在 BYTON 拜腾,谭文韬先生担任首席汽车工程师,主要负责车身架构、车体装备、车辆底盘与热管理等汽车工程的核心领域,并确保不同工程领域的良好协作,为拜腾未来产品建立统一的工程哲学。



### **David Twohig**

### Chief Vehicle Engineer BYTON

Mr. David Twohig is a seasoned automotive engineering executive with over 25 years of international experience in automotive design and development. He has developed a strong leadership and accumulated solid technical know-how and engineering capability. And he was granted the Mundy Award for Engineering by Autocar Awards 2018 for his great achievements. At BYTON, he serves as Chief Vehicle Engineer, focusing on the core automotive Engineering disciplines of body structures, body equipment, chassis and thermal management, as well as ensuring that the different Engineering disciplines co-operate smoothly to ensure that BYTON's future products have a consistent Engineering philosophy.



### **SAE 2018**

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Vehicle Electrification and Autonomous Vehicle Technology Forum

### 2018 · 11 · 29 - 11 · 30 上海颖奕皇冠假日酒店

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- ・汽车电气化技术
- ·智能网联与汽车行业变革
- ·科技赋能汽车技术发展
- ・人工智能与大数据

参会、参展、赞助、演讲 江捷先生(Jay)

021-6140-8921 Jay.Jiang@sae.org

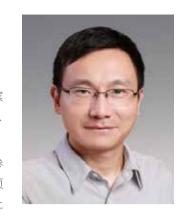


### 熊 璐 博士

### 同济大学新能源汽车工程中心 副主任

熊璐,工学博士、教授、博士生导师,德国斯图加特大学博士后,美国伊利诺伊州立大学香槟分校(UIUC)访问学者。2005年9月起在同济大学任教,历任同济大学汽车学院讲师、副教授、教授,现任同济大学新能源汽车工程中心副主任。

长期从事汽车底盘控制、分布式驱动电动汽车动力学控制、智能驾驶相关科研工作,主持和参与国家重点研发计划项目、国家自然科学基金项目、973 计划、863 计划和国家支撑计划等多项国家和省部级项目;发表 SCI/EI 论文 70 余篇,授权专利 40 余项,参撰英文著作 2 部;曾获上海市科技进步一等奖、上海市科技进步三等奖、中国汽车工业科技进步三等奖以及上海国际工



业博览会高校展区一等奖、上海市国际工业博览创新奖等多项奖励;担任多个国内外著名期刊的评审专家,任中国汽车工程学会汽车智能交通分会副秘书长、中国自动化学会车辆控制与智能化专委会委员、上海市汽车工程学会可靠性专委会委员。

### Dr. Lu XIONG

### **Vice Director**

### **New Energy Automotive Engineering Center of Tongji University**

Dr. Lu Xiong has a PhD in engineering. He is a professor, doctoral tutor, post-doctoral fellow of University of Stuttgart, Germany, and visitor scholar of University of Illinois at Urbana-Champaign (UIUC). Since September 2015, he has been teaching in Tongji University. He served in many positions, including lecturer, associate professor and professor of School of Automotive Studies of Tongli University. Currently he works as Vice Director of New Energy Vehicle Engineering Center of Tongji University.

He has been engaged in researches on vehicle chassis control, distributed drive electric vehicle dynamics control and smart driving. He has led and participated National Key R&D Plan Programs and program of the National Natural Science Fund of China, including 973program, 863 program, and National Science and Technology Support Program, as well as other national, provincial and ministerial programs. He has published over 70 SCI/El papers, authorized more than 40 patents and co-written 2 books in English. He has won the first prize of Shanghai Science and Technology Progress Award, the third prize of Shanghai Science and Technology Progress Award, the third prize of China Automotive Industry Award for Sci. & Tech., the first prize for Colleges and Universities and Innovation Award by China International Industry Fair, as well as other awards. He also served as an evaluation expert for many renowned international and domestic journals, Vice Secretary-General of SAE-China Intelligent Transportation Committee, a member of Vehicle Control and Intelligent Professional Committee of China Association of Automation, and a member of Reliability Professional Committee of Shanghai Society of Automotive Engineers.

### Kevin Tallio 博士

### 福特汽车 电气化传动工程总工程师

Kevin Tallio 博士是福特亚太区电气化动力总成首席工程师。 供职福特的 29 年间,他曾出任多个有关 R & A、发动机工程和电气化动力总成工程的技术和管理负责人。在他的整个职业生涯中,Tallio 博士一直以会议组织者、主席和作者等身份活跃于 SAE。Tallio 博士于 2014 年成为 SAE International 会士。



### Dr. Kevin Tallio

### Chief Engineer for Electrified Powertrain Engineering Ford

Dr. Kevin Tallio is Chief Engineer for Electrified Powertrains, Ford Asia Pacific. He has worked in numerous technical and management leadership roles in R&A, Engine Engineering and Electrified Powertrain Engineering during his 29-year tenure at Ford. He has been active in SAE for his entire career as session organizer, chair and author. Dr. Tallio was inducted as an SAE Fellow in 2014.

### **Paul Sheridan**

### DDM Consulting 总裁

Paul Sheridan 在多家汽车 OEM 积累了丰富的成功经验,之后成立了一家专注于交通安全与效率的咨询公司。在克莱斯特道奇卡车部门任职的时候,Sheridan 曾领导过全球知名的获奖车型——道奇康明斯柴油皮卡的原型车研发,并负责该车型的工程项目的设计与管理。Sheridan 是 Lee A. lacocca 主席奖的三名获奖者之一,也是史上唯一因交通安全方面的成就而荣获民事司法基金会国家冠军奖(Civil Justice Foundation National Champion's Award)的汽车专家。Sheridan 曾为交通安全领域的多项技术与法规进步做出贡献,下至地区与联邦法院,上至美国参议院、美洲最高法院、美国最高法院,都曾对他的杰出成就授予表彰。"毋庸置疑,安全是



一项管理问题。"是 Sheridan 的名言之一。他拥有物理学、数学、计算机科学的学士学位、康奈尔大学的 MBA 硕士学位,其咨询业务主要专注于电动交通的安全与效率方面。Sheridan 认为由电动交通带来的巨大的环保效益也会推动能源结构朝着可靠、可预测、可持续的方向发展。身为前核电站员工,Sheridan 建议人们充分发挥电动交通、现代电网、以及第三和第四代核电所带来的可持续发展与环保价值。

### **Paul Sheridan**

### President DDM Consulting

After a successful career with major automotive original equipment manufacturers, Paul Sheridan formed a consulting firm that specializes in transportation safety and efficiency. While a member of the Dodge Truck Division of Chrysler Corporation, Sheridan led the original prototype development of the world renowned Dodge-Cummins Diesel Pickup truck, and later designed and managed the engineering programs for that award-winning product. One of only three recipients of the Lee A. lacocca Chairman's Award, Sheridan is the only person in history to win the Civil Justice Foundation National Champion's Award for his work in transportation safety. With a testimonial record that ranges from the local and federal courts, to the United States Senate, all the way to the highest court in America, the United States Supreme Court, Sheridan has been credited with numerous technological and regulatory advancements in safety under his adage, "First and foremost, safety is a management issue." With degrees in physics, mathematics, and computer science (BS), and a Master's degree in Business Administration (MBA) from Cornell University, Sheridan has concentrated consultation effort on the safety and efficiency benefits of electric mobility. Sheridan proposes that the enormous environmental protections offered by electric mobility will also drive energy sources that demonstrate reliability, predictability, and true sustainability. Formerly a nuclear reactor operator, Sheridan proposes that to maximize the true sustainability and genuine environmental protection offered by electric mobility, deployment of modern grid technologies, fortified by third and fourth generation nuclear power plant sources of electricity, will be required.

### Yuan ZHAO 博士

### 汉高集团 技术服务首席工程师

Yuan Zhao 博士是汉高公司的首席工程师。拥有 18 年的研究和工业经验。

获得了西安交通大学的本科和硕士学位,以及马里兰大学学院公园的博士学位。在 2014 年加入 Henkel 之前,他在 Teledyne 科学与成像 / 洛克韦尔科学中心工作,并担任由政府机构和电子冷却及热管理行业合作伙伴赞助的多个项目的 PI 或 Co-PI。撰写或合著超过 40 篇科技论文。



### Dr. Yuan ZHAO

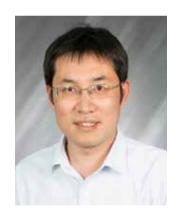
### Principal Engineer, Technical Service Henkel Corporation

Dr. Yuan Zhao is a Principal Engineer at Henkel Corporation. He received his B.S and M.S. from Xian Jiaotong University and Ph.D. from University of Maryland College Park. He has 18-year research and industrial experience. Prior to joining Henkel in 2014, he was with Teledyne Scientific & Imaging/Rockwell Science Center and served as PI or Co-PI for multiple programs sponsored by government agencies and industrial partners in electronics cooling and thermal management. He has authored or co-authored more than 40 technical papers.

### 贾永平

### 森萨塔科技 电气化部业务总监

贾永平现任职森萨塔科技电气化业务总监,负责中国和印度区业务。毕业于清华大学,从事汽车传感器产品技术开发工作逾十年,先后担任森萨塔科技产品设计经理、工艺工程总监以及市场总监。



### **Kewin JIA**

### Business Director, Electrification Sensata Technologies

Kewin Jia is currently holding the position of Business Director, Electrification, Sensata Technologies. Graduating from Tsinghua University, Kewin has been working on the technology and development of automotive sensor products for over ten years, and served as Marketing Director, Process Engineering Director and Product Design Manager at Sensata Technologies.

### 陈篪

### 是德科技 业务拓展经理

陈篪,工作于是德科技中国 AES 业务拓展部门,主要负责中国区智能网联汽车与能源测试测量解决方案的业务拓展。 他前期工作于汽车新能源的应用测试和电池化成生产的相关市场项目。 和众多大型电池厂商,研发机构,汽车能源部门都有相关合作。陈篪毕业于鲁汶大学电子系。



### **Chi CHEN**

### **Business Development Manager Keysight**

Chi Chen, worked as Business Development in AES of Keysight. He was responsible for the business development of new solutions in Automotive and Energy for Keysight in China. He worked on the sales and marketing of cell testers and formation systems in his previous experience. He worked with major battery makers, car company, research department before. ChenChi has master degree in Electronics in Leuven.

### 徐俊林

### 莎益博 技术部部长

徐俊林,工学硕士,自 2004 年加入莎益博工程系统开发(上海)有限公司,一直从事 CAE 仿真相关工作,在基于模型设计、基于模型的系统工程、信息化建设等方面有着丰富的经验,参与完成多个工程咨询项目。



### **Junlin XU**

### Director, Department of Technology CYBERNET

Mr. Junlin Xu holds a Master Degree in Engineering. He joined CYBERNET China in 2004. Since then, he has been engaging in CAE simulation. He has rich experience in model design, model based system engineering, information construction, etc. He has participated and completed multiple engineering consulting projects.

### Dr. Chunting (Chris) MI

Professor and Chair of the Department of Electrical and Computer Engineering Director of the US DOE funded GATE Center for Electric Drive Transportation San Diego State University

#### Fellow of IEEE and SAE International

Chris Mi is a fellow of IEEE and SAE, Professor and Chair of the Department of Electrical and Computer Engineering, and the Director of the US DOE funded GATE Center for Electric Drive Transportation at San Diego State University, San Diego, California, USA. He was previously a professor at the University of Michigan, Dearborn from 2001 to 2015. He received the B.S. and M.S. degrees from Northwestern Polytechnical University, Xi'an, China, and the Ph.D. degree from the University of Toronto, Toronto, Canada, all in electrical engineering. Previously he was an Electrical Engineer with General Electric Canada Inc. He was the President and the Chief Technical Officer of 1Power Solutions, Inc. from 2008 to 2011. He is the Co-Founder of SNC Technology.

His research interests are in electric and hybrid vehicles. He has taught tutorials and seminars on the subject of HEVs/PHEVs for the Society of Automotive Engineers (SAE), the IEEE, workshops sponsored by the National Science Foundation (NSF), and the National Society of Professional Engineers. He has delivered courses to major automotive OEMs and suppliers, including GM, Ford, Chrysler, Honda, Hyundai, Tyco Electronics, A&D Technology, Johnson Controls, Quantum Technology, Delphi, and the European Ph.D School. He has offered tutorials in many countries, including the U.S., China, Korea, Singapore, Italy, France, and Mexico. He has published more than 250 articles and delivered 100 invited talks and keynote speeches and as a panelist in major IEEE and SAE conferences.

Dr. Mi is the recipient of "Distinguished Teaching Award" and "Distinguished Research Award" of University of Michigan Dearborn. He is a recipient of the 2007 IEEE Region 4 "Outstanding Engineer Award," "IEEE Southeastern Michigan Section Outstanding Professional Award." and the "SAE Environmental Excellence in Transportation (E2T) Award." He was also a recipient of the National Innovation Award and the Government Special Allowance Award from the China Central Government. He received two Best Paper Awards from IEEE Transactions on Power Electronics.

Dr. Mi was the Chair (2008-2009) and Vice Chair (2006-2007) of the IEEE Southeastern Michigan Section. Dr. Mi was the general Chair of the 5th IEEE Vehicle Power and Propulsion Conference held in Dearborn, Michigan, USA in September 6-11, 2009. Dr. Mi is one of the three Area Editors of the Editor of IEEE Transactions on Vehicular Technology, associate editor of IEEE Transactions on Power Electronics, Associate Editor of IEEE Transactions on Industry Applications. He served on the review panel for the NSF, the U.S. Department of Energy (2007–2010), the Natural Sciences and Engineering Research Council of Canada (2010), Hong Kong Research Grants Council, French Centre National de la Recherche Scientifique, Agency for Innovation by Science and Technology in Flanders (Belgium), and the Danish Research Council. He is the topic chair for the 2011 IEEE International Future Energy Challenge, and the General Chair for the 2013 IEEE International Future Energy Challenge. Dr. Chris Mi is a Distinguished Lecturer (DL) of the IEEE Vehicular Technology Society.

He is Guest Editor-in-Chief of IEEE Journal of Emerging and Selected Topics in Power Electronics - Special Issue on WPT, Guest Co-Editor-in-Chief of IEEE Transactions on Power Electronics Special Issue on WPT, Guest Editor of IEEE Transactions on Industrial Electronics - Special Issue on dynamic wireless power transfer, and steering committee member of the IEEE Transportation Electrification Conference (ITEC- Asian). He is Program Chair or General Chair of a number of international conferences, including Workshop on Wireless Power Transfer (WoW), IEEE International Electric Vehicle Conference (IEVC), and IEEE International Transportation Electrification Conference - Asia-Pacific. He is also the chair for the IEEE Future Direction's Transportation Electrification Initiative (TEI) e-Learning Committee and developed an e-learning module on wireless power transfer.

### 米春亭 博士

美国圣迭戈州立大学 电气与计算机工程学教授兼主任 美国能源部毕业生汽车科技教育项目(GATE)电力驱动交通教育中心主任 SAE International 会士、IEEE 会士

米春亭为 IEEE 和 SAE 成员,美国加州圣迭戈州立大学电气和计算机工程学部教授兼主任、美国能源部毕业生汽车科技教育项目(GATE)电力驱动交通教育中心主任。2001 年至 2015 年,他在密歇根大学迪尔伯恩校区任教授。他曾就读西北工业大学,获电气工程学士和硕士学位,随后他赴加拿大多伦多大学求学,并获电气工程博士学位。在此之前,米春亭曾受聘于加拿大通用电气,任电气工程师。2008 至 2011 年,他兼任 1Power Solutions 总裁和技术总监。此外,米春亭也是 SNC Technology 公司的联合创始人。



米春亭研究的主攻方向为电动汽车和混合动力汽车。他曾为 SAE、IEEE、美国国家专业工程师学会(NSF)讲学、开办研讨会,主讲混合动力汽车/插电式混合动力汽车,也曾在美国国家科学基金会出资支持的工作坊上授课。他曾为大型汽车 OEM 和供应商提供培训,合作客户包括通用汽车、福特、克莱斯勒、本田、现代、泰科电子、爱安德技研贸易、江森自控、昆腾、德尔福和欧洲博士学校。他的教学活动涉足美国、中国、韩国、新加坡、意大利、法国、墨西哥等多个国家。他发表论文超过 250 篇,受邀发表演讲 100 场(包括主旨演讲),并曾作为大会嘉宾参与过多场大型 IEEE 和 SAE 会议。

米博士在密歇根大学迪尔伯恩校区任教时,曾获"杰出教学奖"和"杰出研究奖"。他还是 2007 年 IEEE 第四区"杰出工程师奖"、IEEE "密歇根州东南部杰出个人奖"、SAE "卓越交通环境(E2T)奖"的获得者。他还获得过中国政府颁布的国家创新奖和政府特殊津贴奖。同时他还两度摘得《IEEE 电力电子汇刊》最佳论文奖。

2006年至2007年,米博士任 IEEE 密歇根州东南部副主席,2008年至2009年,米博士任东南部主席。米博士曾担任第五届 IEEE 国际车辆动力与驱动技术大会主席(2009年9月6至11日,于美国密歇根州迪尔伯恩市举行)。他是《IEEE 车辆技术汇刊》的三名审稿编辑之一、《IEEE 电力电子汇刊》副主编、《IEEE 工业应用技术汇刊》副主编。他曾为以下机构担任过评审委员: NSF、美国能源部(2007-2010)、加拿大自然科学与工程研究委员会(2010)、香港研究资助局、法国国家科研中心、比利时 弗朗德斯科技创新局和丹麦研究委员会。他曾任2011年 IEEE 国际未来能源挑战赛分会主席与2013年该会议的大会主席,同时,他也是 IEEE 汽车科技学会的杰出讲师 (DL)。

米博士是《IEEE 电力电子新方向与精选课题—无线电力传输特刊》的特邀总编辑、《IEEE 电力电子汇刊无线电力传输特刊》特邀总编辑、《IEEE 工业电子汇刊动态无线电力传输特刊》特邀编辑,"IEEE 交通电气化大会"(ITEC) 亚太地区分会指导委员会的成员。同时,他还担任包括以下国际会议在内的多场国际会议的程序委员会主席和大会主席:无线电力传输研讨会(WoW)、IEEE 电动汽车大会(IEVC)、IEEE 国际交通电气化会议—亚太地区分会。他还是 IEEE 未来发展方向委员会交通电气化倡议(TEI)线上学习委员会主席,并负责开发了一套有关无线电力传输的线上学习课程。

### 仲小龙

### Protean Electric 中国区应用工程总监

仲小龙目前供职于全球领先的轮毂电机技术供应商 Protean Electric,任中国区应用工程总监一职。他负责整车集成技术、客户项目管理、以及商务开发支持等工作。他在新能源汽车行业工作逾十年,并在驱动电机、动力电池、以及整车控制方面经验丰富。他拥有自动控制学士学位和机电自动化硕士学位。



### **Gary ZHONG**

### Director of Applications Engineering China Protean Electric

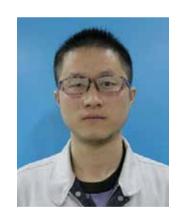
Gary Zhong is the Director of Applications Engineering China at Protean Electric, a world leading company that has developed an in-wheel electric drive system for hybrid, plug-in hybrid and battery electric light-duty vehicles. He takes responsibilities of vehicle integrations, customer project management and business development support. He has over ten years of professional experience in new energy vehicle industry and expertise in electric motors, advanced battery, and vehicle systems control for NEV. He holds a Master degree in Electro-Mechanical Engineering and a Bachelor degree in Automatic control.

### 王宏凯

### 鹰峰电子 技术部技术经理

2005年4月-2007年7月,普鲁卡姆电器(上海)有限公司任机械设计。

2007年8月至今,工作于上海鹰峰电子科技股份有限公司,先后任职叠层母线产品线设计工程师、技术经理,现任职电容器产品线技术经理。



### Hongkai WANG

### Technology Manager EAGTOP

April 2005 - July 2007, Mechanical Designer at Procom Shanghai.

Since August 2007, working as laminated bus bar design engineer and later manager at Eagtop.

以下展商企业信息由参展公司提供。

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### **CYBERNET**

### 莎益博工程系统开发(上海)有限公司

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### www.cybernet.sh.cn

CYBERNET集团是CAE(Computer Aided Engineering) 行业的领先企业,30多年以来,我们为制造业的研发和设计的相关部门、大学和政府的研究机构等提供了广泛的CAE解决方案。

此外,我们还协同作为CYBERNET集团成员的加拿大Maplesoft公司(STEM计算技术)、比利时Noesis公司(优化工具)、美国Sigmetrix公司(公差管理工具),以全球化视角发掘更具需求的技术,提供超越客户期待的支援服务。

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As a leading CAE (computer aided engineering) solution provider, Cybernet has provided CAE solutions for over 30 years in a wide array of fields to the research and development (R&D) and engineering departments of manufacturing companies, along with universities and government research institutes.

In addition, by producing the synergy effects of our group companies Maplesoft (Canada, STEM computing technology), Noesis (Belgium, optimization tools), and Sigmetrix (US, tolerance management tools), we continue to provide services with a global perspective that exceed our customers' expectations.





### 上海鹰峰电子科技股份有限公司

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### www.eagtop.com

上海鹰峰电子科技股份有限公司是一家专注于电力电子无源器件研发、生产销售的高新技术企业。2016年公司成功登陆新三板,股票代码839991。

公司跟随着新能源汽车行业的起步与发展,为用户提供薄膜电容器、叠层母线、高频电感等,产品已成熟应用于各大主流PHEV、EV车型。2012年公司通过IATF 16949:2016质量管理体系认证。随着新能源汽车用户需求的不断提升,公司也将在技术和服务上继续创新,为客户提供更加信赖的产品和解决方案支持,为绿色低碳出行做出我们的贡献。

### Shanghai Eagtop Electronic Technology Co.,Ltd.

Address: 258 Tangming Road, Shihudang, Songjiang District, Shanghai, PRC

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Shanghai EAGTOP electronic technology Co., Ltd is specialized in R&D, manufacturing and sales of Passive Power Electronics Devices. EAGTOP successfully went public in "new three board" in 2016. (Stock Code: 839991)

Following the start and development of new energy automotive industry, EAGTOP provides Laminated Busbar, Film Capacitor, Liquid Cooling Plates for IGBT & battery and High Frequency Inductor for customers, our products have been widely applied to major mainstream PHEV and EV industry. EAGTOP has been certified by IATF 16949:2016 certification since 2012. With the increasing demand of new energy vehicle users, EAGTOP will continue to innovate in technology and services, to provide customers with more reliable products and solutions, to make contribution to a greener low-carbon society.

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### 汉高乐泰(中国)有限公司

地址: 上海市杨浦区江湾城路99号尚浦中心7幢8楼

#### www.henkel.com

汉高(Henkel)在全球拥有多个知名品牌和多项先进技术,主 要业务分布在三大业务部: 洗涤剂及家用护理、化妆品及美 容用品、粘合剂技术。汉高粘合剂业务部是工业粘合剂、密封 剂和表面处理领域的全球市场领导者, 旗下品牌包括Loctite® 、Bonderite®、Technomelt®、Teroson®、Aquence®等,在市 场上享有盛誉。

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Address: 8F, Building 7 Shun Pu Center, 99 Jiangwancheng Road, Yangpu District, Shanghai, PRC

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Henkel operates worldwide with leading brands and technologies in three business units: Laundry & Home Care, Beauty Care and Adhesive Technologies. Henkel adhesive technologies business unit is the global leader of industrial adhesives, sealants and surface treatments and Henkel feature a series of highly acclaimed brands including Loctite®, Teroson®, Pritt®, Pattex®, Ceresit®and etc.





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是德科技 (NYSE: KEYS) 是一家领先的技术公司,致力于帮助企业、服务提供商和政府客户加速创新,创造一个安全互联的世界。从设计仿真、原型验证、生产测试到网络和云环境的优化,是德科技提供了全方位的测试与分析解决方案,帮助客户深入优化网络,进而将其电子产品以更低的成本、更快地推向市场。我们的客户遍及全球通信生态系统、航空航天与国防、汽车、能源、半导体和通用电子终端市场。2017 财年,是德科技收入达 32 亿美元。2017年4月,是德科技完成对 Ixia 的收购。Ixia 公司在网络测试、可见性和安全解决方案领域具有十分雄厚的实力。

更多信息,请访问 www.keysight.com。

### **Keysight Technologies, Inc.**

Address: 4F, 3 Wangjingbei Road, Chaoyang District, Beijing, PRC

### www.keysight.com

Keysight Technologies, Inc. (NYSE: KEYS) is a leading technology company that helps enterprises, service providers, and governments accelerate innovation to connect and secure the world. Keysight's solutions optimize networks and bring electronic products to market faster and at a lower cost with offerings from design simulation, to prototype validation, to manufacturing test, to optimization in networks and cloud environments. Customers span the worldwide communications ecosystem, aerospace and defense, automotive, energy, semiconductor and general electronics end markets. Keysight generated revenues of \$3.2B in fiscal year 2017. In April 2017, Keysight acquired Ixia, a leader in network test, visibility, and security.

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### 宁波永久磁业有限公司

地址: 浙江省宁波市北庄桥工业区康庄南路518号联系人: 余飞锋 联系电话: 13957886322

### www.pm-magnets.com

宁波永久磁业有限公司成立于1997年,现有员工500余人,占地面积6万平方米。建立以来,在中科院宁波材料所、北京科技大学、浙江大学等研究机构以及公司内部的省级工程技术研发中心的技术支撑下,长期以来致力于高性能稀土永磁材料的研究、开发及批量化生产,公司配备国际先进的生产设备及检测仪器,现有烧结钕铁硼产能5000吨/年。

目前公司产品出口占比达80%,产品远销欧洲、美洲、东南亚等地区,主要应用于中高端电机(汽车电机、风电电机)、消费类电子、医疗及清洁能源等领域。

### Ningbo Permanent Magentics Co.,Ltd.

Address: 518 Kang Zhuang Nan Road, Jiangbei District, Ningbo,

Zhejiang, PRC

Contact us: Feifeng YU p: 13957886322

#### www.pm-magnets.com

Ningbo permanent Magentics Co.Ltd was established in 1997 and occupies a total area of 60,000m2, 500 employees. The company is equipped with international standard advanced production and testing equipment, the capacity is 5000 tons/year.

At present 80% products exported to oversea, and products are exported to Europe, America, Southeast Asia and other regions, mainly applied in Semi-high-end motor, consumer electronics, medical and clean energy and other fields.

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### **Protean Electric**

地址: 上海市普陀区铜川路70号新城市中心广场809室

### www.proteanelectric.com

Protean Electric 是一家汽车技术公司。

我们的ProteanDrive轮毂电机集成了电力电子模块和数字控制功能,并结合了可兼容的摩擦制动器。我们的技术拥有完善的专利保护,能满足长达三十万公里使用寿命,包括防水防尘、冲击和震动、洼穴和路缘撞击等路况。

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基于创新基石,我们历久弥坚助力创造清洁车辆的明天。已拥有的100多项专利、发明和许多伟大的创意,也仅仅只是一个开始。

#### **Protean Electric**

Address: Room 809, New Town Center Plaza, 70 Tongchuan Road, Putuo District, Shanghai, PRC

### www.proteanelectric.com

Protean Electric is an automotive technology firm.

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### 森萨塔科技管理(上海)有限公司

地址: 上海静安区裕通路100号宝矿洲际商务中心30楼

### www.sensata.com

森萨塔科技创立于1916年,是全球领先的传感、电气保护、控制和能源管理解决方案供应商,在全球12个国家及地区设有运营机构。森萨塔的产品每天为数百万人提供更安全、更高效、更舒适的体验,涵盖汽车、电器、飞机、工业、军事、重型车辆、制热、通风、空调、数据、电信、休旅车辆和海洋应用等领域。森萨塔亚太区总部位于中国上海,并在日本、韩国、印度、马来西亚及新加坡设有分支机构。在中国,森萨塔设有两个大型运营中心,分别位于江苏常州和宝应,拥有一流的研发和生产制造能力。

欲了解更多信息,请访问森萨塔网站: www.sensata.com。

### Sensata Technologies Management China Co.,Ltd.

Address: 30F, BM Intercontinental Business Center, 100 Yutong Road, Jingan District, Shanghai, PRC

#### www.sensata.com

Established in 1916, Sensata Technologies is one of the world's leading suppliers of sensing, electrical protection, control and power management solutions with operations and business centers in 12 countries. Sensata's products improve safety, efficiency and comfort for millions of people every day in automotive, appliance, aircraft, industrial, military, heavy vehicle, heating, ventilation, and air conditioning, data, telecommunications, recreational vehicle, and marine applications. With the Asia headquarters located in Shanghai China, Sensata has a broad Asia footprint in Japan, Korea, India, Malaysia and Singpore. In China, Sensata has two operational sites with engineering and manufacturing capabilities located in Changzhou and Baoying, Jiangsu pronvince.

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### **志亭・上海国际汽车城**

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### 上海国际汽车城 (集团) 有限公司

地址: 上海市嘉定区安亭镇墨玉南路888号

#### www.at-siac.com

2001年9月,经上海市委市政府决策,在上海安亭地区建设上海国际汽车城,规划面积100平方公里。经过十七年的开发建设,总投资超过1100亿元人民币。目前,汽车城拥有上汽大众、德尔福派克、科世达华阳等263家汽车整车及零部件企业,211个研发机构,6个国家级公共服务平台,12家总部类企业,106家汽车技术研究中心,152家高新技术企业,超过2万名专业工程师等行业人才。

在市、区两级政府的指导下,汽车城正重点推进以"EVCARD 电动汽车分时租赁" 为创新项目的电动汽车国际示范城市建设;打造综合性产业和示范应用基地为目标的我国首个智能网联汽车试点示范区,以汽车创新港、同济科技园、新能源汽车及关键零部件产业基地为重点的汽车产业高地建设。

2017年,汽车城完成规模以上工业总产值3592.6亿元,同比增长11.1%,其中汽车产业完成规上总产值3373.0亿元,同比增长11.3%。上海国际汽车城在"产城深度融合发展"目标的指导下,努力将汽车城建设成为世界汽车产业中心。

### **Shanghai International Automobile City**

Address: 888 Moyunan Road, Anting Town, Jiading District, Shanghai, PRC

### www.at-siac.com

The name Shanghai International Automobile City (SIAC) was first proposed in September 2001 by the municipal government as an important part of Shanghai's industrial development strategy. So 17 years have passed with an investment of 110 billion RMB in fixed assets. Until now, SIAC have 263 OEM and AUTO parts enterprises, 211 R&D institutions, 6 national public service platforms, 12 headquarters enterprises, 106 automotive technology research centers, 152 high-tech enterprises, and more than 20,000 professional engineers.

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