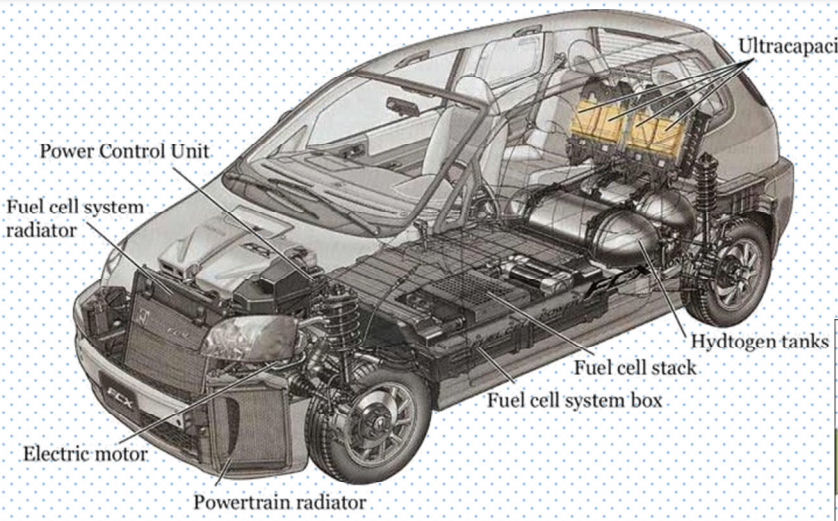

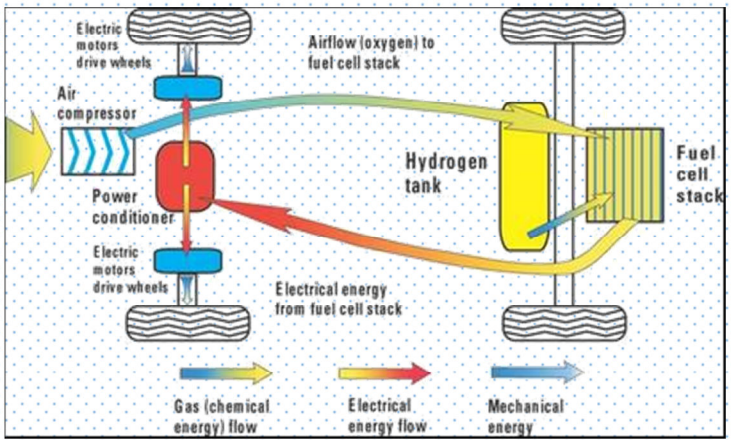

Complimentary 1 year SAEINDIA membership for non-member participants

Special discount on Group Booking (minimum 5 attendees for same session 10% Discount)

TOPTECH

FUEL CELL TECHNOLOGY

POWER SOURCE FOR AUTOMOBILE APPLICATION

Two Days Workshops by SAEISS Experts

Trainer: **Dr. P. Karthikeyan**

Professor at PSG College of Technology, Coimbatore

Venue:

SAEINDIA Southern Section

Block-1, Modules 29 & 30, SIDCO Electronic Complex

Thiru-Vi-Ka Industrial Estate, Guindy, Chennai-600032

Phone: 044-42188651-52 Mobile: +91-90430 01718

E-mail Id: toptech@saeiss.org Website: www.saeiss.org

SAEINDIA SOUTHERN SECTION

Course Content

Workshop Content

Day 1

Session 1:

- Introduction
- Working of Fuel Cell
- Performance Characteristics
- Fuel Cell types
- Advantages and limitations
- Fuel cell for automobile applications: PEMFC stack – design and development

Session 2:

- Scaling and stacking up studies on PEMFC
- Issues on PEM fuel cell
  - ✓ Dehydration of membrane
  - ✓ Water Management
  - ✓ Thermal Management
  - ✓ Reliability of the systems

Session 3:

- Performance Enhancement Studies on PEMFC
  - ✓ Impact of Flow channel design and geometry
  - ✓ Passive Method for effective removal of water in PEMFC

Day 2

Session 4:

- Modelling Studies on PEMFC
- Various design and Operating parameters for performance enhancement

Session 5:

- Nano-materials for PEMFC
  - ✓ Platinum Alloy catalysts for fuel cell application
  - ✓ Non-Noble metal catalysts for fuel cell application

Session 6:

- Research and development - Hybrid fuel cell system for automobile application

About the Course

Fuel cell, an electro chemical device which produces an electrical energy from the chemical energy through electrochemical reactions, has attracted increasing attention as the most promising energy converters, especially for automobile applications, because of their high-energy density at low operating temperatures, quick start-up, and zero emissions. Hence, this makes it the ideal choice for use in several applications such as transportation, stationary and portable products. In spite of its excellent benefits, commercialization of fuel cells is very challenging because of the high cost of its materials and low reliability. Currently, active research in this area is underway in several areas such as, reducing the platinum catalyst loading, seeking inexpensive materials and construction methods, and improving cell performance and durability.

Benefits of attending the Course

- Dissemination of knowledge gained on fuel cells through a new course “Fuel Cell Technology”.
- This course bestows a disclosure to the participants towards the up to date state of play in international research and development in fuel cell energy technology.
- The course takes in hand the issues of environment and energy resources using fuel cell for small and portable applications.
- Serves as an imminent avenue of improving energy efficiency in fuel cells to enable designers to develop better designs.
- Enhances in-depth understanding of Proton exchange membrane Fuel cells (PEMFC) for energy efficiency, performance, safety and economics.
- This underpinning course will follow a line of investigation and progress in Scaling up & Stacking up of Fuel Cells.

Learning Objective

- To combine the expertise in various areas to design and develop a fuel cell system for vehicle applications on the avenues of improving energy efficiency in fuel cells to develop better designs
- Develop low cost and high energy density PEMFC stacks integrate with an efficient control and monitoring system for deliver robust and efficient performance under various operating conditions for automobile application.

Course prerequisites

Participants should have an undergraduate/ postgraduate degree in engineering or equivalent experience/ knowledge.

Who should attend?

This course is designed to assist individuals in various industries including automotive, aerospace background. Budding engineering graduate in the field of mechanical/automobile/ chemical/ material science/ metallurgy and electrochemical engineering are invited to enrich their knowledge in this emerging technology for automotive and power generating sectors. Company's senior executives, engineering managers and engineers will find the course relevant and informative.

Course Date & Time

FUEL CELL TECHNOLOGY - POWER SOURCE FOR AUTOMOBILE APPLICATION	**18th & 19th July 2014**
Start: 9:00 am to 5:00 pm	

Facilities provided during course

- Networking Tea/Snacks
- Networking Lunch
- Delegate Kits

How to enroll

Fee Structure (Two days)

Non-Member	INR 13000/-	Last date of Registration 16th July 2014
Member	INR 10000/-	
Faculty Advisor	INR 4000/-	
Registration fee for two days		

- Admissions would be on first come first serve basis and will be strictly through enrolment Procedure
- Limited seats per batch
- Special discount to Teaching Faculty advisor
- Special discount on group booking (minimum 5 attendees for same session- 10% Discount)

Pay course fee through DD/Cheque or Transfer to our account

Name of the account holder: SAEINDIA Southern Section Toptech
Account No. : 32506111653
Bank Name : State Bank of India
Branch Name : Kottur, Chennai
IFSC Code : SBIN0001669

Enrollment Procedure

- Send us following details to **toptech@saeiss.org** for registration
- Registration form enclosed or **Click Here**

Course Instructor

Dr. P. Karthikeyan, Professor in the Dept. of Automobile Engineering at PSG College of Technology, Coimbatore. He received his PhD Degree at Indian Institute of Technology Madras (IIT-M), Chennai on 2008. After successful completion of his PhD Degree at Indian Institute of Technology Madras (IIT-M), he was received BOYSCAST fellowship (2009-10) from DST, Government of India for conducting Advanced Research Training in the area of "Fuel Cells - Water Management in PEM Fuel Cells" in USA. He had authored more than 23 research papers in reputed national and international journal, 19 peer reviewed international conferences, and filed 1 technical patent (Invention Disclosure No.: D2010-65). He had also executed several national and international research projects sponsored by various agencies such as DST, DST-SERI, AICTE-RPS, Indo-Mexico and EPSRC. His research interest includes Thermal and Water Management issues on scaling and stacking up of fuel cell, Studies on PEM Fuel Cells with Porous Flow channels and Porous Inserts on Non-Porous Flow Channel, Membrane Electrode Assembly (MEA) with platinum alloy catalyst and non-noble metal catalyst using nano-materials, Optimization of flow channel design and various operating parameters for enhancement of performance on PEMFC, Development of Indigenous 1KW Fuel cell Stack for automobile and stationary applications, and various issues for system development and system integration. He is currently supervising 6 PhD students.

About SAEINDIA Southern Section

SAEINDIA Southern Section is a premier society that serves the cause of mobility engineering. It is a unique society that includes professional engineers who serve different OEMS and Suppliers, academia as well as budding engineers (students) who aspire to be part of the professionally attractive field of mobility engineers. We believe that Mobility Engineering is a knowledge rich field and that learning and sharing can be fun and rewarding. To this end, SAEISS organises several events throughout the year, runs programmes that enrich and engage and conducts lectures and symposia. It is a part of SAEINDIA.

SAEINDIA is a Premier Professional society that serves the Mobility Engineering Community engaged in the design, manufacture and service of self-propelled vehicles and systems that move in land, sea, air and space. It is an affiliate society of SAE International which is head quartered in USA and has a glorious record of over 100 years of service to the mobility community. SAEINDIA works closely with other fraternal societies such as Society of Indian Automobile Manufacturers (SIAM), Automotive Component Manufacturers of India (ACMA) and American Society of Engineers of Indian Origin (ASEI) for spreading knowledge and relevant information to a wider cross section of the Indian community. It is also a member of International Federation of Automotive
Engineering Societies (FISITA)

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SAEINDIA SOUTHERN SECTION

Further pls contact:

S. Ilangovan, TopTech Executive

SAEINDIA Southern Section

Mobile No: 9043001718