

PROFILE OF EXPERTS ADDRESSING PEREA 2020

At Government College of Engineering Kannur

27th November 2020, 9 AM IST

Topic: Power Electronics for More Electric and Hybrid Electric Air-Crafts

Dr. Kaushik Rajashekara



Distinguished Professor of Engineering, ECE Department at University of Houston, United States.

Dr. Rajashekara joined University of Houston as a Distinguished Professor in Electrical & Computer Engineering Department in September 2016. Prior to this, he was at the University of Texas at Dallas as a Distinguished Professor of Engineering.

From 2006-2012, he was a Chief Technologist in Rolls-Royce Corporation, Indianapolis working on More Electric/Hybrid Electric Aircraft architectures, VTOL vehicles, and power conversion/control technologies. From 1989-2006, he held various lead technical and managerial positions in Delphi and General Motors, and managed a team that was responsible for developing electric machines, controllers, and power electronics systems for electric, hybrid, and fuel cell vehicles. He was a Chief Scientist for Advanced Propulsion and Drive systems. He has published nearly 200 papers and has over 40 patents. He has given more than 150 invited presentations in international conferences and universities on electric, hybrid, fuel cell vehicles; More Electric and Hybrid Electric Aircrafts, VTOL vehicles and flying cars.

Dr. Rajashekara was elected as a Member of the U.S. National Academy of Engineering (2012), and as a Fellow of the US National Academy of Inventors (2015). He is a recipient of the IEEE Richard Harold Kaufmann award (2013); IEEE IAS Outstanding Achievement Award(2009), IEEE IAS Gerald Kliman award (2006), and IEEE PELS Vehicle and Transportation Systems Achievement Award (2019), for contributions to the advancement of power conversion and propulsion systems for electrification of land and air transportation. He is a Fellow of IEEE (1999) and a Fellow of SAE (2006). He was inducted into the Delphi Innovation Hall of Fame in 1999.

Specialties: Propulsion systems for electric and hybrid vehicles; Power electronics and variable speed motor drives; Renewable Energy based power generation Systems; Electric and Hybrid Aircraft; Flying cars

27th November 2020 10 AM IST

Topic: Wireless V2G-G2V Technologies

Dr. Udaya Kumara Madawala



Udaya K. Madawala graduated with a B.Sc. (Electrical Engineering) (Hons) degree from The University of Moratuwa, Sri Lanka in 1987, and received his PhD (Power Electronics) from The University of Auckland, New Zealand in 1993 as a Commonwealth Doctoral Scholar. At the completion of his PhD, he was employed by Fisher & Paykel Ltd, New Zealand, as a Research and Development Engineer to develop new technologies for motor drives. In 1997 he joined the Department of Electrical and Computer Engineering at The University of Auckland and, at present as a Full Professor, he focuses on a number of power electronics projects related to bi-directional wireless EV charging systems for V2G-G2V applications. Udaya is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Power Electronic Society (PELS), and has over 30 years of both industry and research experience in the fields of power electronics and energy. He has served both the IEEE Power Electronics and Industrial Electronics Societies in numerous roles, relating to editorial, conference, technical committee and chapter activities. Currently, Udaya is an Associate Editor for IEEE Transactions on Power Electronics, and a member of both the Administrative Committee and Membership Development Committee of the IEEE Power Electronics Society. He was the General Chair of the 2nd IEEE Southern Power Electronics Conference (SPEC)- 2016, held in New Zealand, and is also the Chair of SPEC Steering Committee. Udaya, who has over 300 IEEE and IET journal and conference publications, holds a number of patents related to wireless power transfer (WPT) and power converters, and is a consultant to industry.

28th November 2020, 9.00 AM to 10 AM, IST

Topic: Opportunity and challenges in DC grid application fields: An industrial point of view

Dr. Gopal Mondal



Gopal Mondal received his doctor degree in Power electronics from Indian Institute of Science Bangalore, India in 2008. He joined Nottingham university as postdoctoral researcher. In 2010 He joined Areva T&D (Alstom Grid) Stafford, UK as Research Technologist. During this time, he worked very closely with the business unit on new topologies of Modular Multilevel converters for HVDC. In 2012 he joined Siemens corporate Technology and moved to Germany. Currently he is Senior Key Expert in Siemens corporate Technology Erlangen working on.

Session Time	Online Hall 1	Online Hall 2
<u>Day 1</u> 27 th November 2020 9.00 a.m. to 10.00 a.m	Keynote 1 (9 a.m. -10 a.m.), 2 (10.00 a.m. -11 a.m.) & Inauguration (11.00 a.m. -12.00 Noon)	
<u>Day 1</u> 27 th November 2020 1.30 p.m. to 3.15 p.m.	Track ID: 1.1 <u>Power Converters 1</u> PID: 03, 32, 50, 113, 131, 158	Track ID: 2.1 <u>Power System</u> PID: 58, 90, 108, 142, 145, 167
<u>Day 1</u> 27 th November 2020 3.15 p.m. to 5 p.m.	Track ID: 1.2 <u>Power Converters 2</u> PID: 47, 48, 51, 106, 119, 157	Track ID: 2.2 <u>Power Quality</u> PID: 56, 57, 61, 71, 86, 116
<u>Day 2</u> 28 th November 2020 9.00 a.m. to 10.00 a.m.	Keynote 3 (9AM-10AM)	
<u>Day 2</u> 28 th November 2020 10.00 a.m. to 11.45 a.m.	Track ID: 1.3 <u>Renewable Energy</u> PID: 102, 107, 139, 151, 164, 168	Track ID: 2.3 <u>Electronics Engg.</u> PID: 40, 46, 96, 112, 126, 127
<u>Day 2</u> 28 th November 2020 1. p.m. to 2.45 p.m.	Track ID: 1.4 <u>Electrical Drives</u> PID: 33, 92, 128, 130, 132, 154	Track ID: 2.4 <u>IOT & Computation</u> PID: 38, 111, 137, 82, 148, 163
<u>Day 2</u> 28 th November 2020 2.45 p.m. to 4.30 p.m.	Track ID: 1.5 <u>Electric Vehicle</u> PID: 24, 34, 43, 45, 133, 152	
<u>Day 2</u> 28 th November 2020 4.30 p.m. to 5.30 p.m.	Valedictory Session	

DETAILED PAPER PRESENTATION SCHEDULE			
Track ID 1.1: Power Converters-I			
27/11/2020 1.30 PM to 3.15 PM		Venue: Online Hall-1	
Session Co-chair		Dr. Ismayil C	
Session Coordinators		Rasna Rajan, Roshini C and Alvin Kuriakose	
SI No.	PID	Title	Authors
1	03	Power conditioning of standalone Photo-voltaic system with BLDC motor by Negative-Output Luo Converter	Dheeban S S, Muthu Selvan N B and Umashankar Subramaniam.
2	32	A High Voltage Boost DC-DC Converter Using Voltage Doubler and Switched-Capacitor Technique	Arpan Laha.
3	50	A Modified SEPIC Converter Based Solar Water Pumping System Using SRM Drive	Mufsina A.M. and Shahin M.
4	113	Comparison of DC to DC Converters for PV application using PSIM Model	Nayana J, M Nandakumar and Ramesh Kumar P
5	131	Comparison between Voltage and Current Control methods for Power Factor Correction in Modified Dual Output Cuk Converter-Fed Switched Reluctance Motor Drive	Jaisal Jacob, Monish M and Vinod V
6	158	Design And Analysis Of A High Step-Up Dc-Dc Converter Fed Grid Connected Fuel Cell System	Abhiram J S, Sooraj Sureshkumar, Jayaprakash P and Umashankar Subramaniam
Track ID 1.2: Power Converters-II			
27/11/2020 3.15 p.m. to 5 p.m.		Venue: Online Hall-1	
Session Co-chair		Prof. Anjali Anand K.	
Session Coordinators		Renuka Varma P C, Athira Anil P and Mohammed Roshan K	
SI	PID	Title	Authors
2	47	A Single Phase Cascaded Boost Inverter with Improved Current Shape	Sukanya M, Najiya Nesrin A K and Joseph K D.
3	48	Solar Induction Cooker	Anusree K V and Sukesh A
4	51	Design and Analysis of PV Integrated Multilevel Inverter for Grid Application	Aswini Narayanan, Prof. Beena M Varghese, Prof. Smitha Poullose and Dr. Bos Mathew Jos.
5	106	Non-Isolated DCM/DCD Operated Step-Up Inverter Derived Novel CCM Operated Five Switch Step-Up/Down Inverter.	Salma Abdul Aziz Kormath, Muhammedali Shafeeque K. and Ajmal K.T.
6	119	Control of a Multilevel Inverter based Grid Integration of Solar PV with BESS	Sangeetha V, Nirmal Mukundan C M, Jayaprakash P and Asokan O V
7	157	Modified H-bridge Multilevel Inverter for Grid Integration with Voltage Balancing Circuit	Vineeth K, Nirmal Mukundan C M, Jayaprakash P and Umashankar Subramaniam
Track ID 1.3: Renewable Energy			
28/11/2020 10 a.m to 11.45 a.m		Venue: Online Hall-1	
Session Co-chair		Dr. Jayaprakash P.	
Session Coordinators		Drishya N, Amal Mohan and Sarannya C	
SI N	PID	Title	Authors
1	102	Experimental and Numerical Analysis of the Impact of Placement of PV Panels on the Performance of a Rooftop Plant	Ajay Abraham, Sachu Sebastian, Pinkymol Kp, Ajith Gopi and Deepu Koshy
2	107	Solar Powered Drone Interceptor & Jammer for Smart Cities	Ahmed Dirir, Sirageldin Ahmed, Saifudeen A Kabeer and Rashad Ramzan
3	139	Durer's Square Based Photovoltaic Configuration to Mitigate Partial Shading Losses	Vishnu P Madhanmohan, M Nandakumar and Abdul Saleem
4	151	Power Generation using Rooftop Ventilator and Possible Enhancement's	Sunil K M, Radhika V K, Samrain Fathima C K, Kavya K and Sujith T
5	164	Feasibility Study for Energy Storage Device on PV-Plant with Low Capacity Utilization	Afsher P A and Manoj Kumar M V
6	168	Energy Harvesting Technology Using Dye Sensitized Solar Cell for Low Power Devices	Priya Poullose and Sreejaya P.

Track ID 1.4: Electric Drives 28/11/2020 1.00 PM to 2.45 PM Venue: Online Hall-1			
Session Co-chair		Dr. M. Rajesh	
Session Coordinators		Sidhartha Dinesh, Amritha Menon and Aiswarya Sunil	
SI No.	PID	Title	Authors
1	33	Investigation on Space Vector Based Hybrid PWM Algorithm for Induction Motor Control	Ann Susan Luke, Indrani Majumdar, Samya Kumar Gupta, Joseph Peter and Sivaprasad Athikkal.
2	92	Commutation Torque Ripple Comparison in Cuk Converter Fed Brushless DC Motor Drives with Mode Switching Selection Circuit	Nithin K S, Vivek R S, Krishna M and Anurenjan Purushothaman
3	128	Twelve Sector Based Direct Power Control of Induction Motor Drives	Athira Poovathody and Rijil Ramchand
4	130	Thermal analysis of squirrel cage Induction Motor	Anoop G L, Mini V P, Harikumar R and Mayadevi N
5	132	Direct Torque Control Based On Inductance Profile For Four phase Switched Reluctance Motor	Nandu Krishnan A M, Monish M and Vivek R S
6	154	Reduced Sensor PMLDC Motor Drive with Power Factor Correction and Speed Control	Sachin Singh, Shailendra Kumar, Ujjwal Kumar Kalla and Sanjeev Singh
Track ID 1.5: Electric Vehicle 28/11/2020 2.45 p.m to 4.30 p.m Venue: Online Hall-1			
Session Co-chair		Dr. Sreekumar C	
Session Coordinators		Daliya P, Haritha T K and Muhammed Nishan T	
SI No.	PID	Title	Authors
1	24	Three-Way DC/DC Converter with Tri-Battery Energy Storage for Hybrid Electric Vehicle System	Sachin Narayanan and Rajesh M.
2	34	Grid Adaptive Vehicle Charging Scheme	Aswin S Ravi and Jayakumar P.
3	43	Current Programmed Controlled Dc-Dc Converter for Emulating The Road Load In Six Phase Induction Motor Drive In Electric Vehicle	Swedha S Babu and Sukesh A.
4	45	Switched Dual Input Buckboost Inverter for Continuous Power Operation with Single Stage Conversion	Najiya Nesrin A K, Sukanya M and Joseph K D.
5	133	State of Charge estimation in Lithium-Ion Battery using model based method in conjunction with EKF and UKF	Chandan Pulavarthi, R Kalpana and P. Parthiban
6	152	Energy Demand Modeling and Behavioral Analysis of Electric Vehicle for Grid Management Studies	Polly Thomas
Track ID 2.1: Power System 27/11/2020 1.30 PM to 3.15 PM Venue: Online Hall-2			
Session Co-chair		Dr. Manoj Kumar M V	
Session Coordinators		Veena V, Anisha A K and Athul KP	
SI No.	PID	Title	Authors
1	58	Optimal Microgrid Battery Scheduling using Simulated Annealing	Aiswariya L, Imthias Ahamed and Sheik Mohammed
2	90	A New Three Port Converter with Power Flow Management Control for Solar PV fed Telecom Load	Sheeja V and Kalpana R
3	108	Transmission Lines Fault Detection Using Empirical Mode Decomposition in a Grid Connected Power System	Binitha Joseph Mampilly and Sheeba V S
4	142	Optimal design of Power System Stabilizer for damping low frequency oscillations in a Multi-Machine Power System	Shafila Jasmine H and Laly M J
5	145	Realizing Autonomous and Intelligent Smart Grid Using Multi-Agent Based Control System	Sujo Vasu, Rameshkumar P and Jasmin E A
6	167	Load Management and Smart Monitoring For Rooftop PV in Academic Building	Aneesh R, Sivraj P and Sasi K Kottayil

Track ID 2.2: Power Quality			
27/11/2020 3.15 p.m. to 5 p.m.		Venue: Online Hall-2	
Session Co-chair		Dr. Shahin M.	
Session Coordinators		Annet Sheen P M, Sathyajith V P and Shafna M P	
SI No.	PID	Title	Authors
1	56	Single Stage Grid Tied Solar PV System with a High Gain Bi-directional Converter for Battery Management	Naseeha Fareed and Dr. Manoj Kumar M.V.
2	57	Comparison of Control Algorithms of DSTATCOM For Power Quality Improvement	Neha Suresh M P and Manoj Kumar M V
3	61	Solar Photovoltaic System with Power Quality Improvement	Heera P H and Mini V.
4	71	Optimum Torque - Zero d- axis Current Control of Direct Driven PMSG Based Wind Energy Conversion System	Henna Unais, Dr. P Jayaprakash and Teena George
5	86	Comparative Analysis of SRF, PI and AWPI Controllers for Hybrid Standalone Microgrid	Ananya Vasanth V V and Sheeja V
6	116	Comparative Study on Adaptive Control Algorithms for Grid-tie Inverter	Chaithanya S and Anjali Anand K A
Track ID 2.3: Electronics Engineering			
28/11/2020 10 a.m to 11.45 a.m		Venue: Online Hall-2	
Session Co-chair		Dr. Sajesh Kumar U	
Session Coordinators		Archana R Suresh, Aswathi M E and Drishya Ramesh K	
SI No.	PID	Title	Authors
1	40	Unmanned Aerial Vehicle Surveillance using Multiple Inter-symbol Obfuscation scheme	Arjun Krishna K and Paul Thomas.
2	46	Communication Assisted Synchronisation Control in Three-Phase PV integrated Voltage Source Converters	Nirmal S, Sivarajan K.N and Dr. Jasmin E A.
3	96	Implementation of Carry Save Adder Using Novel Eighteen Transistor Hybrid Full Adder	Saina Ancy Simon and Prof. Sujithamol S
4	112	Location Tracking for Blind Swimmers	Aparna Padman, Jisha D. Saiju, Prabitha Prasad, Sheethu Gopal and Hema P.P.
5	126	VLSI Implementation of Image Encryption and Decryption Using Reversible Logic Gates	Geethu Chandran, Dr.Helenmary M C and Anjana G
6	127	Carry select adder based on dual rail error detection and easy testability	Heera Narayanan, Dr.Helen Mary M C and Anjana G
Track ID 2.4: IOT and Computation			
28/11/2020 1.00 PM to 2.45 PM		Venue: Online Hall-2	
Session Co-chair		Dr. Rafeeque P C	
Session Coordinators		Anagha P and Jaisna V P	
SI No.	PID	Title	Authors
1	38	Robust Video Watermarking Resilient to Inadvertent Attacks	Bushra Abdulla Nt and K. A. Navas.
2	111	Forced-Sleep SVR 9T SRAM for High Frequency Applications	Megha Aby Thomas, Anjana K and Ancy Joy
3	137	IOT Based Load Sensing Seats Controlling Lights and Fans	Ashish L Parmar, Aishani Mukerji and Semanti Chakraborty
4	82	Multi Objective Parameter Optimization of End Milling Operation on AA5083	Shijin M and Dr. Abdul Nazar K P
5	148	Back Propagated Neural Network Model for TTT-TIC Welding Process	Sreekumar I H and Jose M J
6	163	Improved RSSI based Angle Localization using Rotational Object	Debajyoti Biswas