中国矿业大学国际合作交流品牌项目支持计划讲座第三期

中国矿业大学 CHINA UNIVERSITY OF MINING AND TECHNOLOGY

Quantum Power Electronics – The Ultimate Path for Optimal Power Conversion?

量子电力电子学
——实现最佳功率转换的终极途径?

讲座专家：Professor Sergio Busquets Monge

时间： 5月15日 10:00-11:30

地点：南湖校区经管学院B117报告厅

Professor Sergio Busquets Monge

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Sergio Busquets-Monge (Senior Member, IEEE) was born in Barcelona, Spain. He received the M.S. degree in electrical engineering and the Ph.D. degree in electronic engineering from the Universitat Politècnica de Catalunya (UPC), Barcelona, in 1999 and 2006, respectively, and the M.S. degree in electrical engineering from Virginia Polytechnic Institute and State University, Blacksburg, VA, USA, in 2001.

From 2001 to 2002, he was with Crown Audio, Inc. In 2005, he was awarded an Assistant Professor position with the Electronic Engineering Department, UPC. He was promoted to Associate Professor in 2007. Since 2023, he is Full Professor. In 2009, he was a Visiting Scholar at the Center for Power Electronics Systems, VPI&SU, VA, USA, and the Institute of Energy Technology, Aalborg University, Denmark. His current research interests include modular and scalable power converter design based on multilevel neutral-point-clamped topologies and electric vehicles. He has published more than 100 journal and conference papers in the fields of power electronics and industrial electronics.

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标题	**Quantum Power Electronics – The Ultimate Path for Optimal Power Conversion?**
时间地点	**经管学院B117报告厅 5月15日 10:30至11:30**
内容简介	Advances in power electronics play a fundamental role in achieving the technological objectives that society pursues in terms of sustainable use of energy. One promising path to search for notable advances in power electronics is to develop power processing techniques where voltage, current and time are all three broken down into the smallest amounts feasible, in what could be referred to as quantum power electronics. Since electrical energy is defined by the product of voltage, current, and time, this approach enables power to be processed through small energy quanta. The potential advantages of this concept at the system level, including standardization, modularity, scalability, flexibility, versatility, efficiency, power density, reliability, and cost reduction will be discussed. A vision of future power electronic systems based on a single standardized and optimized low-voltage and low-current power semiconductor switch will be presented. In addition, switching cell arrays will be introduced as a possible implementation path, offering the potential for high integration by separating switching components from energy storage components.

联系人及承办单位

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