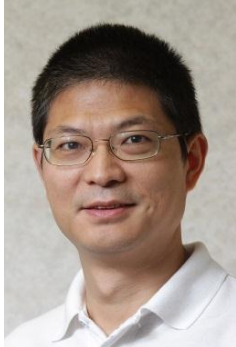


# Hybrid/Electric Vehicles – Today and tomorrow

## Moderator:



Chris Mi

Professor, Electrical and Computer Engineering  
Director, DOE GATE Center for Electric Drive Transportation  
Director, DTE Power Electronics Laboratory  
University of Michigan - Dearborn

**Chris Mi** is a fellow of IEEE, Professor of Electrical and Computer Engineering at the University of Michigan, Dearborn, and the Director of the US DOE funded GATE Center for Electric Drive Transportation. He received the B.S. and M.S. degrees from Northwestern Polytechnical University, Xi'an, China, and the Ph.D. degree from the University of Toronto, Toronto, Canada, all in electrical engineering. Previously he was an Electrical Engineer with General Electric Canada Inc. He was the President and the Chief Technical Officer of 1Power Solutions, Inc. from 2008 to 2011. He is the Co-Founder of Gannon Motors and Controls LLC and Mia Motors, Inc.

His research interests are in electric and hybrid vehicles. He has taught tutorials and seminars on the subject of HEVs/PHEVs for the Society of Automotive Engineers (SAE), the IEEE, workshops sponsored by the National Science Foundation (NSF), and the National Society of Professional Engineers. He has delivered courses to major automotive OEMs and suppliers, including GM, Ford, Chrysler, Honda, Hyundai, Tyco Electronics, A&D Technology, Johnson Controls, Quantum Technology, Delphi, and the European Ph.D School. He has offered tutorials in many countries, including the U.S., China, Korea, Singapore, Italy, France, and Mexico. He has published more than 100 articles and delivered 30 invited talks and keynote speeches. He has also served as a panelist in major IEEE and SAE conferences.

Dr. Mi is the recipient of “Distinguished Teaching Award” and “Distinguished Research Award” of University of Michigan Dearborn. He is a recipient of the 2007 IEEE Region 4 “Outstanding Engineer Award,” “IEEE Southeastern Michigan Section Outstanding Professional Award.” and the “SAE Environmental Excellence in Transportation (E2T) Award.” He was also a recipient of the National Innovation Award and the Government Special Allowance Award from the China Central Government. In December 2007, he became a Member of Eta Kappa Nu, which is the Electrical and Computer Engineering Honor Society, for being “a leader in education and an example of good moral character.”

Dr. Mi was the Chair (2008-2009) and Vice Chair (2006-2007) of the IEEE Southeastern Michigan Section. Dr. Mi was the general Chair of the 5<sup>th</sup> IEEE Vehicle Power and Propulsion Conference held

in Dearborn, Michigan, USA in September 6-11, 2009. Dr. Mi is one of the three Area Editors of the Editor of IEEE Transactions on Vehicular Technology, associate editor of IEEE Transactions on Power Electronics, Associate Editor of IEEE Transactions on Industry Applications, Senior Editor, IEEE Vehicular Technology Magazine, Guest Editor, International Journal of Power Electronics, Editorial Board, International Journal of Electric and Hybrid Vehicles, Editorial Board, IET Electrical Systems in Transportation, and Associate Editor of Journal of Circuits, Systems, and Computers (2007-2009). He served on the review panel for the NSF, the U.S. Department of Energy (2007–2010), the Natural Sciences and Engineering Research Council of Canada (2010), Hong Kong Research Grants Council, French Centre National de la Recherche Scientifique, Agency for Innovation by Science and Technology in Flanders (Belgium), and the Danish Research Council. 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. Dr. Chris Mi is a Distinguished Lecturer (DL) of the IEEE Vehicular Technology Society.

He is also the General Co-Chair of IEEE Workshop on Wireless Power Transfer sponsored by PELS, IAS, IES, VTS, MAG, and PES, Editor of IEEE Journal of Emerging and Selected Topics in Power Electronics - Special Issue on WPT, and steering committee member of the IEEE Transportation Electrification Conference (ITEC- Asian). He is the program chair for the 2014 IEEE International Electric Vehicle Conference (IEVC) in Florence Italy December 17-19, 2014. He is also the chair for the IEEE Future Direction's Transportation Electrification Initiative (TEI) e-Learning Committee.

## Panelists:



**V. Anand Sankaran**  
Executive Technical Leader & Chief Engineer  
Energy Storage & HV EE Sys  
EPE HV, Ford Motor Company

**V. Anand Sankaran** is the Executive Technical Leader & Chief Engineer of Energy Storage & HV Systems in the Electrified Powertrain Engineering Organization. His primary responsibilities include Electrification Technologies, namely, energy storage system, e-drive system, motors, inverters, converters, and high voltage electrical distribution systems.

He received his B.S. in Electrical Engineering from P.S.G. College of Technology, India, followed by M.S. and Ph.D. degrees in Electrical Engineering from University of South Carolina, Columbia. He also received an MBA from University of Michigan, Ann Arbor. He began his career as a Power Electronics Technical Specialist at Ford Research and Innovation Center in 1991. He then moved to product development and led the successful implementation of these new technologies in production programs, namely, "Escape Hybrid - the most fuel efficient SUV on the planet," "Fusion Hybrid - the most fuel efficient mid-size sedan in North America," Lincoln MKZ Hybrid, CMax Hybrid & Energi, Fusion Energi, and Focus Electric. He was named by Automotive News as one of

the top 100 most influential leaders in electrification in 2011. He has held various management positions in the electrification efforts at Ford Motor Company over the past several years.



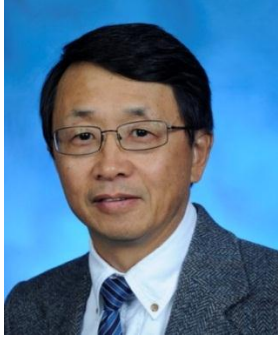
**David A. Fulton**  
Director, Advanced Engineering  
Remy Inc.

**David A. Fulton** received B.S. and M.S. degrees in mechanical engineering from Valparaiso University and Northwestern University, respectively. He joined Delco Remy Div. of GM , as a product engineer in starters. After moving to Remy International, he worked as quality manager and design analysis manager. He is now Remy’s director of Advanced Engineering, responsible for development of starters, alternators, and electric machines for hybrid and electric vehicles. David has 14 patents in the area of electric machines. He is also a licensed professional engineer, and a member of SAE.



**Mohamed Alamgir**  
Research Director  
LG Chem Power Inc.

**Mohamed Alamgir** has been the Research Director at LG Chem Power, Inc. (CPI) since its inception in 2000. Prior to joining LGCPI, he was the Research Manager at High Energy Technologies in Chicago area. He began his career in Li battery technologies at EIC Labs in Boston 30 yrs ago. He got his Diplom Chemiker degree in Merseburg, Germany in Electrochemistry and his PhD at Brandeis University, Massachusetts.



**Bing Cheng**  
Manager, E-Motor Integration & Control  
Electrified Powertrain Systems  
Chrysler Group LLC

From 1992 to 1994, he was with Cleveland Machine Controls, where he was responsible for ac induction motor control development for industrial drives. In 1994, he joined Ford Motor Company— Ecostar Electric Drives, LLC, which was acquired by Ballard Power Systems in 2001, by Siemens VDO in 2007, and by Continental Corporation in 2008. During this time, as a Principal Engineer, he performed research and development work on automotive applications of electric drives and power electronics, and their controls. In 2010, He joined Chrysler. He is currently the manager of the E-Motor Controls and Integration Department in Electrified Powertrain group, where he is responsible for motor control and software development for various forms of electrified powertrains for battery and hybrid electric vehicles. His interests include control systems, electric machines and their controls, and power electronics in electric/hybrid vehicle applications.



**Chun T. Rim**  
Associate Professor  
Dept. of NQE, KAIST, Korea  
Associate Editors of IEEE Trans. on PE, JESTPE  
Guest Editor of IEEE JESTPE Special Issue on Wireless Power Transfer  
General Chairs of 2014 IEEE VTC-WoW, 2015 IEEE WoW

**Chun T. Rim** (M'90–SM'11) was born in Korea in 1963. He received the B.S. degree in electrical engineering from the Kumoh Institute of Technology (KIT), Korea, in 1985, and the M.S. and Ph.D. degrees in electrical engineering from the Korea Advanced Institute of Technology (KAIST), Korea, in 1987 and 1990, respectively.

Since 2007, he has been an Associate Professor of Nuclear and Quantum Engineering, and an adjunct to Aerospace Engineering in Power Electronics at KAIST. He is currently developing various wireless power technologies including inductive power transfer systems for On-Line Electrical Vehicles (OLEV) and leading the Nuclear Power Electronics and Robots Lab (PEARL) at KAIST. From 1990 to 1995, he was a Military Officer at the Ministry of National Defense in Korea. From 1995 to 2003, he was a Senior Researcher at the Agency for Defense Development, Daejeon, and from 1997 to 1999, he was with Astrium in Portsmouth, U.K. From 2003 to 2007, he was a Senior Director at the Presidential Office, Seoul, Korea. He was involved in developing Korea's first

airborne and spaceborne Synthetic Aperture Radars. His research area includes wireless electric vehicles, wireless power systems for robots and bio-medical applications, and general unified modeling of power electronics. He has authored or coauthored 105 technical papers, written five books, and holds more than 115 patents (awarded and pending). He won three prizes awarded by the Korean government, and has been the chairman of wireless power committee of KIPE since 2010 and the chairman of EV charger committee of KIEE since 2011, respectively.

He is now the Associate Editors of IEEE Transactions on Power Electronics and Journal of Emerging and Selected Topics in Power Electronics (JESTPE), the Guest Editor of IEEE JESTPE Special Issue on Wireless Power Transfer, the General Chairs of 2014 IEEE VTC- Workshop on Wireless power (WoW) and 2015 IEEE WoW, respectively.