

Annual Conference of the IEEE Industrial Electronics Society (IECON 2021)

Special Session on

“Emerging Near-Field Wireless Power Transfer Technologies”

Organized by

Principal Organizer: Prof. Minfan Fu (fumf@shanghaitech.edu.cn)

Affiliation: ShanghaiTech University

Organizer 1: Prof. Ming Liu (mingliu@sjtu.edu.cn)

Affiliation: Shanghai Jiao Tong University

Organizer 2: Prof. Chengbin Ma (chbma@sjtu.edu.cn)

Affiliation: Shanghai Jiao Tong University

Call for Papers

In recent years, wireless power transfer (WPT) using near-field approach has become increasingly popular, and large number of electronic devices have adopted this promising technique to fully cut off the last cord. Thanks to the near-field characteristics, both the inductive and capacitive power transfer are particularly attractive for the high-efficiency mid-range charging applications. Currently, although tremendous efforts have been done to explore the basic coupling mechanism, compensation networks, and power conversion circuits, there are still lots of unsolved issues and interesting research topics, such as complicated coupling in the near-field environment, system integration and miniature, electromagnetic compatibility and interference, and foreign body detection. Innovations on the near-field WPT are still of paramount important to enable high performance energy transmission.

Topics of interest include, but are not limited to:

- Power converters for WPT (e.g., inverters or rectifiers);
- Coupler design and optimization (e.g., inductive or capacitive coupler);
- Multiple-transmitter and/or multiple-receiver architectures;
- Component-/system-level modelling and analysis;
- Optimization and parameter design;
- Sensing, control, and their implementation;
- Electromagnetic interference issues;
- Dynamic charging and its applications.

Submissions Procedure: All the instructions for paper submission are included in the conference website: <https://attend.ieee.org/iecon-2021/>

Deadlines:

Full paper submission: June 25, 2021
Paper acceptance notification: July 30, 2021
Camera-ready paper submission: Aug. 27, 2021

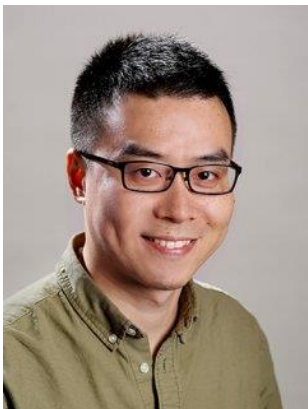
- **Brief CV of SS Organizers (photo, name, email, and short CV** (similar to Transactions paper CV))



Prof. Minfan Fu, fumf@shanghaitech.edu.cn

Professor Minfan Fu (S'13-M'16- SM'18) received the B.S., M.S., and Ph.D. degrees in electrical and computer engineering from University of Michigan-Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, Shanghai, China in 2010, 2013, and 2016, respectively. He is currently an Assistant Professor at the 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 application of wide-bandgap devices. He holds one US patent, three

Chinese patents and has published more than 50 papers in prestigious IEEE journals and conferences. Dr. Fu is an Associate Editor for IEEE IES Industrial Electronics Technology News (ITeN) and serves as the section chair of several conference, such as IECON, IPEMC, VEH. His conf. paper for IECON 2019 won the IES-SYPA competition. He is the tutorial speaker for IPEMC 2020, ISIE 2020, and ISIE 2021.



Prof. Ming Liu, mingliu@sjtu.edu.cn

Ming Liu (S'15-M'17) received the B.S. degree from Si Cuan University and the Ph.D. degree from University of Michigan-Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, China. He is currently working as a postdoctoral research fellow at Department of Electrical Engineering, Princeton University. From 2012 to 2014, he was a research fellow of Shenyang Institute of Automation, Chinese Academy of Sciences. His research interests include the circuit design, analytical analysis, control strategy, and parameters optimization of MHz wireless power transfer (WPT) systems and high frequency power electronics. The research has a strong "interdisciplinary" element, i.e., synergistic integration of power electronics, radio frequency and microwave, control, and optimization, which makes

possible the generation of smarter, more efficient, high power and robust systems. He has conducted extensive research on MHz WPT and has authored or coauthored 23 IEEE technical papers. He services as the reviewer of IEEE Transactions on Power Electronics, IEEE Transactions on Industrial Electronics, IEEE Transactions on Industrial Informatics, IEEE Transactions on Microwave Theory and Techniques, IEEE Journal of Emerging and Selected Topics in Power Electronics, and Session Chair of IEEE PELS Workshop on Emerging Technologies: Wireless Power (2018 WoW).



Prof. Chengbin Ma, chbma@sjtu.edu.cn

Professor Chengbin Ma (M'05–SM'18) received the B.S. degree in industrial automation from East China University of Science and Technology, Shanghai, China, in 1997, and the M.S. and Ph.D. degrees in electrical engineering from The University of Tokyo, Tokyo, Japan, in 2001 and 2004, respectively. From 2004 to 2006, he was an R&D Researcher with the Servo Motor Laboratory, FANUC Limited, Japan. Between 2006 and 2008, he was a Postdoctoral Researcher with the Department of Mechanical and Aeronautical Engineering, University of California, Davis, USA. He joined the University of Michigan–Shanghai Jiao Tong University Joint Institute (UM-SJTU Joint Institute), Shanghai Jiao Tong University, Shanghai, China, in 2008, and currently an Associate 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 is an IEEE senior member. He serves as 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.

Reviewers

Name	Affiliation	Email
Arnold Knott	Technical University of Denmark, Technical University of Denmark	akn@elektro.dtu.dk
Al-Thaddeus Avestruz	Department of Electrical Engineering and Computer Science, University of Michigan	avestruz@umich.edu
Manuele Bertoluzzo	Department of Industrial Engineering, University of Padova	manuele.bertoluzzo@unipd.it
Zion Tse	School of Electrical and Computer Engineering, University of Georgia	ziontse@uga.edu
Fei Lin	Institute of Power Electronics and Electric Traction, Beijing Jiao Tong University	flin@bjtu.edu.cn
Paul Mitcheson	Electrical and Electronic Engineering Department, Imperial College London	paul.mitcheson@imperial.ac.uk
Yong Wang	Department of Electrical Engineering, Shanghai Jiao Tong University	wangyong75@sjtu.edu.cn
Samer Aldhaher	Electrical and Electronic Engineering Department, Imperial College London	s.alldhaher@imperial.ac.uk
Chun T. Rim	Department of Nuclear and Quantum Engineering, KAIST	ctrim@kaist.ac.kr
James Whidborne	School of Engineering, Cranfield University	j.f.whidborne@cranfield.ac.uk
Maysam Ghovanloo	School of Electrical and Computer Engineering, Georgia Institute of Technology	mgh@gatech.edu
Chi-kwan Lee	Department of Electrical and Electronics Engineering, University of Hong Kong	cklee@eee.hku.hk
Juan Rivas Davila	Department of Electrical Engineering, Stanford University	jmrivas@stanford.edu
Xin Dai	Department of Control Theory and Engineering, Chongqing University	toybear@vip.sina.com
Yijie Wang	Department of Electrical	wangyijie@hit.edu.cn

	Engineering, Harbin Institute of Technology	
Aiguo Patrick Hu	Dept of Electrical and Computer Engineering, University of Auckland	a.hu@auckland.ac.nz
Chris Mi	Department of Electrical and Computer Engineering, San Diego State University	cmi@sdsu.edu
Hiroshi FUJIMOTO	Department of Advanced Energy, University of Tokyo	fujimoto@k.u-tokyo.ac.jp
Siqi Li	Department of Electrical Engineering, Kunming University of Science and Technology	lisiqi00@gmail.com