

# Guest Editorial

## Special Section on Advanced WPT Systems With High Efficiency and Misalignment Tolerance Characteristics

**W**IRELESS power transfer (WPT) technology has become a developing trend with the advantages of flexibility and security. However, WPT systems also face some challenges, such as output power fluctuations caused by misalignment or dynamic charging, accurate modeling of high-order systems, system integration, load estimation, and simultaneous transmission of power and data. Therefore, advanced topologies and magnetic coupler design for WPT systems are becoming critical topics. This Special Section on Advanced WPT Systems With High Efficiency and Misalignment Tolerance Characteristics in IEEE TRANSACTIONS ON POWER ELECTRONICS (TPEL) provides an insight into some of the newly emerging challenges and potential solutions to overcome those issues. For this Special Section, 120 submissions were received. Twenty-three are published in the October issue. The rest of the papers will be published in the November and December issues of TPEL.

The Special Section Guest Editors would like to thank the authors for sharing their contributions and the reviewers for their dedicated efforts in providing valuable comments and suggestions on each article. We would also like to thank every Special Section Guest Editor for their hard work, as well as the team of Special Section Guest Associate Editors listed below.

- 1) Mahshid Amirabadi, Northeastern University, Boston, MA, USA

- 2) Grant Covic, University of Auckland, Auckland, New Zealand
- 3) Maeve Duffy, University of Galway, Galway, Ireland
- 4) Patrick Hu, University of Auckland, Auckland, New Zealand
- 5) Ming Liu, Shanghai Jiao Tong University, Shanghai, China
- 6) Fei Lu, Drexel University, Philadelphia, PA, USA
- 7) Paul Mitcheson, Imperial College London, London, U.K.

Finally, the Special Section Guest Editors would also like to thank Prof. Yaow-Ming Chen, Editor-in-Chief, IEEE TRANSACTIONS ON POWER ELECTRONICS, for his great support, and Mary Beth Schwartz, TPEL Administrator, for her highly supportive assistance throughout the process.

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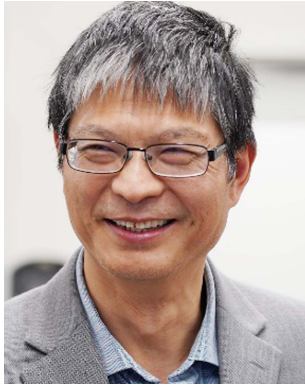
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**Yijie Wang** (Senior Member, IEEE) was born in Heilongjiang Province, China, in 1982. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the Harbin Institute of Technology, Harbin, China, in 2005, 2007, and 2012, respectively.

From 2012 to 2014, he was a Lecturer with the Department of Electrical and Electronics Engineering, Harbin Institute of Technology. From 2014 to 2017, he was an Associate Professor. Since 2017, he has been a Professor. His interests include WPT, dc-dc converters, soft-switching power converters, power factor correction circuits, digital control electronic ballasts, and LED lighting systems.

Dr. Wang is an Associate Editor for IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, IEEE ACCESS, *IET Power Electronics*, and *Journal of Power Electronics*.



**Chunting Chris Mi** (Fellow, IEEE) received the Ph.D. degree in electrical engineering from the University of Toronto, Toronto, ON, Canada, in 2001.

From 2000 to 2001, he was an Electrical Engineer with General Electric. From 2001 to 2015, he was a Faculty Member with the University of Michigan-Dearborn. From 2008 to 2011, he was the CTO of 1Power Solutions. He is currently the CTO of EV Safe Charge, Inc. He is the Director of the U.S. Department of Energy-funded Graduate Automotive Technology Education (GATE) Center for Electric Drive Transportation, San Diego State University (SDSU), San Diego, CA, USA, where he is also a Distinguished Professor of Electrical and Computer Engineering. He has authored or coauthored five books, 204 journal papers, 126 conference papers, and 25 issued and pending patents.

Dr. Mi is a Fellow of Society of Automotive Engineers (SAE). He was the Editor-in-Chief, Area Editor, Guest Editor, and Associate Editor of multiple IEEE Transactions and international journals, as well as the General Chair of more than ten IEEE international conferences. He was the recipient of numerous awards, including the Distinguished Teaching Award and Distinguished Research Award from the University of Michigan-Dearborn, the IEEE Region 4 Outstanding Engineer Award, the IEEE Southeastern Michigan Section Outstanding Professional Award, the SAE Environmental Excellence in Transportation (E2T) Award, three Best Paper Awards from IEEE TRANSACTIONS ON POWER ELECTRONICS, the 2017 ECCE Student Demonstration Award, the Inaugural IEEE Power Electronics Emerging Technology Award in 2019, the Albert W. Johnson Research Lectureship in 2022, and was named Distinguished Professor. This is the highest honor given to an SDSU Faculty Member, and only one award is given each year. From 2006 to 2007, he was the Vice-Chair and from 2008 to 2009, the Chair of the IEEE Southeastern Michigan Section. He was the General Chair of the 5th IEEE Vehicle Power and Propulsion Conference, an Area Editor of IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, and an Associate Editor for IEEE TRANSACTIONS ON POWER ELECTRONICS and IEEE TRANSACTIONS ON INDUSTRY APPLICATIONS. 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. He is a Distinguished Lecturer of the IEEE Vehicular Technology Society. He is the Guest Editor-in-Chief of the Special Issue on WPT of the IEEE JOURNAL OF EMERGING AND SELECTED TOPICS IN POWER ELECTRONICS, and the Guest Editor of the Special Issue on WPT of the IEEE TRANSACTIONS ON POWER ELECTRONICS and the Special Issue on Dynamic Wireless Power Transfer of IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, and a Steering Committee Member of the IEEE Transportation Electrification Conference (ITEC-Asian). He is the 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 the Guest Editor of the Special Issue on Electric and Hybrid Vehicles of the PROCEEDINGS OF THE IEEE.