

Registration Fee

Professional Member : INR 15,000 + 2700 GST 18% = 17,700/-

Faculty Member : INR 10,000 + 1800 GST 18% = 11,800/-

Non-Members : INR 20,000 + 3600 GST 18% = 23,600/-

Registration link : <https://goo.gl/forms/EeqoPPrNqVnSe3p2>

Online Payment link:

<https://www.payumoney.com/events/#/buyTickets/ADVANCE-POWERTRAINS>

Office Address:

RSVP: S. Ilangoan | Mobile: +91 88704 71511
Email : ilangois@saeindia.org

SAEINDIA

No 1/17 Ceebros Arcade
Kasturba Nagar | Adyar, Chennai - 20
Ph: 044 - 24411904, 42152280

RSVP: Sagar V. Murugkar | Mobile: +91 99222 77224
Email : sagarvm@saeindia.org

SAEINDIA Western Section

C-407, Wisteria Fortune, Marunji, Bhumkar Das Gugre Road,
Bhumkar Nagar, Opposite Silver Spoon Hotel, Wakad,
Pimpri Chinchwad, Pune - 411057.

www.saeindia.org

Date: 06th & 07th January 2020, Ramee Grand Hotel & Spa, Apte Road, Pune

Venue Address:

Ramee Grand Hotel & Spa, Apte Road, Pune
CST No. 1221/C, Plot No. 587,
Apte Rd, Shivajinagar, Pune,
Maharashtra 411004

Date: 09th & 10th January 2020, Red Fox (Lemon Tree), Delhi Airport

Venue Address:

The International Centre for Automotive Technology (ICAT), Gurugram
Plot - 26, Sector - 3, IMT Manesar,
Gurugram, Haryana - 122050



SAEINDIA
Society of Automotive Engineers INDIA

ADVANCE POWERTRAINS FOR MOBILITY & POWER GENERATION APPLICATIONS

Speakers



Dr. - Ing. Ingo Steinberg,
Group vice president of transmission
systems business unit, FEV Group
Holding GmbH



Dr. Ajay Prasad
Chair Mechanical Eng,
Department and Director Fuel Cell
Research Centre,
University of Delaware, USA



Mr. Kumar Prasad Telikepalli
Head of e-Mobility at Eaton India
Innovation Center responsible

(Pune Event)



Dr. Tapan Sahoo
Executive Vice President (EVP)
Maruti Suzuki India Limited

(Delhi Event)
Yet to confirm



Dr. Sushil S. Ramdasi
Deputy Director, ARAI

Date & Venue

06th & 07th January 2020, (Monday & Tuesday)

Ramee Grand Hotel & Spa, Apte Road, Pune

CST No. 1221/C, Plot No. 587, Apte Rd, Shivajinagar, Pune, Maharashtra 411004

09th & 10th January 2020, (Thursday & Friday)

The International Centre for Automotive Technology (ICAT),

Plot - 26, Sector - 3, IMT Manesar, Gurugram, Haryana - 122050



COMPREHENSIVE CONTENTS OF THE PROGRAMME

Development of EV / HEV, Electric Drives and Controls with Case Studies

- *Global Road map and latest facts for immediate implementation of electrification technology to meet EURO –VI and beyond emission norms*
- *Present well to wheel analysis for EV's / FCV's and conventional power trains from overall efficiency and CO2 perspective considering present available power generation technology for charging the grids*
- *Probable Classification of electrification technology based on vehicle segment, emission / fossil fuel economy expectations segment wise and technology development and operational cost affordability*
- *Required perspective and thought process for Development of strong hybrids / Range extenders / Series hybrids as an attractive option to act as a bridge between full EV's and present conventional power trains*
- *Intermediate experimental validation techniques of supervisory control strategies developed for Fuel Economy improvement in case of HEV before making prototype development investments with a case study*
- *Options available and focus thrust areas to make cost effective EV / HEV and FCV from Indian perspectives*
- *Impact of implementation of new power train technology on overall Eco system which includes areas viz. skill sets required, availability and affordability of tools / equipment's, possibility of indigenisation of electrification components suitable for mass production, serviceability and after sales support systems*
- *Design and development process of EV / Strong HEV and FCV during front loading process*
Fundamentals, design and development of Induction motors, PMSM, BLDC and SRM for EV / HEV and FCV applications: Practical and Experimental Approach
- *Brief overview of building an Induction Motor Power Plant Model based on Clarke transformation and state variable equation / finite difference method approach*
- *Brief overview of building Direct Torque Control using SVM technique and Field Orientation*
- *Control (DFOC & IFOC) using park transformation along with comparison in performance - A Practical case study of implementation of DTC and FOC for Induction Motor Control*
- *Convergence of power electronics requirements from best efficiency and performance requirements of electric drives used in EV / HEV and FCV*
- *Improvisation potential of electric drives from efficiency and drivability through use of blends of motor control algorithms and multilevel inverters*
- *Introduction of Electric tractor and Hydrostatic Transmission technology for tractor and off highway applications*
- *BMS and Energy storage systems*

Speakers:

Mr. Kumar Prasad Telikepalli , Head of e-Mobility, Eaton India Innovation Center

Mr. Kumar Prasad Telikepalli is a globally recognized Engineering leader in Automotive Electronics & e-Mobility with notable contributions to India's National Hybrid Propulsion Program, Hybrid Standard committees & one of the few subject matter experts with experience of leading teams in development of electric and hybrid vehicles for application ranging from passenger cars to commercial vehicles. Prasad has a Master's degree in Power Electronics and Power Systems from IIT Bombay. His experience includes stints in different leadership roles mainly with automotive electronics & electrification at Eaton Corporation, Mahindra & Tata Motors. He is currently serving as the Head of e-Mobility at Eaton India Innovation Center responsible for product development and program management functions for Global product & pursuits. Prior to this role he was heading the Electronics CoE & EV Applications as General Manager at Mahindra. In his leadership role at Mahindra he was responsible for delivering complete Electronics portfolio including Advanced Energy Storage systems, ADAS, Connectivity, Body Electronics, Functional safety, Electronics reliability, In vehicle networking, Infotainment Centers of excellence & EV Systems readiness. He was also nominated as the Chairman of SIAM Connectivity & Telematics Group – 2017 -18, was a key member of the Frontier Technology Group – SIAM 2013-18. Prasad was one of the two recipients in the world & first recipient from India to be awarded the prestigious "Young Industry Leader Award in 2012" by SAE INTERNATIONAL in recognition of his contributions to automotive industry.

Dr. Tapan Sahoo, Executive Vice President (Engineering), Maruti Suzuki India Limited

Presently, working as Vice President (Engineering) responsible for product planning, design, cost and program management at Maruti Suzuki India Ltd., Delhi.

Dr. Sushil S. Ramdasi, Deputy Director, Powertrain Engineering, Automotive Association of India (ARAI).

Presently, acting as vertical lead for engine & transmission design centre at PTE, ARAI and responsible for execution of various projects in design & development of engines, transmissions for meeting various emission norms, strength, durability and structural dynamics requirements. Also involved in development of Hybrid Electric Vehicle architecture / supervisory controller for HEV operations / AMT controller development from concept / Fuel Cell Vehicle Architectures and Controls. Have developed engine design software using MFC and Open GL platforms.

He completed Masters' Degree in Mechanical Engineering in Design discipline, Master of Management Science in Management Information Systems from Pune University. He is Ph.D. in controller development for electric drives for Hybrid Electric & Fuel Cell Vehicles from VIT University and Post Doctorate Research Collaborator at University of Delaware, USA in the field of Fuel Cell Technology. He has 2 patents on LPG fuel metering system and Gas air mixer for stationary application engines. He is an invited reviewer for IEEE, Elsevier and IMECHE (UK) peer review technical journal papers. Best Technical Paper Award on High Power Density D.I. Diesel Engine Design & Development for meeting Euro IV norms at SIAT, 2011, India. Outstanding Technical Paper and Presentation award for paper on Supervisory Controller Development for Full Parallel HEV and an Intermediate Experimental Validation at FISITA, 2018, India

International Speakers :

Dr. - Ing. Ingo Steinberg, Vice President Transmission Systems, FEV Europe GmbH

Project - Global transmission systems.

Dr. Ingo Steinberg is a Vice president at FEV Group Holding of GmbH, Germany.

Key activity - Expanding global transmission business in combination with profitable projects, building up new divisions to support transmission projects worldwide, Acquisition of new transmission projects worldwide, Maintain high employee motivation and customer satisfaction, Handling of complex and parallel projects within an organization.

Responsibility: Global transmission systems business representative

Competences: Automatic transmission function development (strategy, clutch control), Complete automatic transmission calibration and testing (Shift-quality & Shift-strategies, Cycles etc.), Calibration tool development. Automation of tests (Chassis dyno & testbench), Calibration tools expert: dSpace CtrlDesk & Caldesk, INCA, CANape. CANalyzer, VAT2000, Helios, ATI, TopExpert. Simulation tool expert: MATLAB, Simulink, Stateflow, GT-drive, TopExpert. Software function development Hybrid concepts (battery, e-motor, transmission, driveability), Software function development transmission concepts (DCT, AT, AMT, CVT), Transmission system expert for safety FTA's ISO26262, Complex measurement system setup, Model based calibration tool development, Complex and multiple project management, Risk management and escalation management, Customer contact, Team management, Department manager, Business management, Business development worldwide.

Dr. Ingo has PhD of mechanical engineering. His experience includes Various positions at GETRAG FORD Transmissions GmbH: Manager of 6DCT470 dual clutch transmission, Chief engineer of central engineering, Platform director dual clutch transmissions, 6DCT450/ 6DCT451/ 6DCT451-Hybrid and 6DCT470, Various positions at VOLKSWAGEN AG: Technical specialist of wet dual clutch development, Supervisor of dual clutch transmission testing team and Development engineer for manual transmissions and for automated manual transmissions, FORD Werke AG.

Mr. Ajay K. Prasad, Professor and Chair, Department of Mechanical Engineering, University of Delaware, Newark, DE

Dr. Prasad is the Engineering Alumni Distinguished Professor and Department Chair of Mechanical Engineering at the University of Delaware. He received his PhD in Mechanical Engineering from Stanford University in 1989 in the area of experimental fluid mechanics and heat transfer. Subsequently, he conducted postdoctoral research at the University of Illinois at Urbana-Champaign before joining the University of Delaware in 1992. Dr. Prasad's research interests lie in the area of clean energy including fuel cells, Li-ion batteries, wind and ocean current energy, and vehicle-to-grid technology. He is also interested in energy-efficient, solar-powered buildings. Professor Prasad also directs the University of Delaware Fuel Cell Bus Program whose goal is to develop and demonstrate fuel cell powered transit vehicles and hydrogen refueling stations in the state of Delaware. He has published over 200 journals articles, patents, and conference papers.

FUEL CELL TECHNOLOGY FOR MOBILITY AND POWER GENERATION APPLICATIONS WITH CASE STUDIES

- **Introduction of Fuel Cell Technology : PEM / SOFC / Alkaline / Alcohol based Fuel Cells**
- **Detail focus on design and development of PEM for mobility and SOFC for power generation applications**
- **Design selection of balance of plant for PEM and SOFC**
- **Development of low cost and high energy density fuel cell stacks**
- **Design through optimisation process for PEM fuel cells**
- **Innovation on Fuel Cell development : New Energy Materials for FC applications : Characterisation techniques**
- **Water and thermal management innovative solutions for FC performance improvement**
- **Use of electrochemical Impedance Spectroscopy and Chronoamperometry for improving transient behaviour of FC**
- **A practical case study : Development of Range Extender PEM Based City Bus by University of Delaware, USA**
- **SOFC as a potential and promising long term option as a range extender for EV**
- **SOFC a multi fuel based power generator and Combined Heat Power Plant as an alternate to conventional fuel based power plants**

ADVANCE TRANSMISSION TECHNOLOGY

- **Potential of AMT / DCT / CVT from Indian Application point of view**
- **Technological Brief of AMT / DCT from design perspectives**
- **Hydrostatic Transmission for Tractor and off highway application**

WHO SHOULD ATTEND?

- **Policy and Decision Makers in the field of automotive, off highway, tractor and power generation sector, Think tank and Govt extended arm executives**
- **Corporate leaders / Strategic planners of an automotive, off highway, tractor and power generation sector**
- **Technology development groups, Research organisations, post graduate and doctorate professors**
- **Core designers of architecture of EV, HEV, FCV. Controller developers for electric drives and supervisory control for EV, HEV and FCV**
- **Start-up company executives working in the area of EV and Fuel Cell Technology**

PROGRAMME

DAY 1

8.00 am : Registration

9.00 am : Inauguration and Key Note Address

10.00 am : Global Road Map, latest facts and trends in electrification, well to wheel analysis, Potential segments for electrification and technologies associated with it, Dev of strong Hybrid as an intermediate option for meeting Euro – VI and beyond till full electrification, A different thought process and approach for implementation of strong hybrids, range extenders and series hybrids as an immediate need

12.00 pm : Tea Break

12. 15 : Design and development process of EV / Strong HEV and FCV during front loading process Fundamentals, design and development of Induction motors, PMSM & BLDC for EV / HEV and FCV applications: Practical and Experimental Approach

14. 15 : Lunch

15.00 : New information to be added in this time slot: Advances in Battery Technology, types of batteries, BMS, energy storage devices, power electronics convergence and specifications identification, exploring use of multilevel inverters for powering electrical devices

16.30: Tea Break

16.45 : Different perspective and thought process for Development of strong hybrids / Range extenders / Series hybrids, Intermediate experimental validation techniques of supervisory control strategies developed for Fuel Economy improvement , Options available and focus thrust areas to make cost effective EV / HEV and FCV from Indian perspectives, Design and development process of EV / Strong HEV and FCV during front loading process, Brief overview of building an Induction Motor Power Plant Model based on Clarke transformation and state variable equation / finite difference method approach, Brief overview of building Direct Torque Control using SVM technique and Field Orientation Control (DFOC & IFOC) using park transformation along with comparison in performance - A Practical case study of implementation of DTC and FOC for Induction Motor Control

18.45 End of Session

PROGRAMME

DAY 2

9.00 : Introduction of Fuel Cell Technology : PEM / SOFC / Alkaline / Alcohol based Fuel Cells, Introduction of Fuel Cell Technology : PEM / SOFC / Alkaline / Alcohol based Fuel Cells, Detail focus on design and development of PEM for mobility and SOFC for power generation applications, Design selection of balance of plant for PEM and SOFC

11.00 : Tea Break

11.15 :Detail focus on design and development of PEM for mobility and SOFC for power generation applications, Design selection of balance of plant for PEM and SOFC, Design through optimisation process for PEM fuel cells, A practical case study : Development of Range Extender PEM Based City Bus by University of Delaware, USA.

13.15: Lunch Break

14.00 : Innovation on Fuel Cell development : New Energy Materials for FC applications : Characterisation techniques, Water and thermal management innovative solutions for FC performance improvement.

16.00 : Tea Break

16.15 Use of electrochemical Impedance Spectroscopy and Chronoamperometry for improving transient behaviour of FC, SOFC as a potential and promising long term option as a range extender for EV, SOFC a multi fuel based power generator and Combined Heat Power Plant as an alternate to conventional fuel based power plants

17.15 : Electric drive technology for tractors and off highway applications, Potential of AMT / DCT / CVT from Indian Application point of view, Technological Brief of AMT / DCT from design perspectives, Hydrostatic Transmission for Tractor and off highway application

19.15 End of Session