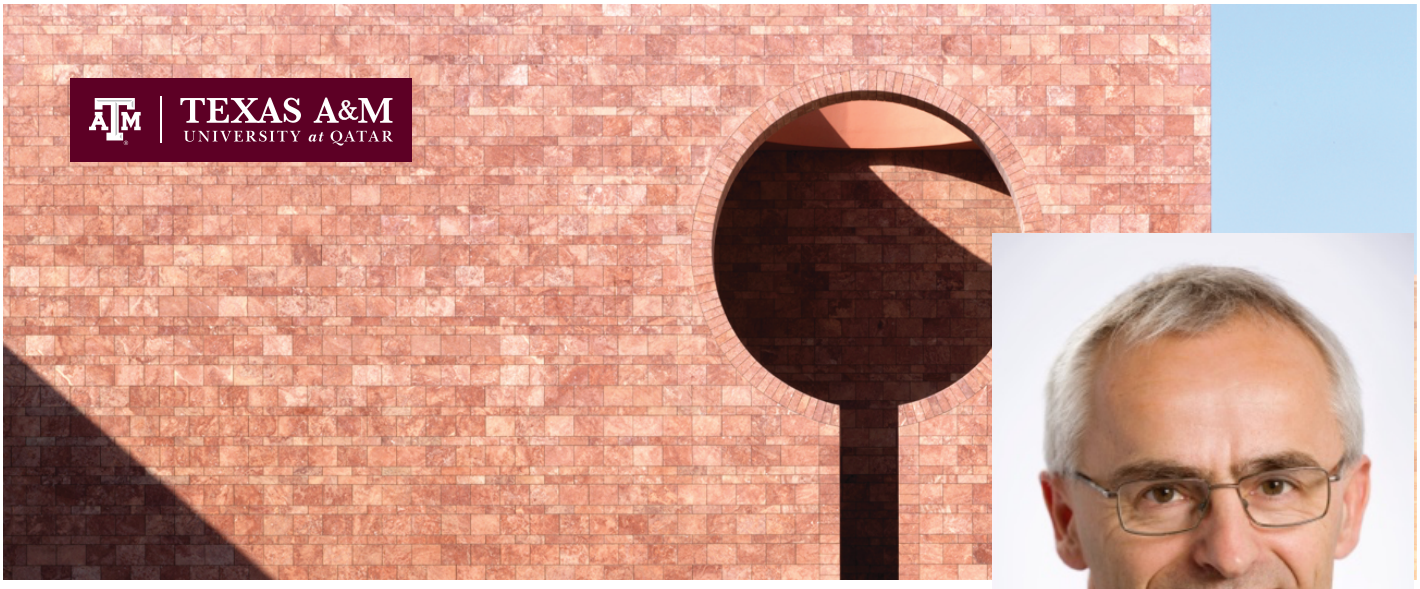

POWER ELECTRONICS AS THE ENABLING TECHNOLOGY FOR A MODERN CARBON NEUTRAL SOCIETY

Frede Blaabjerg
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ABSTRACT:
The global energy system is undergoing a transition in order to be carbon neutral — and at least two consequences.

The energy generation will be renewables and much more energy will be carried by electricity. In order to control electricity we need electrical energy conversion and thereby a key enabling technology called Power Electronics.

The presentation will explain what power electronics is, where it is applied and what are the main future challenges for the technology in the efforts to create a carbon neutral society.

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Frede Blaabjerg earned his PhD in Electrical Engineering at Aalborg University in 1995. He became Assistant Professor in 1992, Associate Professor in 1996, and a Full Professor of power electronics and drives in 1998 at AAU Energy. From 2017 he became a Villum Investigator. He is honoris causa at University Politehnica Timisoara, Romania, and Tallinn Technical University, Estonia. His current 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 10 books in power electronics and its applications. He has received 33 IEEE Prize Paper Awards, the IEEE PELS Distinguished Service Award, the EPE-PEMC Council Award, the IEEE William E. Newell Power Electronics Award, the Villum Kann Rasmussen Research Award, the Global Energy Prize and the IEEE Edison Medal. He was Editor-in-Chief of the *IEEE Transactions on Power Electronics* from 2006 to 2012, and Distinguished Lecturer for IEEE Power Electronics Society (PES) from 2005 to 2007 and for IEEE Industry Applications Society from 2010 to 2011 and 2017 to 2018. In 2019-2020 he was President of IEEE PES. He has been Vice President of the Danish Academy of Technical Sciences. He was nominated by Thomson Reuters in 2014-2020 to be among the 250 most-cited engineering researchers in the world.