

主題

碳化矽場效電晶體(SiC MOSFET)在電動車馬達驅動器的設計考量

講者



賴日生博士 Jason Lai

IEEE Fellow, Virginia Tech James S. Tucker Professor

Brief CV of Speaker

Jih-Sheng (Jason) Lai (Life Fellow, IEEE) received the M.S. and Ph.D. degrees in electrical engineering from the University of Tennessee, Knoxville, TN, USA, in 1985 and 1989, respectively. In 1989, he joined the Electric Power Research Institute (EPRI) Power Electronics Applications Center (PEAC), where he managed EPRI-sponsored power electronics research projects. In 1993, he then joined the Oak Ridge National Laboratory, Oak Ridge, TN, USA, as a Power Electronics Lead Scientist, where he initiated a high-power electronics program and developed several novel high-power converters, including multilevel converters and soft-switching inverters. In 1996, he joined Virginia Polytechnic Institute, Blacksburg, VA, USA, and State University. He is currently the James S. Tucker Professor with Electrical and Computer Engineering Department and Director of Future Energy Electronics Center. He also holds Visiting Mount-Jade Chair Professorship with National Yang Ming Chiao Tung University, Taiwan, and is a Visiting Professor with Nanyang Technological University, Singapore. He has authored or coauthored more than 500 refereed technical papers, one book chapter, two books, and 30 patents. His main research interests include high-efficiency power electronics conversions for high-power and energy applications. Dr. Lai was the recipient of the Technical Achievement Award in Lockheed Martin Award Night, two journal paper awards, 14 best paper awards from IEEE-sponsored conferences, and 2016 IEEE IAS Gerald Kliman Innovator Award. He led the student teams to win the Top Three Finalist in Google Little Box Challenge in 2016, Grand Prize Award from International Future Energy Challenge (IFEC) in 2011, and Grand Prize Award from Texas Instruments Engibous Analog Design Competition in 2009. He is the Founding Chair of the 2001 IEEE IFEC and 2016 IEEE ACEPT, General Chair of the IEEE COMPEL-2000, IEEE APEC 2005, IEEE SPEC-2018, IEEE IFEEC-2019, and IEEE STPEC-2020 conferences.

主題 車用 SiC 元件的可靠度持續挑戰

講者



Professor Jin Wang
IEEE Fellow, The Ohio State University Professor

Brief CV of Speaker

JIN WANG (Fellow, IEEE) received his B.S. degree from Xi'an Jiaotong University, in 1998, M.S. degree from Wuhan University, in 2001, and Ph.D. degree from Michigan State University, in 2005, all in electrical engineering.

From Sept., 2005 to Aug. 2007, Dr. Wang worked at the Ford Motor Company as a Core Power Electronics Engineer. He joined the Ohio State University in 2007 as an Assistant Professor and was promoted to Associate professor in 2013 and full professor in 2017. Dr. Wang's research interests include wide bandgap power devices and their applications, high-voltage and high-power converter/inverters, integration of renewable energy sources, and electrification of transportation. Dr. Wang has over 200 peer-reviewed journal and conference publications and 9 patents.

Dr. Wang received the IEEE Power Electronics Society Richard M. Bass Young Engineer Award in 2011, the National Science Foundation's CAREER Award in 2011, and the Nagamori Award in 2020. At The Ohio State University, Dr. Wang received the Ralph L. Boyer Award for Excellence in Undergraduate Teaching Innovation in 2012, the Lumley Research Award in 2013 and the Harrison Faculty Award for Excellence in Engineering Education in 2017. Dr. Wang had been an Associate Editor for the IEEE Transactions on Industry Applications from 2008 to 2014. Dr. Wang served as the General Chair and the Steering Committee Chair for the IEEE Future Energy Challenge in 2016 and 2017, respectively. Currently, Dr. Wang serves as the Chair for the IEEE Power Electronics society's Technical Committee on Aerospace Power, the Tutorial Co-chair for the IEEE Applied Power Electronics Conference 2022, an Associate Editor for the IEEE Transactions on Power Electronics and the IEEE Journal of Emerging and Selected Topics in Power Electronics (J-ESTPE). Dr. Wang initiated and served as the General Chair for the 1st IEEE Workshop on Wide Bandgap Power Devices and Applications in 2013.

主題

電動載具用之馬達動力總成創新模組

講者



蔡明祺教授

IEEE Fellow, 成大機械工程學系講座教授

Brief CV of Speaker

MI-CHING TSAI (Fellow, IEEE) received the Ph.D. degree in engineering science from the University of Oxford, Oxford, U.K., in 1990. He is currently a Chair Professor with the Department of Mechanical Engineering, National Cheng Kung University, Taiwan. He authored or coauthored more than 127 journal articles. He holds more than 122 patents. His research interests include robust control, servo control, motor design, and applications of advanced control technologies using DSPs. Dr. Tsai is a Fellow of the Institution of Engineering and Technology, U.K. From 2003 to 2007, he was an Associate Editor of the IEEE/ASME Transactions on Mechatronics. From 2016 to 2017, he was the Deputy Minister of Ministry of Science and Technology, Taiwan.

Dr. Tsai has won 119 patents in the field of motor technology, published 123 journal papers, 158 seminar papers, and 1 book. In 2014, he won the Outstanding Scientific and Technological Contribution Award of the Executive Yuan. In 2015, he served as the chairman of the Metal Industries Research & Development Centre. In 2016, he was appointed Deputy Minister of the Ministry of Science and Technology. In 2019, he won the 63rd Academic Award of the Ministry of Education. In 2021, he is awarded the 26th "Outstanding Achievement Award" of the Phi Tao Fei Honor Society of the Republic of China and the 110-year Teacher Award of the Ministry of Education. In 2022, Dr. Tsai is awarded the 5th Presidential Innovation Award ceremony

主題

High Speed AC Motor Drives for Vehicle Applications

講者



賴炎生教授

IEEE Fellow, 台北科技大學電機工程學系講座教授

Brief CV of Speaker

YEN-SHIN LAI (Fellow, IEEE) received the MS degree from the National Taiwan University of Science and Technology, Taipei, Taiwan, and the Ph.D. degree from the University of Bristol, Bristol, England, UK. both in electronic engineering. In 1987, he joined the Department of Electrical Engineering, National Taipei University of Technology, Taipei, where he served as the Chairperson during 2003–2006 and has been a Full Professor since 1999, a Distinguished Professor since 2006, and a Chair Professor since 2013.

Dr. Lai received several national and international awards, including the John Hopkinson Premium for the session 1995-1996 from the Institute of Electrical Engineers (IEE), Technical Committee Prize Paper Award from the IEEE IAS Industrial Drives Committee for 2002, the Outstanding Paper Award, International Conference of Renewable Energy Research and Applications, Nagasaki, Japan, 2012, and the Best Paper Award, IEEE PEDS, Kitakyushu, Japan, 2013. He received the Outstanding Research Award, Ministry of Science and Technology, Taiwan, 2013 and 2018. He was also awarded the 2018 Prize Paper Award, IEEE Journal of Emerging and Selected Topics in Power Electronics, TECO Award, 2019, and Award for Industry Collaboration, Ministry of Education, Taiwan, 2020.

Dr. Lai served as the Secretary of IEEE IAS Industrial Drives Committee, 2008-2009, Chapter Chair, IEEE IAS Taipei Chapter, 2009-2010. He served as the Vice Chair (2010-2013) and Chair (2014-2015), IEEE IAS Industrial Drives Committee.

He also served as an Associate Editor, IEEE Trans. on Industry Applications, 2008-2011, IEEE Trans. on Industrial Electronics, and IET Electrical Power Applications. He served as the Chair, Electrical Power Engineering Division, Ministry of Science and Technology, Taiwan, and President of Taiwan Power Electronics Association, Taiwan, 2016-2019.

Currently, he is an elected AdCom member (2011-), IEEE Industrial Electronics Society, an Editor, IEEE Journal of Emerging and Selected Topics in Power Electronics, and Co-Editor-in-Chief, IEEE Trans. on Industrial Electronics.

His research interests include control of power converters, inverters, and motor drives.