

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

## Special Session on

## “Reliable and Stable Operation of Wind Energy Generation Systems”

### Organized by

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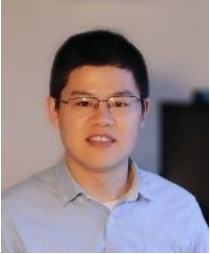
## Call for Papers

In order to reduce carbon dioxide emission and build a green and sustainable energy system, the penetration of wind energy generation integrated into the modern power grid is increasing rapidly. However, the wind energy generation systems are based on the power electronic converters to transfer the wind energy to the power grid, which introduces two main challenges: reliability and stability. The power electronics used in wind generation systems have the highest failure rate and limit the reliable operation of the wind farm. To determine the availability of such systems is challenging and needs theoretical analysis. Further, the power electronic converters impose non-linear multi-time scale characteristics, which causes potential wide-band frequency resonance issues. To smoothly operate the wind farms, both the reliability and stability issues should be considered and worthy of study.

Topics of interest include, but are not limited to:

- Reliability assessment of wind energy system
- Stability analysis of DFIG/PMSG-based wind farm
- Fault ride-through capabilities
- Inertia provision/voltage support
- Transient stability analysis

- Topologies investigation of wind farm integrated into the power grid
- Robustness oriented control under weak grid
- Artificial intelligence for the reliability and stability assessment



Chao Wu (M'19) was born in Hubei Province, China. He received the B.Eng. degree from HeFei University of Technology, Hefei, China and the Ph.D. degree from Zhejiang University, Hangzhou, China, in 2014 and 2019, both in electrical engineering. He is currently a Postdoctoral Researcher in the Department of Energy Technology, Aalborg University, Aalborg, Denmark.

His current research interests include cooperative control of multi-converter systems, particularly the control and operation of doubly fed induction generators for DC connection and the transient stability of power converters.



Meng Huang (S'11–M'13) received the BEng. and MEng. degrees from the Huazhong University of Science and Technology, Wuhan, China, in 2006 and 2008, respectively, and the Ph.D. degree from the Hong Kong Polytechnic University, Hong Kong, in 2013. He is currently an Associate Professor of the School of Electrical Engineering and Automation, Wuhan University, Wuhan, China.

His research interests include nonlinear analysis of power converters and power electronics reliability. He received the Best Paper Award of the IEEE TRANSACTIONS ON POWER ELECTRONICS in 2016, the Excellent Paper Award of the CSEE Journal of Power and Energy Systems in 2020. He serves as a Corresponding Guest Editor for the IEEE JOURNAL ON EMERGING AND SELECTED TOPICS IN CIRCUITS AND SYSTEMS, the Guest Associate Editor of IEEE JOURNAL OF EMERGING AND SELECTED TOPICS OF POWER ELECTRONICS, and the Associate Editor of IEEE Access.



Giampaolo Buticchi (S'10-M'13-SM'17) received the Master degree in Electronic Engineering in 2009 and the Ph.D degree in Information Technologies in 2013 from the University of Parma, Italy. In 2012 he was visiting researcher at The University of Nottingham, UK. Between 2014 and 2017, he was a post-doctoral researcher and Von Humboldt Post-doctoral Fellow at the University of Kiel, Germany.

He is now Associate Professor in Electrical Engineering at The University of Nottingham Ningbo China and the Head of Power Electronics of the Nottingham Electrification Center. His research focuses on power electronics for renewable energy systems, smart transformer fed micro-grids and dc grids for the More Electric Aircraft. He is author/co-author of more than 200 scientific papers and an Associate Editor of the IEEE

Transactions on Industrial Electronics and of the IEEE Transactions on Transportation Electrification.

He is the Chair of the IEEE Industrial Electronics Society Technical Committee on Renewable Energy Systems.



Dao Zhou (S'12-M'15-SM'18) received the B.S. from Beijing Jiaotong University, Beijing, China, in 2007, the M. S. from Zhejiang University, Hangzhou, China, in 2010, and the Ph.D. from Aalborg University, Aalborg, Denmark, in 2014, all in electrical engineering.

Since 2014, he has been with Department of Energy Technology, Aalborg University, where currently he is an Associate Professor. His research interests include modeling, control, and reliability of power electronics in renewable energy applications. He serves as an Associate Editor for IET Renewable Power Generation and IET Power Electronics. He also received a few IEEE prized paper awards.



Frede Blaabjerg (S'86–M'88–SM'97–F'03) was with ABB-Scandia, Randers, Denmark, from 1987 to 1988. From 1988 to 1992, he got the PhD degree in Electrical Engineering at Aalborg University in 1995. He became an Assistant Professor in 1992, an Associate Professor in 1996, and a Full Professor of power electronics and drives in 1998. From 2017 he became a Villum Investigator. He is honoris causa at University Politehnica Timisoara (UPT), Romania and Tallinn Technical University (TTU) in Estonia.

His current research interests include power electronics and its applications such as in wind turbines, PV systems, reliability, harmonics and adjustable speed drives. He has published more than 600 journal papers in the fields of power electronics and its applications. He is the co-author of four monographs and editor of ten books in power electronics and its applications.

He has received 32 IEEE Prize Paper Awards, the IEEE PELS Distinguished Service Award in 2009, the EPE-PEMC Council Award in 2010, the IEEE William E. Newell Power Electronics Award 2014, the Villum Kann Rasmussen Research Award 2014, the Global Energy Prize in 2019 and the 2020 IEEE Edison Medal. He was the Editor-in-Chief of the IEEE TRANSACTIONS ON POWER ELECTRONICS from 2006 to 2012. He has been Distinguished Lecturer for the IEEE Power Electronics Society from 2005 to 2007 and for the IEEE Industry Applications Society from 2010 to 2011 as well as 2017 to 2018. In 2019-2020 he serves a President of IEEE Power Electronics Society. He is Vice-President of the Danish Academy of Technical Sciences too.

He is nominated in 2014-2019 by Thomson Reuters to be between the most 250 cited researchers in Engineering in the world.

**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

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