中 国 电 源 学 会

中源函〔2018〕117 号

第二届国际电力电子技术与应用会议暨展示会（IEEE PEAC 2018）报名通知

各学会会员、论文作者及有关单位:

2018 国际电力电子技术及应用会议暨展示会(2018 IEEE International Power Electronics and Application Conference and Exposition，简称: IEEE PEAC 2018)将于 2018 年 11 月 4-7 日在深圳召开，现将参会报名事宜通知如下:

一、 组织机构

主办单位: 中国电源学会(CPSS)、IEEE-电力电子学会(PELS)

协办单位: 美国电源制造商协会(PSMA)、韩国电力电子学会(KIPE)、日本电气工程师协会-工业应用学会(IEEJ-IAS)、国家自然科学基金(NSFC)

大会荣誉主席:

李泽元教授　美国工程院院士、弗尼吉亚理工大学

大会主席:

徐德鸿教授　中国电源学会理事长、浙江大学

Alan Mantooth 教授　IEEE-PELS 主席、阿肯色大学

钻石赞助商:

厦门科华恒盛股份有限公司、富士电机（中国）有限公司、三菱电机机电（上海）有限公司

金牌赞助商:

Navitas Semiconductor、深圳市汇川技术股份有限公司、GaN Systems Inc.、无锡宸瑞新能源科技有限公司、宁波希磁电子科技有限公司、深圳基本半导体有限公司、Power Integrations Inc.、珠海泰芯半导体有限公司

二、 时间地点

会议时间: 2018 年 11 月 4-7 日

会议地点: 广东省深圳市，深圳龙岗珠江皇冠假日酒店

三、 会议内容

PEAC 国际会议是由中国电源学会发起召开的，交流和研讨电力电子、能源变换及其应用最新技术的国际性会议，首届会议于 2014 年在上海成功召开。

第二届国际电力电子技术及应用会议暨展示会（IEEE PEAC 2018）由中国电源学会(CPSS)与 IEEE-电力电子学会(PELS)联合主办，将通过特邀大会报告、专题讲座、技术报告、工业报告、墙报、新产品展示等形式，汇聚国际一流的电力电子学术、研发和产业界人士，就国际最新学术和技术问题进行专题研讨和交流。会议录用来自 31 个国家和地区的论文超过 500 篇，预计参会规模 650 人以上。

四、 会议安排

本次会议将安排 9 场大会报告、12 场专题讲座、52 个技术报告分会场、10 个工业报告分会场、2 个墙报交流时段、30 余家企业新产品展示以及欢迎招待会、晚宴等多种活动形式。

1.大会报告: 本次会议特邀 9 位国际知名专家，分享电力电子最新成果、前沿技术和未来发展趋势，主要包括:

Fred C Lee(李泽元) 教授，美国工程院院士、弗吉尼亚理工大学、IEEE Fellow

报告题目: Design for Manufacturability-A New Paradigm

Alan Mantooth 教授，IEEE-PELS 主席、阿肯色大学、IEEE Fellow

报告题目: Design Automation in Power Electronics

Frede Blaabjerg 教授，丹麦奥尔堡大学、IEEE Fellow

报告题目: Design for reliability in power electronic systems

David J. Perreault 教授，麻省理工学院、IEEE Fellow

报告题目: Architectures and Topologies for High-Frequency, High-Density Power Conversion

Dr. Don Tan 博士，NGAS、IEEE Fellow

报告题目: Intermediate bus architecture: A system’s perspective

Hirofumi Akagi 教授，东京工业大学、IEEE Fellow

报告题目: Trends in Power Electronics for High-Power Applications

Gourab Majumdar 博士，三菱电机董事技术总监

报告题目: Power Devices Indispensable for Advancing Power Electronics

Tatsuhiko Fujihira 博士，富士电机电子器件首席技术官

报告题目: Impact of SiC and RC-IGBT on Drive and Power Supply

Sixiong Chen 教授级高工，厦门科华恒盛股份有限公司副总裁、总工程师

报告题目: Research on the Reliability of Uninterruptible Power System

大会报告详细介绍请参见附件。

2.专题讲座: 12 场高质量专题讲座，深入讲解热点技术话题，3.5 小时每场。

High Power and Medium Voltage Applications of Wide Bandgap Power Devices

Jin Wang, The Ohio State University

Longya Xu, The Ohio State University

Mark Scott, Miami University

Wireless Power Transfer for Electric Vehicles

Chris Mi, Fellow IEEE and SAE, San Diego State University

Modular Multilevel Converters: From Fundamentals to Applications

Binbin Li, Harbin Institute of Technology

Fujin Deng, Southeast University

Dianguo Xu, IEEE Fellow, Harbin Institute of Technology

Control for Grid-Friendly Power Converter Systems

Yongheng Yang, Aalborg University

Yi Tang, Nanyang Technological University

Ariya Sangwongwanich, Aalborg University

Electrical Power Conversion Systems for Marine applications: present state and future trends

JF CHARPENTIER, French Naval Academy

Tianhao Tang, Shanghai Maritime University

Silicon Carbide MOSFETs and Diodes - Accelerate Your Next Power Converter Design

Xuning Zhang, Monolith Semiconductor Inc.

High frequency high voltage power supply technologies: design, analysis and modeling

Braham Ferreira, Delft University of Technology

Saijun Mao, Leadrive Technology (Shanghai) Co. Ltd.

Advances in Planar Magnetics for High Frequency Switched Mode Power Supply

W. G. Hurley, National University of Ireland

Ziwei Ouyang, Technical University of Denmark

Design-Oriented Stability Analysis and Control of Power Converters in Weak Grids

Xiongfei Wang, Aalborg University

Dongsheng Yang, Aalborg University

Power Converters for Energy Storage Applications-Analysis and Design from Theory to Practice

Petar J. Grbović, Huawei Technologies Düsseldorf GmbH

Electromagnetic Interference (EMI) Mitigation of Power Electronics Converters Through Pulse-Width-Modulation

Dong Jiang, Huazhong University of Science and Technology

Opportunities and Design Considerations for GaN HEMTs in Industrial and Automotive Applications

Juncheng (Lucas) Lu, GaN Systems Inc.

3.技术报告分会场、墙报交流: 会议将设置 52 个技术报告分会场和两个墙报交流时段，直观展示超过 500 篇最新论文和研究成果，使参会者就电力电子各领域技术进行充分交流。主要内容包括: 新颖开关电源: 直流变换技术、功率因数校正技术; 逆变器及其控制技术; SiC、GaN 器件、新型功率器件及其应用; 磁元件、无源器件、无线充电及 EMI; 控制、建模、仿真及系统可靠性; 新能源电能变换技术及储能技术; 电力电子技术在输配电、电动汽车、轨道交通、航空航天、照明、消费电子、数据中心以及通讯等领域的应用技术; 其他。

4.工业报告分会场: 30 位来自产业界资深工程师分享电力电子最新工程应用和产品开发技术。相关主题包括: 新型功率器件及应用; 无源器件、磁性元件及磁集成; 高效率开关电源设计; 新能源电能变换及储能设

计；电动汽车中电力电子技术应用等。

5.新产品展示：会议现场超过 30 家企业集中展示电源及相关领域新产品、新应用、新成果，反映电源产业技术创新水平，促进产学研用交流与合作。

五、 报名方式

2018 年 8 月 1 日正式开放参会注册，可通过会议网站 www.peac-conf.org 进行在线注册并付款后即为报名成功，否则报名无效。

报名优惠截止日期 2018 年 10 月 10 日。10 月 10 日之后报名者不享受注册费优惠，食宿不予保证。

(一) 注册类型:

全注册：可全程参加所有会议活动，包括：大会报告、专题讲座、技术报告分会场、工业报告分会场、展览会、欢迎招待会、晚宴、全程用餐及茶歇，并可获得会议论文集及专题讲座资料。

技术注册：可参加除专题讲座外的所有会议活动，包括：大会报告、技术报告分会场、工业报告分会场、展览会、欢迎招待会、晚宴、5-7 日用餐及茶歇，并可获得会议论文集。

专题讲座注册：可参加大会报告、专题讲座、工业报告分会场、展览会、欢迎招待会、4-5 日中餐及茶歇，并可获得专题讲座资料。

大会注册：可参加大会报告、工业报告分会场、展览会、欢迎招待会、5 日中餐及茶歇。（此注册类型仅针对会员开放）

(二) 注册费用

下表注册费用货币单位为美元。

		全注册	技术注册	讲座注册	大会注册
中国电源学会、IEEE PELS 会员	10 月 10 日前	$570	$450	$190	$150
	10 月 10 日后	$670	$530	$240	$200
IEEE 会员	10 月 10 日前	$620	$480	$220	$150
	10 月 10 日后	$720	$560	$270	$200
非会员	10 月 10 日前	$720	$560	$270	
	10 月 10 日后	$860	$680	$340	
中国电源学会、IEEE 学生会员	10 月 10 日前	$200	$180	$140	
	10 月 10 日后	$260	$220	$160	
学生(非会员)	10 月 10 日前	$250	$210	$170	
	10 月 10 日后	$310	$250	$190	

(三) 注册说明

1.所有参加 IEEE PEAC 2018 各项活动的人员都需要进行注册。

2.2018 年 10 月 10 日前进行会议注册并完成付款可享受优惠价格。

3.所有录用论文需要至少一名作者在 2018 年 8 月 30 日前完成全注册才能被会议最终接受和编入会议论文集。减免费用的注册(比如学生会员、学生非会员注册)不能用于注册论文。

4.每个全注册作者可以注册 2 篇论文,如果该作者还要注册第 3 篇论文，需额外支付 300 美元论文注册费。

5.论文如超过 6 页，需缴纳超页费 100 美元/页，但论文篇幅最多不超过 8 页。

6.论文作者请务必仔细阅读并遵循会议网站上有关论文最终稿提交

及论文发表的注意事项。

7.退款政策。注册人员因故无法参会可于10月20日前提出书面退款申请，相关款项在扣除50美元手续费后将于会议结束后退回原付款账户。

8.已完成注册但最终未出席会议的代表，组委会将根据注册类型，在会后30天内将相关会议资料邮寄给注册代表。

六、 会议住宿

相关酒店可在完成会议注册后，在会议网站个人注册后台进行在线预订，并享受会议优惠价格。由于房间数量有限，请尽早预订。

1.深圳龙岗珠江皇冠假日酒店（五星、会议主酒店）

地址：深圳市龙岗区龙岗中心城龙翔大道9009号

高级大床房：600元/间·天(含早餐)

高级双床房：600元/间·天(含早餐)

2.维也纳智好酒店-宝能城市广场店（距会议酒店237米）

地址：龙岗区龙岗中心城建设路28号宝能城市广场

豪华单人房：318元/间·天(含早餐)

豪华双人房：318元/间·天(含早餐)

3.深圳尚景酒店（距会议酒店705米）

地址：龙岗中心城龙城大道93号

高级单人房：198元/间·天(含早餐)

豪华单人房：238元/间·天(含早餐)

豪华双人房：268元/间·天(含早餐)

行政单人房：288元/间·天(含早餐)

4.瑞季精品酒店龙城店（距会议酒店 907 米）

地址：深圳市龙岗区中心城盛龙路 32 号

巴厘休闲大床房：308 元/间·天(含早餐)

巴厘舒适大床房：348 元/间·天(含早餐)

巴厘舒适双床房：318 元/间·天(含早餐)

七、 联系方式

中国电源学会

地址：天津市南开区黄河道 467 号大通大厦 16 层

邮编：300110

电话：022-27680796-12#、87574851、87422181

会议网站：www.peac-conf.org

会议邮箱：peac@peac-conf.org

附件：大会报告介绍

中国电源学会

2018 年 8 月 21 日

附件：大会报告介绍

Prof. Fred C. Lee
Virginia Tech.
Member of U.S. National Academy of Engineering
IEEE Fellow
Speech Title: Design for Manufacturability-A New Paradigm

Abstract

In today's power electronics products, quality and reliability are given. Great emphases are placed on high efficiency, high power density and low cost. The current practice has reached a level of maturity that further advances will be closely linked to improvement in power devices, materials, and fabrication techniques.

With recent advances in wide-band-gap (WBG) power semiconductor devices, namely, SiC and GaN, we have witnessed significant improvements in efficiency and power density while operating at a frequency an order of magnitude higher than the current practice using silicon counterparts. With this dramatic increased operating frequency, current design practices are challenged. Design trade off previously considered impractical or inconceivable can be realized not only with significant gain in efficiency and power density, but also drastic improvement of EMI/EMC and manufacturability. Several examples will be given to illustrate the potential impact of WBG devices in performance improvements and ease of manufacturability of future power electronics products.

Prof. Alan Mantooth
University of Arkansas
President of IEEE Power Electronics Society
IEEE Fellow,
Speech Title: Design Automation in Power Electronics

Abstract

Design automation for power electronics is a growing need with greater utilization of wide bandgap (WBG) power semiconductor device technologies in applications. Several industry, academic, and design automation companies convened just before ECCE in Portland, Oregon in September to discuss the design issues and whether current tools have need of revision to address the emerging WBG era. This talk will describe the key findings from that workshop. Gaps and research needs will be described including those in multi-objective optimization, multi-disciplinary co-design, and others. Current solutions will be reviewed with a commentary as to where they require growth and expansion.

Prof. Frede Blaabjerg
Aalborg University
IEEE Fellow
Speech Title: Design for reliability in power electronic systems

Abstract
In recent years, the automotive and aerospace industries have brought stringent reliability constraints on power electronic converters because of safety requirements. Today customers of many power electronic products expect up to 20 years of lifetime and they also want to have a "failure free period" and all with focus on the financials. The renewable energy sectors are also following the same trend, and more and more efforts are being devoted to improving power electronic converters to account for reliability with cost-effective and sustainable solutions. This presentation will introduce the recent progress in the reliability aspect study of power electronic converters for power electronic applications with special focus on renewables. It will cover the following contents: the motivations for highly reliable electric energy conversion in renewable energy systems; the reliability requirements of typical renewable energy systems and its implication on the power electronic converters; failure mechanisms and lifetime models of key power electronic components (e.g., power semiconductor switches, capacitors, and fans); long-term mission profiles in Photovoltaic (PV) and wind power applications and the component level stress analysis; reliability analysis methods, tools, and improvement strategies of power electronic converters for renewable energy systems. A few case studies on PV and wind power based renewable energy systems will also be discussed.

Prof. David Perreault
Massachusetts Institute of Technology
IEEE Fellow
Speech Title: Architectures and Topologies for High-Frequency, High-Density Power Conversion

Abstract
Magnetic components, including inductors and transformers, are often the largest contributors to the size and loss of power converters, and can be a key limiting factor in achieving higher efficiency and smaller sizes. This talk describes emerging approaches in the design of power electronics that seek to address the twin challenges of miniaturization and performance. Through architectures and topologies that minimize magnetic energy storage and utilize it more flexibly, the scaling limitations of magnetic components can be offset, leading to smaller, higher-performance power converters. Examples are provided illustrating the opportunities provided by such approaches towards higher performance systems.

Dr. Don Tan
NGAS
Distinguished Engineer and Power Products Manager
IEEE Fellow
Speech Title: Intermediate bus architecture: A system's perspective

Abstract

Four basic intermediate bus architectures are presented. Salient features for each system are discussed in detail. They cover input power stage, bus voltage level, output power stage, output regulation, multiple outputs, thermal property, system stability, and output impedance. Design tradeoffs are also presented to guide practical designs. It is concluded that the double regulated intermediate bus architecture has the best efficiency, regulation, thermal, and stability performances. Engineering hardware for the double regulated intermediate bus achieved a record efficiency of 99%. Recent advancement in switched-capacitor-based unregulated intermediate bus may provide higher power density.

Prof. Hirofumi Akagi
Tokyo Institute of Technology
IEEE Fellow

Speech Title: Trends in Power Electronics for High-Power Applications

Abstract

This talk focuses on present situations and future trends of power electronics intended for high-power applications. The speaker starts with medium-voltage high-power high-speed and low-speed motor drives using modular multilevel cascade converters with different circuit configurations, respectively. He shows some experimental waveforms obtained from a few downscaled systems that were designed, constructed, and tested in his laboratory.

Then, the speaker presents the 750-V, 100-kW, 20-kHz bidirectional isolated dual-active-bridge (DAB) dc-dc converter using the latest 1.2-kV 400-A SiC-MOSFET modules. This power conversion system consists of two dc-to-ac and ac-to-dc power converters and a single-phase medium-frequency transformer, as well as four auxiliary inductors. The maximum conversion efficiency from the dc input to dc-output terminals is as high as 99.5% at 31 kW, and 98.9% at 100 kW, excluding power losses of the gate-drive and control circuits. If the latest Si-IGBT modules were used in the dc-dc converter, it would be impossible to attain such an extremely high efficiency.

Finally, this presentation ends with the following message: “Since the 1980s, power electronics scientists and engineers have been making a long voyage from the Silicon planet to the Silicon-Carbide planet. It takes five years from now to complete this challenging voyage. The success in the voyage will bring a new world to power electronics.”

Dr. Gourab Majumdar
Senior Fellow
Mitsubishi Electric Corporation

Speech Title: Power Devices indispensable for Advancing Power Electronics

Abstract

To meet the challenges of environmental issues such as climate change triggered by CO2 and greenhouse gas emission, use of efficient systems across the whole sphere of electricity supply-chain, covering electric power generation, transmission, distribution and consumption is spreading rapidly across the globe raising

the importance of the power electronics and power device technologies to their highest level. On the consumption side, for example, use of electrified vehicles employing advanced on board power electronics systems – such as EVs, PHEVs and HEVs – is spreading rapidly worldwide, particularly in the advanced countries. One of the key enabler of power electronics' growth in such domains of efficient electric energy processing is power semiconductor module. Currently, most of such power electronics systems use silicon based semiconductors such as IGBT modules and Intelligent Power Modules (IPMs). The Wide Band-Gap (WBG) materials (e.g. SiC and GaN) based power semiconductors are considered as prospective candidates to more aptly serve for performance challenges pursued by the applied systems. This keynote presentation explains such trends highlighting on state-of-the-art power semiconductor chip and module technologies.

Dr. Tatsuhiko Fujihira
Fuji Electric Co., Ltd.
CTO for Electronic Devices
Speech Title: Impact of SiC and RC-IGBT on Drive and Power Supply

Abstract
Growing population and economy of this planet require us to build up a sustainable society. In electric power conversion, more energy- and resource-saving, efficient systems must be developed. Power devices are the key for efficient power electronic systems. In this speech, state-of-the-art power devices and their applications are presented mainly on SiC and RC-IGBT. They increase the output power density, reduce the consumption of natural resources, and increase the efficiency of electric systems.

Prof. Sixiong Chen
Xiamen Kehua Hengsheng Co.,Ltd
Vice President / Chief Engineer
Speech Title: Research on the Reliability of Uninterruptible Power System

Abstract
The reliability of the uninterrupted power system is one of the basic conditions to ensure the safe operation of all the key electrical loads. The power flicker of tens of millisecond may cause the downtime of the key equipment such as the data center server and even lead to the equipment failure and damage. The report explained the reliability of the uninterrupted power system, including how dose the UPS equipment impove the reliability of the uninterrupted power system, how to analyse the reliability of the uninterrupted power system, what is the relationship between reliability and availability, and so on. The report try to, for users, re-explain the reliability of uninterrupted power system from another perspective and eliminate some industry misunderstandings.