中国电工技术学会
China Electrotechnical Society

ICWPT 2022 International Conference on Wireless Power Transfer

学会官方
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2022 国际无线电能传输技术会议

2022 International Conference on Wireless Power Transfer

(ICWPT)

2022.12.2-12.4

中国·重庆（线上）

会议程序册

主办单位：中国电工技术学会

承办单位：中国电工技术学会无线电能传输技术专业委员会
重庆大学

协办单位：中国电源学会无线电能传输技术及装置专业委员会
无线电能传输技术国际联合研究中心
《电工技术学报》编辑部
《中国电机工程学报》编辑部
《电力系统自动化》编辑部

电工技术学报 TRANSACTIONS OF CHINA ELECTROTECHNICAL SOCIETY

中国电机工程学报 PROCEEDINGS OF THE CSEE

电力系统自动化 AUTOMATION OF ELECTRIC POWER SYSTEMS

ICWPT 2022 会议程序册

会议地点: **中国，重庆&线上**

会议日期: 2022.12.2-2022.12.4

名誉主席:	**杨庆新**	中国电工技术学会 理事长
	呼爱国	奥克兰大学 （新西兰）
大会主席:	**朱春波**	哈尔滨工业大学
合作主席:	**孙　跃**	重庆大学
学术委员会主席:	**马澄斌**	上海交通大学
合作主席:	**戴　欣**	重庆大学
	张　献	河北工业大学
出版主席:	**张艺明**	福州大学
合作主席:	**李思奇**	昆明理工大学
	罗志超	剑桥大学 （英国）
大会执行主席:	**孙　于**	中国电工技术学会
会务主席:	**赵　雷**	重庆大学
合作主席:	**蒋金橙**	重庆邮电大学
	谭林林	东南大学
	傅旻帆	上海科技大学
行业主席:	**陈卫东**	安洁无线
合作主席:	**朱　奇**	小米科技
	郝　鹏	楚山科技
	杨国勋	上海万暨电子
大会秘书长:	**刘　明**	上海交通大学
副秘书长:	**章鹏程**	清华大学
	姜金海	哈尔滨工业大学
	张剑韬	哈尔滨工业大学

Welcome Message from Conference Chair 主席欢迎词

Welcome to 2022 online International Conference on Wireless Power Transfer. This is the second ICWPT which provides a platform for international experts and scholars to exchange ideas and promote innovation applications in increased areas.

ICWPT 2022 is sponsored by China Electrotechnical Society (CES) and co-sponsored by Chongqing University. We are going to have a 3-day conference which includes 2 tutorial sessions with 4 lecturers, 2 plenary sessions with 9 keynote speeches, 8 oral sessions with 40 presentations, 2 poster sessions with 84 presentations, and 1 dialogue session.

Wireless power transfer technology is advancing rapidly in China and also in the world. ICWPT will focus on accelerating China' integration with the world and share our research achievement with our international counterpartners. Please fully enjoy the excellent presentations in various tracks of ICWPT 2022.

各位老师、同学、企业家们，本次国际会议的成功举办是中国电工技术学会和中国电源学会的两个无线电能传输技术专委会共同努力的结果。在总结去年南京会议成功经验的基础上，会务组克服了各种不确定因素带来的困难，顺利的完成了筹备工作。

感谢来自重庆大学、河北工大、上交大、上科大、东南大学、福州大学、昆明理工、清华大学、奥克兰大学、多伦多大学、哈工大等众多大学的师生为本次会议的付出，尤其感谢重庆大学的老师和同学们在会议组织工作中精心的准备和细致周到的服务。感谢杨庆新理事长、呼爱国老师的指导，以及电工技术学会韩毅秘书长和各级领导对本次会议的大力支持。

本次会议，我们还得到了美的集团的赞助与支持，以及来自小米、日置、昌泽、斯康达等业内知名企业的支持，安洁无线陈卫东总经理对大会的筹备工作付出了大量精力，在此致以我们诚挚的感谢。企业是我们行业快速发展的希望，也是实现产学研价值的主力军，希望我们的学术交流能够碰撞出灵感，激发出动力与热情，为产业发展助力。

各位同仁，无线电能传输技术代表了未来，具有广阔的发展空间，该技术在当前还处于蓄力期，需要大家共同努力坚定的走下去，扎扎实实做好我们的工作，以准备迎接产业需求爆发时刻的到来。我们要打造一个良性的产学研用生态圈，探索一条将学术资源、产业资源和市场资源完美结合的新路径。

我们要通过 ICWPT 平台，更多的向国际同行学习，不仅学习技术，还要学习先进的创新思维和理念，并融入到我们的工作中。我们要做顶天立地的研究，既要勇于提出新的思路、创新的解决方案，又要扎实的做好应用研究，把论文写在祖国的大地上。

本次大会，我们要充分利用线上会议轻松、高效、便捷的特点，以及参会者更多、观众人数更多、影响面更广的优势，充分展示我们的研究成果，吸引和激励更多的年轻人加入到我们的创新研究行列中来，以促进这项代表了未来的技术更快更好的向前发展。

让我们尽情享受这一年一度的同行聚会和学术盛宴！

Please fully enjoy the academic feast of wireless power transfer.

Sincerely,

Zhu Chunbo
ICWPT 2022 General Chair

ICWPT2022 Agenda

Location: Chongqing, China (Online)
Date: 2022.12.2 – 2022.12.4

Date	Time	Speaker	Report Title		Meeting ID/Host
2022/12/2	9:00-10:30	Prof. MA Chengbin/ Prof. LIU Ming/ Prof. FU Minfan	Tutorial Session 1	MHz Wireless Power Transfer：Architecture, Topology, and Design	腾讯会议 ID 835-2553-9133 主持人：Prof. DAI Xin
	10:30-12:00	Prof. ZHANG Huaiqing		High Power Long Distance Microwave Wireless Power Transmission	
	14:00-15:30	Prof. DAI Xin /Prof. QING Xiaodong	Tutorial Session 2	Key Technologies and Applications of Capacitive Power Transfer Technology	腾讯会议 ID 835-2553-9133 主持人：Prof. LIU Ming
	15:30-17:00	Prof. PENG Han		Approach for Self-Powered Sensor Module with Energy harvesting	
	19:30-21:00	Prof. DAI Xin	中国电源学会无线电能传输技术及装置专业委员会换届会议		腾讯会议 ID 835-2553-9133 主持人：Prof. DAI Xin
2022/12/3	9:00-9:30	Prof. ZHU Chunbo/ Prof. SUN Yue/ Prof. YANG Qingxin	ICWPT2022 Opening Ceremony		腾讯会议 ID 835-2553-9133 主持人：Prof. MA Chengbin
	9:30-10:10	Prof. MADAWALA K Udaya	Plenary Session 1	Optimal Control of Wireless EV Charging Systems	
	10:10-10:50	Prof. WANG Hongjie		WPT for Electric Vehicles at the ASPIRE Engineering Research	
	10:50-12:00	Ms. HE Qiaoling	Awarding Ceremony of “Midea” Student Competition		
	13:30-13:50	Mr. LU Wenguang	Industry Session	High Frequency Power Measurement Solutions （上海日置）	腾讯会议 ID. 835-2553-9133 主持人：Mr. CHEN Weidong
	13:50-14:10	Mr. LI Hao		Litz Wire in WPT Applications（昌泽电子）	
	14:10-14:30	Mr. ZHANG Yuxi		SCOUD Electronics in WPT Applications（斯康达电子）	
	14:30-14:40	Dr. ZHU Qi		小米科技	
	14:40-14:50	Dr. HAO Peng		楚山科技	
	14:50-15:00	Mr. LIANG Shifu		一汽集团	
	15:00-15:10	Dr. YANG Guoxun		万暨电子	
	15:10-15:20	Mr. YANG Chengmeng		泰米科技	
	15:20-15:30	Dr. HE Dawei		易冲科技	
	15:30-15:40	Mr. HE Zhi		赫兹创新	
	15:40-16:40	Mr. CHEN Weidong		圆桌论坛：智能时代，无线传能如何提升用户体验和彰显市场价值	

	16:40-17:20	Mr. YU Daniel/ Mr. CLARCK Nick	**Plenary Session 2**	**The Commercial Value of Wireless Charging**	**腾讯会议 ID 835-2553-9133 主持人：Prof. ZHANG Xian**
	17:20-18:00	Prof. CARVALHO Nuno Borges		**Wireless Power Transmission for Space Exploration**	
	19:00-20:40	LI Lian	**Oral Session 1 (parallel)**	**Electro-magnetic Analysis 1**	**腾讯会议 ID 835-2553-9133 主持人：Prof. CAI Chunwei, Dr. LIAO Zhijuan**
		ZHAO Xueting			
		ZHANG Dashang			
		XIAO Zhuangsheng			
		WEN Haibing			
	19:00-20:40	TIAN Yuhong	**Oral Session 2 (parallel)**	**Optimization and Design 1**	**腾讯会议 ID 602-5344-6378 主持人：Prof. LI Yong, Dr. LUO Bo**
		DONG Lijuan			
		LAN Yu			
		ZHANG Xu			
		SHUAI Dong			
	20:40-22:20	JIANG Jun	**Oral Session 3 (parallel)**	**Electro-magnetic Analysis 2**	**腾讯会议 ID 835-2553-9133 主持人：Dr. XIA Nenghong, Dr. YUAN Huan**
		KONG Pengsheng			
		ZHANG Ning			
		KANG Ning			
		HE Siying			
	20:40-22:20	WU Zhijun	**Oral Session 4 (parallel)**	**Optimization and Design 2**	**腾讯会议 ID 602-5344-6378 主持人：Dr. CHEN Yang, Dr. SHU Xujian**
		ZHU Qiwei			
		DENG Xuan			
		SUN Min			
		ZHANG Pengyu			
2022/12/4	**8:30-9:10**	Prof. KEIICHIRO Kondo	**Plenary Session 3**	**Control and Design of High-power Wireless Power Transmission System Considering Coil Misalignment**	**腾讯会议 ID 835-2553-9133 主持人：Prof. ZHANG Yiming**
	9:10-9:50	Mr. YANK Josh		**Wireless Power in Next-Generation Vehicle Interiors**	
	9:50-10:30	Prof. LUDOIS Daniel		**A Broader View of Capacitive Power Transfer**	
	10:30-11:15	Prof. WANG Yijie	**Plenary Session 4**	**Opportunities, Progress and Challenges in MHz Wireless Power Transfer Technology**	
	11:15-12:00	Prof. ZHANG Xian		**Electromagnetic Energy Flow Analysis in Wireless**	

	13:30-14:30	**Poster Session 1 (parallel)**			线上会议室 见 Poster 首页 主持人： **Prof. ZHOU Yan, Dr. JIANG Jincheng,**
		Poster Session 2 (parallel)			
	14:30-15:30	大会颁奖典礼&新增委员公布		主持嘉宾	腾讯会议 ID **835-2553-9133** 主持人：**Prof. LI Siqi**
		1. 优秀论文颁奖仪式		李思奇教授	
		2. 大会服务奖颁奖仪式		孙跃教授	
		3. 电工技术学会无线电能传输专委会新增委员名单公布		朱春波教授	
		4. 小米在线抽奖		马澄斌教授	
		5. 总结致辞		杨庆新理事长	
	15:30-17:10	ZHANG Song	**Oral Session 5 (parallel)**	**Far Field and Energy Harvest**	腾讯会议 ID **835-2553-9133** 主持人：**Prof. ZHOU Wei, Dr. CHAI Wenping**
		FENG Jiaming			
		TAO Jin			
		LV Xinyue			
		LIANG Junrui			
	15:30-17:10	ZHOU Yang	**Oral Session 6 (parallel)**	**Modelling and Control**	腾讯会议 ID **602-5344-6378** 主持人：**Prof. GUAN Yueshi, Dr. LI Ji**
		ZHANG Bowang			
		ZHANG Baichuan			
		ZHENG Shuxuan			
		YIN Zhenggang			
	17:10-18:50	LIANG Cang	**Oral Session 7 (parallel)**	**Circuit and Topology**	腾讯会议 ID **835-2553-9133** 主持人：**Prof. DONG Shuai, Dr. JIANG Yanwei**
		JIANG Wei			
		NA Tuopu			
		FU Minfan			
		SONG Zhao			
	17:10-18:50	DAI Xin	**Oral Session 8 (parallel)**	**Applications of WPT**	腾讯会议 ID **602-5344-6378** 主持人：**Dr. CHEN Kainan, Dr. YAN Zhengchao**
		LIU Yinchao			
		YUAN Jiangjun			
		QIN Zheng			
		ZHANG Xulian			

1. Tutorial Session

Dec. 2 **Tutorial Session 1** **09:00-10:30** **Tutorial Session 2** **10:30-12:00**	Session Chair: **Prof. DAI Xin** Chongqing University	Session Co-Chair: **Prof. PENG Han** Huazhong University of Science and Technology
Tutorial Session 3 **14:00-15:30** **Tutorial Session 4** **15:30-17:00**	Session Chair: **Prof. LIU Ming** Shanghai Jiao Tong University	Session Co-Chair: **Prof. ZHANG Huaiqing** Chongqing University

09:00-10:30

Dec. 2

Prof. MA Chengbin[1], Prof. LIU Ming[1], Prof. FU Minfan[2]
1.Shanghai Jiao Tong University, 2. Shanghai Tech University, China

Tutorial: **MHz Wireless Power Transfer： Architecture, Topology, and Design**

Abstract: In this tutorial, we plan to comprehensively summarize and explain our pioneer work on system-level approaches for high performance multi-MHz WPT systems. Operation in the MHz frequency band presents technical challenges due to possible increased power losses, strong nonlinearities of devices, and electromagnetic interference (EMI) problem. Special considerations are also needed for the robustness against variations in coil relative position and final load. All these challenges inherently require interdisciplinary efforts that combine the knowledge and insights in power electronics, radio frequency and microwave, circuit modeling, robust analysis, design optimization and control. This tutorial begins with an overview of the major challenges and limitations of the present multi-MHz WPT systems; then mentions the appropriate circuit topology for the main components (power amplifiers and rectifiers) that provide high efficiency, low noise, and robust power conversion. The Class E topologies are especially useful for improving efficiency and facilitating optimization-based design. This tutorial continues to explain the analytical modeling and analysis of the multi-MHz WPT system, providing the foundation for the following design and control efforts. It then describes both the system-level passive design and feedback-based active control to improve the overall system performance in terms of efficiency, noise reduction, and robustness. Particular mention is made of the modeling, design and control aspects of the multiple-receiver WPT systems. Finally, this tutorial also reviews the recent developments in the multi-MHz WPT, such as new applications and dual-band design.

Speaker's Bio:

Chengbin Ma is currently an Professor of electrical and computer engineering. His research interests include energy management, megahertz wireless power transfer, dynamics and motion control, and wide applications in electronic devices, electric vehicles, microgrids, smart grids, etc. Dr. Ma serves as Delegate of Energy Cluster, Chair of Energy Storage Technical Committee and Chair of Shanghai Chapter, IEEE Industrial Electronics Society. He is an Associated Editor for the IEEE Transactions on Industrial Informatics. He and his supervised students won many teaching and research awards at Shanghai Jiao Tong University such as Koguan Top Ten Best Teacher Award in 2017. He also received Research Excellence Award from AirFuel Alliance, USA, in 2019.

Ming Liu is currently an Associate Professor of electrical engineering. His research interests include megahertz wireless power transfer, battery management systems, and high frequency high performance power electronics for emerging applications. Dr. Liu was the recipient of the Top Ten Academic Star Award and the Excellent Ph.D. Thesis Award Nomination from the Shanghai Jiao Tong University, in 2016 and 2018, the Research Excellence Award from AirFuel Alliance, USA, in 2019, the Best Paper Award of IEEE ECCE-Asia in 2020, and the Best Student Paper Prize of IEEE WoW in 2021 with his student. He serves as the Chair of the Wireless Power Transfer for Energy Storage Charging Subcommittee of Energy Storage Technical Committee, IEEE Industrial Electronics Society, and the industry liaison Chair of the wireless power transfer Technical Committee, IEEE Power Electronics Society.

Minfan Fu is currently an Assistant Professor at School of Information Science and Technology (SIST), ShanghaiTech University, Shanghai, China. Between 2016 and 2018, he held a postdoctoral position with the Center for Power Electronics Systems (CPES), Virginia Polytechnic Institute and State University, Blacksburg, VA, USA. His research interests include megahertz wireless power transfer, high-frequency power conversion, high-frequency magnetic design, and applications of wide-band-gap devices. He has ten years of experience in MH wireless power transfer (WPT) research. His first three IEEE journal papers on MHz WPT, which were published in 2014 and 2015, have been world widely cited 132, 118, and 100 times. At CEPS, he worked with Dr. Fred C. Lee, a National Academy of Engineering member and IEEE Fellow, and extended his expertise to the field of high-frequency power electronics. He developed the next-generation GaN-based DC-DC module. Compared to the state-of-the-art products, the peak efficiency and power density have increased from 91% to 96% and from 88 W/inch3 to 130 W/inch3. He holds one US patent and has published 33 papers in prestigious IEEE journals and conferences, such as IEEE Trans. Industrial Electronics and IEEE Trans. Power Electronics. Currently, his total google scholar citations exceeds 660, and one of his first papers was listed by Essential Science Indicators (ESI) as top 1% highly cited papers in engineering and publication years.

10:30-12:00

Dec. 2

Prof. DAI Xin / Dr. QING Xiaodong
Chongqing University, Electrical Engineering, China

Tutorial: **Key Technologies and Applications of Capacitive Power Transfer Technology**

Abstract: Capacitive power transfer (CPT) systems based on high-frequency electric field coupling have attracted much attention recently due to their simplicity and low eddy-current losses. This presentation provides fundamental principles of CPT technology and some key technologies in CPT system including resonant network design, system efficiency improving, performance optimization, power and signal parallel transmission. Furthermore, the CPT applications will be introduced and potential application areas will be discussed.

Speaker's Bio: Xin Dai received the B.S. degree in industrial automation from Chongqing Technology and Business University (formerly Yuzhou University), Chongqing, China, in 2000, and the Ph.D. degree in control theory and control engineering from the College of Automation, Chongqing University, Chongqing, China, in 2006. In 2012, he was a Visiting Scholar with The University of Auckland, Auckland, New Zealand. He is currently a Professor with the School of Automation, Chongqing University, Chongqing, China. His current research interests include inductive and capacitive power transfer technology and nonlinear dynamic behavior analysis of power electronics.

Xiaodong Qing received his B.E and Ph.D degrees in 2015 and 2021 from School of Automation, Chongqing University, Chongqing, China. He joined School of Electrical Engineering, Chongqing University of Science and Technology, Chongqing, China, as a lecture in 2021. His current research interests are wireless power transfer technologies.

14:00-15:30

Dec. 2

Prof. ZHANG Huaiqing
Chongqing University, School of Electrical Engineering, China

Tutorial: **High Power Long Distance Microwave Wireless Power Transmission**

Abstract: The radio frequency and microwave are widely used in communication and detection. The microwave can be also applied in power or energy scenario as microwave oven, industrial heating, etc. Due to its good directivity and atmospheric penetration performance, the microwave can be applied for long-distance wireless power transmission (MWPT). The basic system includes the microwave source, transmit and receive antenna, and rectifier circuit. The high-power microwave wireless power transmission is one of the key technologies of space solar power station (SSPS).

In this presentation, the MWPT concepts as principle, system construction, working mode, research trends in domestic and abroad will be given firstly. And then, the key technologies as the high power, high gain and low cost transmit subsystem, the easy to deploy flexible receiving subsystem for emergency and disaster relief scenarios, and the MWPT system design theories will be discussed. Lastly, the MWPT application area especially for typical scenarios, the technology development trend and some possible innovations will be mentioned.

Speaker's Bio: Dr. Huaiqing Zhang, is now a professor in School of Electrical Engineering, Chongqing University. He is the leader of Chongqing Talents Innovation and entrepreneurship team and the Chongqing innovation group. He worked as a senior visiting professor in CEMI of Utah University, USA from 2012 to 2013.

He is the deputy director of management committee of Bishan national high-tech development zone, the vice chairman of the space solar power station special committee of the Chinese aerospace society, the member of the wireless power transmission special committee of the Chinese electrotechnical society, the vice chairman of the electromagnetic field teaching and textbook research association of Chinese universities. His research interests include space solar power station, microwave wireless power transmission and electric power signal processing, etc.

15:30-17:00

Dec. 2

Prof. PENG Han

Huazhong University of Science and Technology, School of Electrical and Electronics Engineering, China

Tutorial: **Approach for Self-Powered Sensor Module with Energy harvesting**

Abstract: Energy harvesting is the process by which energy is acquired from environmental sources. Such self-powered system will become the important supporting technology for distributed information equipment in the era of Internet-of-Everything (IoT). Vibration and magnet energy widely exists in the environment and can be very stable and continuous. Those advantages make them premium energy sources for harvesting and having broadly applications in national infrastructure and defenses. To convert environment energy into electricity, energy collection module and energy conversion module are required. As environment energy is usually weak and highly dispersive, it is important to enhance the energy harvesting capability within certain harvester's volume with an efficiency energy transmitting and conversion technique.

This seminar aims at providing related researchers and engineers with the fundamental knowledge (mainly for entry level professionals) as well as advanced designed techniques (mainly for senior-level professionals) of fundamentals and key technologies for energy harvesting. New technologies for energy enhanced energy harvester, maximum power transferring and low loss micro-power conversion techniques will also be explored.

Speaker's Bio: Dr. Han Peng received the B.S. degrees from Southeast University, Nanjing, China and the Ph.D. degree from Rensselaer Polytechnic Institute, Troy, NY, USA, in 2006 and 2011, respectively, all in electrical engineering. She is currently a full professor at Huazhong University of Science and Technology (HUST) at Wuhan China since 2018. Prior to that, she was a lead electrical engineer at the Global Research Center of General Electric Company, Niskayuna, USA. She has also been an adjunct professor at Rensselaer Polytechnic Institute in 2012.

Dr. Han Peng has been focusing on high frequency, high power density power conversion applications with III-V group power transistors. Her research covers various different applications, as energy harvesting, communication power, healthcare electronics, more electrical aircraft systems and electric vehicles. She has published more than 50 papers in refereed journals and international conference proceedings. She has hold four US patents and six Chinese patents.

Dr. Han Peng is an Associate Editor of the IEEE Transactions on Power Electronics since 2017. She also served as Associate Technical Program Chair for IEEE ECCE 2019 and Vice Chair for ECCE 2022. She is the member for women scientist association under China Power Supply Society.

2. Opening Ceremony and Plenary Session

ICWPT 2022 Opening Ceremony

Dec. 3 **9:00-9:30**	• Welcome from Chairs **Prof. ZHU Chunbo** Harbin Institute of Technology **Prof. SUN Yue** Chongqing University **Prof. HU Patrick Aiguo** University of Auckland **Prof. YANG Qingxin** China Electrotechnical Society	• Ceremony Host: **Prof. MA Chengbin** Shanghai Jiao Tong University

ICWPT 2022 Plenary Session

Dec. 3 **9:30-10:10**	**Optimal Control of Wireless EV Charging Systems** Prof. MADAWALA K. Udaya University of Auckland		Session Chair: Prof. MA Chengbin
10:10-10:50	**Inductive WPT for Electric Vehicles at the ASPIRE Engineering Research Center** Prof. WANG Hongjie Utah State University		
10:50-12:00	**Awarding Ceremony of Midea Competition**		Session Chair: Mr. CHEN Weidong
13:30-15:40	**Industry Session**	**日置（上海）**	
		昌泽电子	
		斯康达电子	
		小米科技	
		楚山科技	
		一汽集团	
		万暨电子	
		泰米科技	
		易冲科技	
		赫兹创新	
15:40-16:40	**圆桌论坛：智能时代，无线传能如何提升用户体验和彰显市场价值** Mr. CHEN Weidong Anjie Wireless Technology Co. Ltd.		
16:40-17:20	**The Commercial Value of Wireless Charging** Mr. YU Daniel and CLARCK Nick IntDevice		Session Chair: Prof. ZHANG Xian
17:20-18:00	**Wireless Power Transmission for Space Exploration** Prof. CARVALHO Nuno Borges University of Aveiro		

ICWPT 2022 Plenary Session

Dec. 4 **08:30-09:10**	**Control and Design of High-power Wireless Power Transmission System Considering Coil Misalignment** Prof. KEIICHIRO Kondo Waseda University	Session Chair: Prof. ZHANG Yiming
09:10-09:50	**Wireless Power in Next-Generation Vehicle Interiors** Mr. YANK Josh Yank Technologies	
09:50-10:30	**A Broader View of Capacitive Power Transfer** Prof. LUDOIS Daniel University of Wisconsin Madison	
10:30-11:15	**Opportunities, Progress and Challenges in MHz Wireless Power Transfer Technology** Prof. WANG Yijie Harbin Institute of Technology	
11:15-12: 00	**Electromagnetic Energy Flow Analysis in Wireless** Prof. ZHANG Xian Hebei University of Technology	

3. Plenary Session

Dec. 3 9:30-18:00	Session Chair: **Prof. MA Chengbin** Shanghai Jiao Tong University	Session Co-Chair: **Prof. DAI Xin** Chongqing University

9:30-10:10
Dec. 3

Prof. MADAWALA K. Udaya

University of Auckland

Topic: **Optimal Control of Wireless EV Charging Systems**

Abstract: Perceived as one of the most promising means of future transport, Electric vehicles (EVs) are currently gaining wider acceptance. However, there are challenges in relation to techniques of charging and its impact on the grid. Hence, both grid integration and charging techniques of EVs have become one of the main focuses of current research. EVs can be charged either by wired or wireless means, and the latter, based primarily on inductively coupled wireless power transfer (WPT) technology, is becoming increasingly popular being convenient, safe, and ideal for both stationary and dynamic (while moving) EV charging. This seminar discusses the optimal control strategies that have been developed for wireless EV charging applications.

Speaker's Bio: Udaya K. Madawala graduated with a B.Sc. (Electrical Engineering) (Hons) degree from The University of Moratuwa, Sri Lanka in 1987, and received his PhD (Power Electronics) from The University of Auckland, New Zealand in 1993 as a Commonwealth Doctoral Scholar. At the completion of his PhD, he was employed by Fisher & Paykel Ltd, New Zealand, as a Research and Development Engineer to develop new technologies for motor drives. In 1997 he joined the Department of Electrical and Computer Engineering at The University of Auckland and, at present as a Full Professor, he focuses on a number of power electronics projects related to bi-directional wireless EV charging systems for V2X applications.

Udaya is a Fellow of the IEEE, and has over 30 years of both industry and research experience in the fields of power electronics and energy. He has served both the IEEE Power Electronics and Industrial Electronics Societies in numerous roles, relating to editorial, advisory, conference, technical committees and chapter activities. Udaya was an Associate Editor for IEEE Transactions on Power Electronics, a Distinguished Lecturer and member of both the Administrative Committee and Membership Development Committee of the IEEE Power Electronics Society. He was the General Chair of the 2nd IEEE Southern Power Electronics Conference (SPEC)- 2016, held in New Zealand, and is also the Chair of SPEC Steering Committee. Udaya, who has over 300 journal and conference publications, holds a number of patents related to wireless power transfer (WPT) and power converters, and is a consultant to industry.

10:10-10:50

Dec. 3

Prof. WANG Hongjie

Utah State University

Topic: **Inductive WPT for Electric Vehicles at the ASPIRE Engineering Research Center**

Abstract: It will start with a brief intro of ASPIRE ERC and Utah State University. It will cover the inductive wireless transfer systems, including stationary and dynamic, developed at USU. Ongoing research, pilots, and future vision of inductive wireless power transfer will be presented.

Speaker's Bio: Since 2019, Dr. Hongjie Wang is an Assistant Professor with Electrical and Computer Engineering Department at Utah State University. At USU, he serves as the co-director of the Utah State University Power Electronics Laboratory (UPEL) and leads one of the four projects within ASPIRE looking at charging station of the future. His current research interests include dc power distribution, analysis, design and control of resonant converters, extreme fast charging, grid interface power converter, health monitoring and diagnosis of power converters, and dynamic wireless power transfer for electrified transportation.

13:30-13:50

Dec. 3

Dr. PAN Dongyun and Dr. LU Wenguang

HIOKI (Shanghai) Measurement Technologies Co., Ltd.

Topic: **High Frequency Power Measurement Solution Based on Automatic Phase Compensation Technology of Current Sensor**

Abstract: With the rapid development of power electronics, it will face new topics and challenges, and put forward higher requirements for measuring instruments. HIOKI (daily set) launched a new generation flagship power analyzer PW8001 in response to the challenges of multi-channel, high-precision and high bandwidth signal measurement. The PW8001 is equipped with a "new current sensor interface", which can automatically perform phase compensation and accurately measure high-frequency and low power factor power by connecting the corresponding current sensor. For the field of wireless energy transmission, high-precision efficiency, loss measurement characteristics and highly competitive performance can provide customers with more professional measurement data support.

Speaker's Bio:

PAN Dongyun, the general manager of HIOKI (Shanghai) MEASUREMENT TECHNOLOGIES CO., LTD., has successively served as the technical director and deputy general manager of HIOKI (Shanghai) MEASUREMENT TECHNOLOGIES CO., LTD.. He graduated from Instrument Engineering of Shanghai University of Technology.

LU Wenguang, graduated from Xi'an Communication University in 2007, majoring in electronic engineering. 2019 present: Technical Support Engineer of HIOKI (Shanghai) MEASUREMENT TECHNOLOGIES CO., LTD.. He is good at system integration control of various instruments, and has long been committed to optimizing test plans for customers and solving customer test difficulties.

16:40-17:20

Dec. 3

Mr. YU Daniel and Mr. CLARCK Nick

CEO and CFO, IntDevice Ltd.

Topic: **The Commercial Value of Wireless Charging**

Abstract: As the world's transport is increasingly electric and autonomous, charging needs to be everywhere and easy to use. To accelerate the adoption of wireless charging which delivers this future, we need to clearly state for customers the benefits of wireless. These benefits can vary for different use cases. We share our years of experience developing solutions with customers and explain why wireless charging will become the default form of charging in the future.

Speaker's Bio: Daniel is the CEO & Founder of IntDevice (NZ) Limited and he has a Masters in Engineering from the University of Auckland. Daniel founded IntDevice 9 years ago and has been a serial entrepreneur, with expertise in wireless power transfer and customer-focused research and development. He has over 20 years' experience working for several global technology companies.

17:20-18:00

Dec. 3

Prof. CARVALHO Nuno Borges

University of Aveiro

Topic: **Wireless Power Transmission for Space Exploration**

Abstract: In this talk, the use of wireless power transmission is discussed within the space exploration topic.

Topics such as space-based power satellites, including energy efficiency discussion in these links and how to optimize them.

Speaker's Bio: Nuno Borges Carvalho (S'97–M'00–SM'05-F'15) was born in Luanda, Angola, in 1972. He received the Diploma and Doctoral degrees in electronics and telecommunications engineering from the University of Aveiro, Aveiro, Portugal, in 1995 and 2000, respectively.

He is currently a Full Professor and a Senior Research Scientist with the Institute of Telecommunications, University of Aveiro and an IEEE Fellow. He coauthored several books including Wireless Power Transmission for Sustainable Electronics (Wiley, 2020). He has been a reviewer and author of over 400 papers in magazines and conferences. He is the Editor in Chief of the Cambridge Wireless Power Transfer Journal, an associate editor of the IEEE Microwave Magazine

He is a Distinguished Lecturer for the RFID-Council and was a Distinguished Microwave Lecturer for the IEEE Microwave Theory and Techniques Society. In 2022 he is the IEEE-MTT President-Elect.

Dec. 4 08:30-12:00	Session Chair: **Prof. ZHANG Yiming** Fuzhou University	Session Co-Chair: **Prof. DAI Xin** Chongqing University

08:30-09:10
Dec. 4

Prof. KEIICHIRO Kondo
Waseda University

Topic: **Control and Design of High-power Wireless Power Transmission System Considering Coil Misalignment**

Abstract: In this talk, the power control and design method of the high-power wireless power transmission system will be presented and the details will be updated soon.

Speaker's Bio: Keiichiro Kondo received the B.S. and Ph.D. degrees in engineering from the Department of Electrical Engineering, School of Science Engineering, Waseda University, Tokyo, Japan, in 1991 and 2000, respectively. He joined the Railway Technical Research Institute, Kokubunji, Japan, in 1991 and was engaged in the research and development for power electronics applied to railway vehicle traction. From April 2007 to March 2018, he was with the Electrical and Electric Engineering Course, Graduate School and Faculty of Engineering, Chiba University, Chiba, Japan. Since April 2018, he has been a Professor with the Faculty of Science Engineering, Waseda University. His current research interests include power electronics, AC motor drives, energy storage devices, and wireless power transmission and their applications to railway systems.,Prof. Kondo titled Professional Engineer Japan (Mechanical Engineering, Technical Management). He is a Senior Member of the Institute of Electrical Engineers of Japan (IEEJ).

09:10-09:50
Dec. 4

Mr. YANK Josh
CEO, Yank Technologies, Inc.

Topic: **Wireless Power in Next-Generation Vehicle Interiors**

Abstract: In this talk, wireless power transfer system for next generation vehicle interiors will be discussed and the details will be updated soon.

Speaker's Bio: Josh Yank is the CEO of Yank Technologies, a magnetic resonant startup dedicated to developing long-range, high power wireless power solutions. Mr. Yank is an experienced technology executive specializing in areas like RF design and analog circuit design. He holds patents in amplifier and antenna technology for resonant inductive systems.

09:50-10:30

Dec. 4

Prof. LUDOIS Daniel

University of Wisconsin Madison

Topic: **A Broader View of Capacitive Power Transfer**

Abstract: Within the world of wireless power transfer (WPT), capacitive coupling is often overlooked as an effective means to transfer power. There is a tendency to compare capacitive power transfer (CPT) within the context of existing inductive power transfer (IPT) applications, thereby limiting CPT's performance or applicability. This talk will discuss the applicability of CPT broadly and how its unique features can enable solutions that IPT cannot. Example applications include rotating machinery, industrial automation and tethered systems. Research vectors within the CPT community will be identified and discussed as well.

Speaker's Bio: Daniel C. Ludois (Senior Member, IEEE) received the B.S. in Physics from Bradley University, Peoria IL and his M.S. and Ph.D. degrees in electrical engineering at the University of Wisconsin - Madison in 2006, 2008 and 2012 respectively. Dr. Ludois cofounded C-Motive Technologies in 2012, a company developing capacitively coupled power conversion technologies. Today C-Motive is working to commercialize electrostatic machines. In 2013 Dr. Ludois joined the UW-Madison Department of Electrical and Computer Engineering faculty where he is currently a Jean van Bladel Associate Professor. He is also a Research Director for the Wisconsin Electric Machines and Power Electronics Consortium (WEMPEC). Dr. Ludois's interests include power electronics, electric machines, applied electromagnetics and entrepreneurship.

Dr. Ludois received the USA National Science Foundation CAREER Award in 2015 and was named a Moore Inventor Fellow by the Gordon & Betty Moore Foundation in 2017. He has co-authored 4 IEEE prize papers.

10:30-11:15

Dec. 4

Prof. WANG Yijie

Harbin Institute of Technology

Topic: **Opportunities, Progress and Challenges in MHz Wireless Power Transfer Technology**

Abstract: With the fast development in wireless power transfer (WPT) technology, more and more needs are raised, such as high spatial freedom, long transfer distance, small occupied space and so on. High frequency power conversion technology provides a very effective means to improve the performance of WPT system. The operating frequency of WPT system gradually increases to several MHz and even tens of MHz. However, during the increment of operating frequency, many issues need to be solved such as high switching loss, high driving loss and high magnetic loss.

This talk presents the overview and corresponding key technologies of high frequency wireless power transfer system. Firstly, the advanced inverter and receiver topologies are analyzed, which can achieve low switching loss with the soft-switching characteristics. Secondly, different from the square-wave driving method in low frequency situation, resonant driving method shows good efficiency performance when it is used in high frequency situations which can fully recycle the input capacitance energy. Thirdly, the air-core magnetic coupling and capacitive coupling ways show well application potential under high frequency situations. Finally, the development trend and challenges of high frequency resonant converter technology are discussed, such as high efficiency and high power density approaches, multi-band transmitter or receiver, far-field WPT system, and magnetic optimization for large space transmission in 2D and 3D conditions.

Speaker's Bio: Prof. Yijie Wang received the B.S., M.S., and Ph.D. degrees in electrical engineering from the Harbin Institute of Technology, Harbin, China, in 2005, 2007, and 2012, respectively. From 2012 to 2014, he was a Lecturer with the Department of Electrical and Electronics Engineering, Harbin Institute of Technology. From2014 to 2017, he was an Associate Professor with the Department of Electrical and Electronics Engineering, Harbin Institute of Technology. Since 2017, he has been a Professor with the Department of Electrical and Electronics Engineering, Harbin Institute of Technology. His research interests include dc– dc converters, soft-switching power converters, power factor correction circuits, digital control electronic ballasts, and LED lighting systems. Prof. Wang is an Associate Editor of the IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, the IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, the IEEE ACCESS, the IET Power Electronics, and the Journal of Power Electronics

11:15-12:00

Dec. 4

Prof. ZHANG Xian
Hebei University of Technology

Topic: **Electromagnetic Energy Flow Analysis in Wireless**

Abstract: Wireless power transfer is an emerging direction of electrical engineering in recent years. It is a multi-disciplinary and strong cross-research field with electromagnetic theory as the core. In the development of this technology, there are many methods to explain the working principle of wireless power transfer. Previous research has established a number of appellations and definitions to describe it. By analyzing the general characteristics of electromagnetic energy flow of basic electrical components, this keynote speech establishes the electromagnetic energy flow model under sinusoidal excitation for wireless power transfer. It explores the fundamental nature of spatial magnetic field coupling and obtains the key factors and basic definition of the wireless power transfer. Finally, it describes the working mode of wireless power transfer in electromagnetic near-field area from the viewpoint of electromagnetic energy flow. Provides implications for revealing the general principles of wireless power transfer technology.

Speaker's Bio: Zhang Xian, Doctor of Engineering, Professor. At present, he is the director of the China Electrotechnical Society, the secretary-general of the National Specialized Committee on Wireless Power Transmission Technology, the outstanding young technological talents in Tianjin, and the candidate of Tiangong University outstanding young. His research interests include intelligent high-power wireless power transmission technology, measurement of three-dimensional electromagnetic field, and numerical calculation of modern engineering electromagnetic field. He has published more than ten papers in " IEEE TRANSACTIONS ON MAGNETICS ", " Transactions of China Electrotechnical Society" and " Proceedings of The Chinese Society for Electrical Engineering", co-published one monograph and obtained six invention patents. He has been undertaking and leading three projects of the National Natural Science Foundation of China, three projects of the Tianjin Municipal Natural Science Foundation. He received two outstanding final projects from the Department of Engineering and Materials Science of the National Natural Science Foundation of China. He won the one first and one second prize of the scientific and technological progress of Tianjin, and participated in the development of four national standards for wireless charging of electric vehicles.

4. Roundtable Dialogue Session

15:40-16:40

Dec. 3

Technical Dialogue: 835-2553-9133

ICWPT 2022 Roundtable Dialogue

Topic: In the age of intelligence, how can WPT technology enrich user experience and market value?

主　题：**智能时代，无线传能如何提升用户体验和彰显市场价值?**

主持人：陈卫东　　总经理，安洁无线

Guests (特邀嘉宾):

朱　奇	无线充电技术专家，小米科技
梁士福	充电产品经理，一汽集团
郝　鹏	总经理，楚山科技
杨国勋	总经理，万暨电子
杨成蒙	首席技术官，泰米科技
贺大玮	联合创始人，易冲科技
何　智	副总裁，赫兹创新半导体

5. Oral Session

Dec. 3	腾讯 ID	Session Chair:	Session Co-Chair:
Oral Session 1-2 19:00-20:40	835-2553-9133	**Prof. CAI Chunwei** Harbin Institute of Technology (Weihai)	**Dr. LIAO Zhijuan** China University of Mining and Technology
	602-5344-6378	**Prof. LI Yong** Southwest Jiaotong University	**Dr. LUO Bo** City University of Hong Kong
Oral Session 3-4 20:40-22:20	835-2553-9133	**Dr. XIA Nenghong** Shanghai Electric Power University	**Dr. YUAN Huan** Xi'an Jiaotong University
	602-5344-6378	**Dr. CHEN Yang** Southwest Jiaotong University	**Dr. SHU Xujian** Fuzhou University

Dec. 4	腾讯 ID	Session Chair:	Session Co-Chair:
Oral Session 5- 6 15:30-17:10	835-2553-9133	**Prof. ZHOU Wei** Southwest Jiaotong University	**Dr. CHAI Wenping** Harbin Institute of Technology Weihai Campus
	602-5344-6378	**Prof. GUAN Yueshi** Harbin Institute of Technology	**Dr. LI Ji** China University of Petroleum (Beijing)
Oral Session 7-8 17:10-18:50	835-2553-9133	**Prof. DONG Shuai** Harbin Institute of Technology	**Dr. JIANG Yanwei** Fuzhou University
	602-5344-6378	**Dr. CHEN Kainan** Tsinghua University	**Dr. YAN Zhengchao** Xi'an Jiaotong University

19:00-20:40
Dec. 3

Chair:
Prof. CAI Chunwei

Co-chair:
Dr. LIAO Zhijuan

Oral Session 1 Electromagnetic Analysis 1 腾讯会议 ID 835-2553-9133

Time	Paper ID	Paper	Speaker
19:00-19:20	O-1 (126)	基于双极性耦合磁场调控的高抗偏移偏转无线电能传输系统	LI Lian
19:20-19:40	O-2 (135)	Design and Modeling of Helmholtz Coil Based on Winding Method Optimization	ZHAO Xueting
19:40-20:00	O-3 (172)	基于深度学习的无线电能传输系统线圈互感识别算法研究	ZHANG Dashang
20:00-20:20	O-4 (227)	一种符合电磁安全标准的多中继大范围无线电能传输系统	XIAO Zhuangsheng
20:20-20:40	O-5 (259)	A Uniform Magnetic Field Generation Method Utilizing Passive Induction Coil for Wireless Power Transfer System	WEN Haibing

19:00-20:40
Dec. 3

Chair:
Prof. LI Yong

Co-Chair:
Dr. LUO Bo

Oral Session 2 Optimization and Design 1 腾讯会议 ID 602-5344-6378

Time	Paper ID	Paper	Speaker
19:00-19:20	O-6 (2)	The solenoid magnetic coupler anti-misalignment capability optimization	TIAN Yuhong
19:20-19:40	O-7 (132)	基于新型螺旋式谐振线圈的无线电能传输特性研究	DONG Lijuan
19:40-20:00	O-8 (178)	Multi-objective Optimization of Magnetic Coupler in Wireless Charging System Based on Deep Belief Network	LAN Yu
20:00-20:20	O-9 (162)	Loss Analysis of Rectifier Circuit and Its Optimization Technique in Wireless Power Transfer System	ZHANG Xu
20:20-20:40	O-10 (179)	Design Method of Input Capacitor Parameters for Suppressing the Problem of RHPz of the Buck Converter in the WPT System	DONG Shuai

20:40-22:20
Dec. 3

Chair:
Dr. XIA Nenghong

Co-chair:
Dr. YUAN Huan

Oral Session 3 Electromagnetic Analysis 2 腾讯会议 ID 835-2553-9133

Time	Paper ID	Paper	Speaker
20:40-21:00	O-11 (264)	基于二聚化人工磁原子链的多米诺无线电能传输系统	JIANG Jun
21:00-21:20	O-12 (129)	基于强耦合磁屏蔽结构的电动汽车无线充电系统漏磁与效率优化	KONG Pengsheng
21:20-21:40	O-13 (251)	Research on Active Leakage Magnetic Field Suppression Techniques Applied in Electric Vehicle Wireless Chargers	ZHANG Ning
21:40-22:00	O-14 (266)	3D Magnetic Field Shaping based on Two-coil Transmitter	KANG Ning
22:00-22:20	O-15 (269)	Load and Inductance Identification Method for WPT Systems Based on Neural Network	HE Siying

20:40-22:20
Dec. 3

Chair:
Dr. CHEN Yang

Co-Chair:
Dr. SHU Xujian

Oral Session 4 Optimization and Design 2 腾讯会议 ID 602-5344-6378

Time	Paper ID	Paper	Speaker
20:40-21:00	O-16 (216)	Influence of Frequency on Transmission Performance of Multi-relay Wireless Power Supply System	WU Zhijun
21:00-21:20	O-17 (219)	Analysis and Design of SS Topology Parity Time Symmetric MC-WPT Systems	ZHU Qiwei
21:20-21:40	O-18 (246)	基于 LCC-S/S 复合谐振式无线电能传输系统输出特性分析	DENG Xuan
21:40-22:00	O-19 (192)	基于双侧 LC 谐振网络的双向电场耦合式无线电能传输	SUN Min
22:00-22:20	O-20 (231)	Review of Modulation Strategies for Single-Phase High-Frequency Resonant Inverters	ZHANG Pengyu

15:30-17:10
Dec. 4

Chair:
Prof. ZHOU Wei

Co-chair:
Dr. CHAI Wenping

Oral Session 5 Far Field and Energy Harvest 腾讯会议 ID: 835-2553-9133			
Time	Paper ID	Paper	Speaker
15:30-15:50	O-21 (152)	Generation of an Airy Beam Based on A Holographic Scalar Metasurface	ZHANG Song
15:50-16:10	O-22 (245)	超声波无线电能传输系统 LCLC-S 阻抗匹配网络设计	FENG Jiaming
16:10-16:30	O-23 (168)	A magnetic field energy harvester to power micro-power sensors on the freight train for railway application	TAO Jin
16:30-16:50	O-24 (239)	电磁式振动能量收集器复阻抗匹配关键参数分析与系统设计	LV Xinyue
16:50-17:10	O-25 (248)	A Battery-free Human Activity Recognition System Based on Kinetic Energy Harvesting	LIANG Junrui

15:30-17:10
Dec. 4

Chair:
Prof. GUAN Yueshi

Co-chair:
Dr. LI Ji

Oral Session 6 Modelling and Control 腾讯会议 ID: 602-5344-6378			
Time	Paper ID	Paper	Speaker
15:30-15:50	O-31 (136)	Applicability analysis of Coupled-mode Theory Model in Capacitive Power Transfer system	ZHOU Yang
15:50-16:10	O-32 (141)	Frequency Tracking Synchronization Technique for A Bidirectional Inductive Power Transfer System	ZHANG Bowang
16:10-16:30	O-33 (186)	基于电流前馈控制的动态无线供电系统输出波动抑制策略研究	ZHANG Baichuan
16:30-16:50	O-34 (221)	基于双边 LCC 谐振的双向无线电能传输系统控制策略	ZHENG Shuxuan
16:50-17:10	O-35 (234)	The Power Control of a Multiple Pick-up Bidirectional Wireless Power Transfer System	YIN Zhenggang

17:10-18:50
Dec. 4

Chair:
Prof.
DONG Shuai

Co-chair:
Dr. JIANG Yanwei

Oral Session 7 Circuit and Topology 腾讯会议 ID: 835-2553-9133

Time	Paper ID	Paper	Speaker
17:10-17:30	O-26 (201)	基于 LCC 补偿拓扑的单对多恒压无线能量传输效率优化设计策略	LIANG Cang
17:30-17:50	O-27 (215)	Research and Design of LC Series Resonant WPT System with Modulation Control Method for Supercapacitor Charging	JIANG Wei
17:50-18:10	O-28 (253)	Application of interleaved parallel three-level Buck converter based on non-ideal state analysis in WPT system	NA Tuopu
18:10-18:30	O-29 (256)	Coupler Comparison of Inductive and Capacitive Power Transfer Systems	FU Minfan
18:30-18:50	O-30 (146)	Modular Multiport Wireless Energy Router with Flexible Power Flow and its Voltage Regulation Strategy	SONG Zhao

17:10-18:50
Dec. 4

Chair:
Dr. CHEN Kainan

Co-chair:
Dr. YAN Zhengchao

Oral Session 8 Applications of WPT 腾讯会议 ID: 602-5344-6378

Time	Paper ID	Paper	Speaker
17:10-17:30	O-36 (225)	Pickup Interoperability Research in Dynamic Wireless Charging for Electric Vehicles	DAI Xin
17:30-17:50	O-37 (161)	A Method for Realizing ZVS and Constant Voltage Using PDM with Parameter Change in WPT System	LIU Yinchao
17:50-18:10	O-38 (150)	Electrical Characteristics of Magnetic Couplers in Inductive Power Transfer for Autonomous Underwater Vehicles	YUAN Jiangjun
18:10-18:30	O-39 (211)	基于动态行波磁场的水下自主航行器无线电能传输系统	ZHENG Qin
18:30-18:50	O-40 (228)	水下 WPT 系统的高抗偏移双发射空间螺旋耦合机构	ZHANG Xulian

6. Poster Session

Dec. 4 Poster Session 1 13:30-14:30 Poster Session 2 13:30-14:30	Session Chair: **Prof. ZHOU Yan** Nanjing University of Posts and Telecommunications	Session Co-Chair: **Dr. JIANG Jincheng** Chongqing University of Posts and Telecommunications

Poster Session 1		Poster Session 2	
Group	**腾讯会议 ID**	**Group**	**腾讯会议 ID**
P1-P5	890-815-545	P51-P55	770-836-782
P6-P10	945-782-490	P56-P60	972-887-152
P11-P15	370-199-298	P61-P65	788-222-609
P16-P20	872-842-495	P66-P70	494-780-913
P21-P25	519-819-625	P71-P75	716-185-847
P26-P30	225-215-835	P76-P80	947-370-403
P31-P35	777-946-443	P81-P85	834-936-030
P36-P40	481-129-668	P86-P90	231-742-518
P41-P45	141-718-252	P91-P95	733-395-131
P46-P50	771-832-658	P96-P100	452-784-871

Poster Session 1: Dec. 4 13:30-14:30

腾讯 ID	Paper	Title	Speaker
890-815-545	P-1 (120)	Quadrature Six-coils Wireless Charging with High Misalignment Tolerance and Constant Voltage Output	GONG Zhaowei
	P-2 (121)	Inductively Coupled Power Transfer System Based Constant Voltage and Constant Current Charging for Rail Transit System	YANG Jixin
	P-3 (122)	Analysis of influence on output characteristics of relay mode wireless power supply system under parameter perturbation	XIAO Jing
	P-4 (124)	Modeling and Analysis of Bidirectional Wireless Power Transfer System with Asymmetric Parameters	WEI Chenyang
	P-5 (125)	Adaptive Wireless Charging System with Constant Current/Constant Voltage Output Based on SPWM Inverter Control	NIU Wangqiang

Poster Session 1: Dec. 4 13:30-14:30			
腾讯 ID	**Paper**	**Title**	**Speaker**
945-782-490	P-6 (127)	Experimental Investigation of Underwater Wireless Power Transfer with Relay Coils	NIU Wangqiang
	P-7 (131)	Design and research on coupling mechanism of inductive power transmission	BAI Longlei
	P-8 (133)	Efficiency optimization method for wireless power transfer system between the rocket and the ground based on energy compensation	ZHAN Wang
	P-9 (134)	Simulation Research of the Effect of Temperature on Transmission Efficiency of Wireless Power Transfer System via Coupled Magnetic Resonances	GAO Pengfei
	P-10 (137)	Optimal Efficiency Control of Multi-Transmit Array WPT System for Constant Power Output	LI Xingfei
Poster Session 1: Dec. 4 13:30-14:30			
370-199-298	P-11 (138)	An Efficiency Optimization Method Based on A Novel Semiactive Rectifier Structure for Inductive Power Transfer Systems	LI Yong
	P-12 (139)	Optimized Design of the DD Coil for Improved Misalignment Tolerance	DONGYE Zhonghao
	P-13 (140)	Analysis of Geometric Characteristics of Three-terminal Shaft Loosely Coupled Transformer Based on LCC-S Compensation	LI Yansong
	P-14 (142)	A Wireless Power Transfer System in Seawater with Low Eddy Current Loss and Constant-Voltage Output	QU Xiaohui
	P-15 (144)	Wireless Charging System with High Tolerance of Misalignment and Variation Load	LI Zhenjie

Poster Session 1: Dec. 4 13:30-14:30			
腾讯 ID	**Paper**	**Title**	**Speaker**
872-842-495	P-16 (145)	Power Relay Module Based Charging Function Extension for Standardized Wireless Charger	FU Minfan
	P-17 (147)	电动汽车无线充电中含铁氧体磁芯的利兹线圈损耗计算模型	YANG Fuyuan
	P-18 (149)	Analysis and Design of Magnetic Cores for Rotary Wireless Power Transfer Applications	LIU Zicheng
	P-19 (153)	Modulation of Deflected Bessel Beams based on Reconfigurable Metasurface	LI Long
	P-20 (154)	Design of Rectifier with Harmonic Feedback Capability for Low Power Battery-Free IoT Application	ZHANG Jinyao
Poster Session 1: Dec. 4 13:30-14:30			
519-819-625	P-21 (155)	一种改进型电动汽车无线充电磁耦合机构互操作性评价方法研究	SONG Kai
	P-22 (156)	Research on Parameter Modeling and Turn Optimization Design Method of WPT Magnetically Coupled System	CHEN Qingbin
	P-23 (157)	Sensitivity Analysis of S/SP Compensation Capacitance Parameters and ZVS Implementation in Wireless Power Transfer System	CHEN Qingbin
	P-24 (158)	混合补偿式架空地线感应取能方法研究	LI Xudong
	P-25 (160)	Simulation and Optimization Analysis of Magnetic Coupling Mechanism for Resonant Wireless Power Transfer	GUO Junjie

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腾讯 ID	**Paper**	**Title**	**Speaker**
225-215-835	P-26 (163)	动态无线电能传输系统滑模控制方法及其局部扰动响应研究	BIN Cui
	P-27 (164)	A High Anti-misalignment Coupling Mechanism for Dynamic Wireless Charging of Electric Vehicles	LI Zhenjie
	P-28 (165)	A Dynamic Tuning Method for Wireless Charging System Based on Adjustable Inductor	LI Zhenjie
	P-29 (166)	Simultaneous Wireless Power and Data Transfer System Using Parallel Injection Communication Method	BAO Guangjie
	P-30 (167)	Inverted Decoupling Control Design for Output-Parallel WPT System applied in PSDF Building Power Distribution System	WU Xiaoming
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777-946-443	P-31 (169)	Coupling Comparison of Magnetic Couplers for Mid-range Wireless Power Transfer Systems	YAO Yousu
	P-32 (170)	Model-Inverse-Based Output Control of the Multi-Excitation-Unit WPT System	LV Xiao
	P-33 (171)	应用于无线充电系统的三线圈位置检测系统及其定位算法设计	SONG Kai
	P-34 (173)	Reconfigurable Topology of Electric Vehicle Wireless Power Transfer System to Achieve Constant-Current and Constant-Voltage Charging Based on Multiple Windings	ZHANG Yiming
	P-35 (174)	The Impact of Metal Hull of AUVs for Underwater Wireless Power Transfer System	ZHANG Yuanqi

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腾讯 ID	**Paper**	**Title**	**Speaker**
481-129-668	P-36 (177)	Synchronous Identification of load and Mutual Induct-ance for Multi-frequency Multi-load WPT System	HUANG Dongxiao
	P-37 (181)	Design and Parameter Optimization of High-power Coupling Mechanism	XU Rui
	P-38 (182)	A Cross-Shaped Solenoid Magnetic Coupler with High Lateral Offset Tolerance	LU Wenzhou
	P-39 (183)	Stopband Voltage Detection based Dual-Frequency Wireless Power and Information Transfer System	LIU Zixi
	P-40 (184)	Long distance wireless power transfer system based on double capacitor array	ZHANG Lu
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141-718-252	P-41 (185)	A Design of Secondary-Only Resonant Series-Series WPT System to Maintain Power Stability with Coil Misalignment	CHEN Xiliang
	P-42 (187)	Research on Constant Voltage Control Strategy of Dual Pickup Dynamic Inductive Coupled Power Transfer System Based on Optimal Efficiency	SUN Anran
	P-43 (188)	Analysis and modeling of response characteristics under actual rectifier parameters in the wireless power transfer system	CHEN Qingbin
	P-44 (189)	Metal object detection for electric vehicle wireless charging based on fusion of spectral and texture features	TIAN Yong
	P-45 (193)	Study on the performance of a novel high lateral displacement receiver coil based on cross-winding method	JIANG Jinhai

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腾讯 ID	**Paper**	**Title**	**Speaker**
771-832-658	P-46 (194)	Anti-Misalignment Improvement for SS Compensated IPT System Using Reconfigurable Rectifier	MAI Ruikun
	P-47 (195)	Design and Icing Analysis of a Novel Magnetic Coupling Mechanism for WPT System on High-Voltage Transmission Lines	TAN Linlin
	P-48 (196)	Research on Maximizing the Communication capacity of OFDM-based Simultaneous Wireless Transmission of Power and Information (SWTPI)	LI Ji
	P-49 (197)	Loss analysis of magnetic core and its structure optimization of magnetic coupling structure in wireless power transfer system	CHEN Qingbin
	P-50 (198)	应用于感应式电能传输的交指型自谐振线圈	YI Zixuan
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770-836-782	P-51 (199)	Compact Mixed DC-DC Power Converters For Computing Server	LIU Zhiqiang
	P-52 (200)	A Flexible Foreign Object Detection Method Based on Arrayed Vertical-Decoupled Coils for Wireless Power Transfer Systems	HUANG Xiaosheng
	P-53 (203)	岸电 WPT 系统磁耦合机构设计	DONG Shuai
	P-54 (204)	Research on the efficacy of three-coil magnetic coupling resonant wireless power transmission system	WAN Guangyi
	P-55 (205)	Wireless charging system with high anti misa-lignment and lightweight receiver based on vari-able inductor	LI Zhenjie

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腾讯 ID	**Paper**	**Title**	**Speaker**
972-887-152	P-56 (206)	A Multi-Channel Wireless Charging System with Constant-Voltage Outputs Based on LCC-S Topology and Integrated Magnetic Design	ZHANG Yiming
	P-57 (207)	Comprehensive comparison of rectangular and DD type coupling mechanisms used in mine 30kW near-field transmission	SONG Beibei
	P-58 (208)	Comprehensive Extended State Observer Based-Fault Estimation for Wireless Power Transfer Systems	HUA Xingxing
	P-59 (209)	A Novel Vibration & Magnetic Field Hybrid Energy Harvester	HAN Peng
	P-60 (210)	面向真实海洋环境水下无线充电系统设计与试验	CAI Chunwei
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788-222-609	P-61 (212)	可配置四极板电场耦合无人机无线电能传输系统	CAI Chunwei
	P-62 (213)	Design of Dynamic Wireless Charging System Based on Coupling Coefficient Estimation	LIU Zhitao
	P-63 (214)	基于阵列式发射线圈的无人机无线电能传输系统	CAI Chunwei
	P-64 (217)	A Discrete Frequency Switching Method for LCC-S IPT System Against Coupling Variation	YANG Chen
	P-65 (218)	无线电能传输系统磁能调控	LIAO Zhijuan

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腾讯 ID	**Paper**	**Title**	**Speaker**
494-780-913	P-66 (220)	Research on Dual-phase Receiver With Reduction of Output Fluctuation for EV DWPT System	JIANG Jinhai
	P-67 (222)	Design of underwater wet plug -in connectors system based on the principle of wireless power transfer	LI Dan
	P-68 (224)	Metal Foreign Object Detection Algorithm Based On Multivariate Normal Distribution	SONG Kai
	P-69 (226)	A High-Power Human Motion Energy Harvesting Technology Based on Gyro Rotation	HAN Peng
	P-70 (229)	Research on Efficiency and Waveform Quality of Wireless Power Transfer System under AC Load	ZHANG Lu
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716-185-847	P-71 (230)	Design of Low-Voltage High-Current Wireless Power Transmission System	DAI xin
	P-72 (232)	基于改进有功电流分解方法的高频谐振逆变器并联环流抑制策略的研究	MA Mingze
	P-73 (233)	Protection strategy for WPT standby mode switching based on LCL-S topology parameter estimation	JIANG Jinhai
	P-74 (236)	应用于水下无线电能传输的电场式五板绝缘耦合器	RONG Enguo
	P-75 (237)	基于钳位线圈的抗偏移恒流充电系统	LI Le

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腾讯 ID	**Paper**	**Title**	**Speaker**
947-370-403	P-76 (240)	Comparison of Wireless Power Transfer Systems with Multi-Loads	WU Jie
	P-77 (241)	Optimization of LCC-S Compensated WPT System Considering Capacitors' Availability and Efficiency	LEI Wanjun
	P-78 (242)	Multi-objective Optimization of IPT System Compensation Parameters for Improving Misalignment Tolerance	YANG Junfeng
	P-79 (244)	电动汽车无线充电网络线缆绝缘监测研究	WEN Feng
	P-80 (247)	A Switchable Modular AC~DC Buck-Boost Converter for the Wide Input Range in Energy Harvesting	HUANG Hui
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834-936-030	P-81 (249)	A Self-Powered Synchronous Switch Interface Circuit for Electromagnetic Energy Harvesting Enhancement	LIANG Junrui
	P-82 (250)	Constant current and constant voltage control strategy for electric vehicle radio energy charging system	WANG Jiahui
	P-83 (252)	Parameter Optimization of the Three-coil Wireless Power Transmission System Based on Genetic Algorithm	LIANG Dazhuang
	P-84 (255)	The solution of power frequency electromagnetic field for parallel transmission lines based on superposition algorithm	YANG Xiaofeng
	P-85 (257)	动静态两用无线电能传输系统叠加错位同向串联结构的耦合系数计算与优化	HUANG Shoudao

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腾讯 ID	**Paper**	**Title**	**Speaker**
231-742-518	P-86 (258)	Design of Integrated Coil Structure for Simultaneous Wireless Information and Power Transfer Applied to Electric Power Inspection Robot	XIA Nenghong
	P-87 (260)	Analysis of Environmental Adaptability of Double LC Electric Field Coupled Wireless Power Transmission System	ZHU Chunbo
	P-88 (261)	Reconfiguration and Reuse of Receiver/Repeater in Wireless Power Transmission System	LIU Han
	P-89 (262)	Wireless Electric Vehicle charging technology using hybrid compensation networks	WANG Zhihui
	P-90 (263)	Influence Analysis of Metal Foreign Object on Wireless Power Transmission System	LI Jiacheng
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733-395-131	P-91 (265)	A Novel Switching Topology for Inductive Power Transfer System to Achieve Multiple Constant Voltage Output	LUO Bo
	P-92 (267)	Simulation Analysis of Optimal Design of Basket-type Coil in Wireless Charging System	ZHANG Hua
	P-93 (268)	Improved Electromagnetic Halbach Array for Enhanced Efficiency in Wireless Power Transfer	ZHU Dibin
	P-94 (270)	A Method for Simultaneous Wireless Power and Data Transfer System based on ASK Modulation	WANG Zhihui
	P-95 (271)	Research on Misalignment Tolerance Optimization Method for EV Wireless Power Transfer System	JIA Yahui

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腾讯 ID	**Paper**	**Title**	**Speaker**
452-784-871	P-96 (272)	Transfer distance and misalignment insensitive wireless power transfer system with an integrated Coupler	WU Xueying
	P-97 (273)	参数扰动下超声波无线电能传输系统的鲁棒控制	ZHANG Kehan
	P-98 (274)	A Simultaneous Wireless Power and Data Transfer Technology for Systems with a Strong Coupling	FAN Yuanshuang
	P-99 (275)	Design of a new omnidirectional wireless power transmission coupling mechanism	WANG Bo
	P-100 (276)	Design and Optimization of Double Solenoid Magnetic Coupling Structure for EV-DWPT Systems	ZHOU Yuanzhao