

CULLEN COLLEGE OF ENGINEERING

ELECTRICAL AND COMPUTER ENGINEERING

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Location

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Faculty



Dr. Kaushik Rajashekara Professor

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Education:

MBA, Indiana Wesleyan University, Indianapolis
Ph.D., Electrical Engineering, Indian Institute of Science, Bangalore, India
M.S., Electrical Engineering, Indian Institute of Science, Bangalore, India
B.S., Electrical Engineering, Indian Institute of Science, Bangalore, India
B.S., Science & Maths, Bangalore University, Bangalore, India

Professional Experience:

Distinguished Professor of Engineering, University of Houston, Sept. 2016-Present
Distinguished Professor of Engineering, University of Texas at Dallas, August 2012- August 2016
Chief Technologist for Electric Power & Control Systems, Rolls-Royce Corporation, May 2006-August 2012
Chief Scientist and Technical Fellow for Advanced Propulsion and Energy Systems, Delphi, 2001-2006.
Senior Project Engineer and Staff project Engineer, Delphi/General Motors Corporation, 1989-2000.
Senior Project Engineer, Viteq Corporation, MD. March 1987-July 1989
Visiting Associate Professor, University of Quebec Trois-Rivieres, Canada. November 1985-March 1987
Senior Scientific Officer/Asst. Professor, Indian Institute of Science, India. June 1977- October 1985

Awards & Honors:

Member of the U.S. National Academy of Engineering (NAE) for contributions to electric power conversion systems in transportation (2012) [Election to the National Academy of Engineering is among the highest professional distinctions accorded to an engineer]
Fellow of the U.S. National Academy of Inventors (NAI), 2015
Elected as Foreign Fellow of the Indian National Academy of Engineering in 2012
IEEE Technical field award: Richard Harold Kaufmann award (2012) for outstanding contributions to the advancement of electrical systems in transportation for higher efficiency and lower emissions
2013 Distinguished Alumnus Award of the Indian Institute of Science, Bangalore, India
IEEE Industry Applications Society Outstanding Achievement Award for outstanding contribution for the application of electricity to industry (2009)
IEEE Industry Applications Society Gerald Kliman award for "contributions to the advancement of power conversion technologies through innovations and their applications to industry." (2006)
2012 SAE Charles M. Manly Memorial Medal for outstanding technical paper.
IEEE Power Electronics Society Vehicle and Transportation Systems Achievement Award for contributions to the advancement of power conversion and propulsion systems for electrification of land and air transportation (2019)

Fellow of IEEE (1999) for contributions to the advancement of power conversion and propulsion systems for Electric, Hybrid, and Fuel Cell vehicle systems

Fellow of SAE International for contributions to the advancement of power conversion and propulsion systems for Electric, Hybrid, and Fuel Cell vehicles, and for Solid Oxide fuel cell based hybrid power generation system (2006)

Inducted into the Delphi Innovation Hall of Fame in 1999 and received the Delphi President's Award

Selected as Qiushi Honorary Chair professor in Zhejiang University, China for the years 2014-17

IEEE Industry Applications Society Distinguished Lecturer for the years 2006 and 2007 and prominent lecturer from 2008-2011 [Propulsion Systems and Power Electronics]

IEEE Vehicular Technology Society Distinguished lecturer

Recognized as short term scholar under UNDP China program and China International Center for Economic and Technical Exchange, 2004, for giving seminars in China on Energy & Environment and Renewable Energy technologies (Tsinghua and Shanghai Jiao Tong U)

Guest professor in Meiji University, Japan; Harbin Institute of Technology, China; and Nanjing University of Aeronautics & Astronautics

Research Interests:

Power electronics and Drive Systems

Subsea electrical Systems

Transportation Electrification: Electric, hybrid, and fuel cell vehicle; Electric and hybrid electric aircraft, VTOL, and flying cars

Power Conversion and intelligent energy management for renewable electric energy delivery for an efficient electric power grid/micro grid integrating highly distributed and scalable alternative power sources

Selected Publications:

S. Jiao ; K.R.Potti; K.Rajashekara; S.Pramanick, „A Novel DROGI-Based Detection Scheme for Power Quality Improvement using Four-leg Converter under Unbalanced Loads, IEEE Transactions on Industry Applications “ January/February 2020, Pp. 815-825.

Anindya Ray ; Kaushik Rajashekara ; Satish Naik ; Sumit Kumar Pramanick, „Coupled Inductor Based Zero Current Switching Hybrid DC Circuit Breaker Topologies,“ IEEE Transactions on Industry Applications , September/October 2019, PP. 5360-5369

V. Lakshminarayanan ; V G Chemudupati ; S.Pramanick ; K. Rajashekara, „Real-time Optimal Energy Management Controller for Electric Vehicle Integration in Workplace Microgrid, „IEEE Transactions on Transportation Electrification, Volume: 5 , Issue: 1 , March 2019, PP. 174-185

Podcast on flying cars: <https://seekingdelphi.com/2018/11/30/podcast-27-future-driving-part-2-fl...>

B. Zhu, K. Rajashekara, and H. Kubo, “Comparison between current-based and flux/torque-based model predictive control methods for open-end winding induction motor drives,” IET Journal on Electric Power Applications, Vol. 11, Issue 8, September 2017, PP. 1397-1406

K. Rajashekara, H. Krishnamoorthy, and S.B. Naik, “Electrification of Subsea Systems: Requirements and Challenges in Power Distribution and Conversion,“ CPSS Transactions on Power Electronics and Applications, vol. 2, no. 4, December 2017, PP. 259-266

K. Rajashekara, Q. Wang, and K. Matsuse, „Flying Cars – Challenges and Propulsion Strategies IEEE Electrification Magazine, March 2016, PP. 46-57

K. Rajashekara and Akshay Rathore, „Power Conversion and Control of Fuel Cell Systems in Transportation and Stationary Power Generation,“ Journal of Electric Power Components and Systems, Taylor & Francis, July 12, 2015

A.Hintz, R. Prasanna, R. and K. Rajashekara, “Novel Modular Multiple-Input Bidirectional DC-DC Power Converter (MIPC) for HEV/FCV Application, IEEE Trans. on Industrial Electronics, Vol. 62, NO. 5, May 2015, PP. 3163-3172

S.Ito, T. Moroi, Y. Kubo, K. Matsuse, and K. Rajashekara, „Independent Control of Two Permanent-Magnet Synchronous Motors Fed by a Four-Leg Inverter,“ IEEE Trans. on Industry Applications, January/February 2105, PP.753-760.

U. R. Prasanna, P. Xuwei, A. Rathore, and K. Rajashekara, „Propulsion System Architecture and Power Conditioning Topologies for Fuel Cell Vehicles,“ IEEE Transactions on Industry Applications, January/February 2015, PP. 640-650

U.R. Prasanna and K. Rajashekara, „Fuel Cell based Hybrid Power Generation Strategies for Microgrid Applications,“ IEEE Industry Applications Society Annual Meeting, Dallas, October 18-21, 2015

Y. Jia and K. Rajashekara, „An Induction Generator based AC/DC Hybrid Electric Power Generation System for More Electric Aircraft,“ IEEE Industry Applications Society Annual Meeting, Dallas, October 18-21, 2015

K. Rajashekara, „Power Conversion Technologies for Automotive and Aircraft Systems,“ IEEE Electrification Magazine, June 2014, PP. 50-60

K. Rajashekara and B. Akin, „Cryogenic Power Conversion Systems: The next step in the evolution of power electronics technology,“ IEEE Electrification Magazine, December 2013, PP. 64-73

K. Rajashekara, “Present Status and Future Trends in Electric Vehicle Propulsion Technologies,“ IEEE journal of Emerging and Selected topics in Power Electronics, vol. 1, no. 1, March 2013, PP. 3-10



CONTACT

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