SAEINDIA The Engineering Society For Advancing Mobility Land Sea Air and Space

NEWS LETTER
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Upcoming Major Events

Jan 2015
Virtual SUPRA SAEINDIA 2015 @ Vel Tech University Chennai.

Jan 2015
SIAT 2015 @ ARAI Pune.

Jan 2015
ICAM 3D @ Chennai

Feb 2015
BAJA SAEINDIA 2015 @ Indore

Mar 2015
ELECTRA SAEINDIA 2015

SAEINDIA 2015

I did write on the next orbit of growth towards the Vision 2020 set forth by the eminent galaxy of illustrious Past leaders of SAEINDIA. Presidential Policies 2015 is slowly and steadily being translated into action by the programs and events carried out in the last 3 to 4 months.

The International Workshop on Integrated Vehicle Health Management for Aircrafts turned out to be a spectacular success in all respects. The support from Industry and Aerospace professionals including scientists and researchers was commendable. The event also gave impetus to drive more activities under aerospace board. The 5th Anniversary celebration of Aerospace Board was a logical extension with assembly of Captains and Leaders from Aerospace Industry to prepare the road map for the future.

Following the success of Blue Ribbon CEO Conclave during the visit of SAE 2014 President Mr. Daniel Hancock, Automotive Round Table on New Product Development was conducted in 3 locations viz., Chennai, Pune and Delhi. Each meet witnessed an assembly of key stakeholders from the industry with very healthy and active interaction.

SIAT 2015(Symposium on International Automotive Technology) conducted in Pune touched a new high in terms of participants, exhibitors, delegates, sponsors and papers presented.

SAEINDIA is planning to organize ITEC INDIA 2015 (International Transportation Electrification Conference India) along with IEEE Industry applications Society for the First time in India during end August 2015. The theme for the event has been chosen as "*Electrifying Mobility through Holistic Ecosystem Solutions*". We seek active participation from all the members of SAEINDIA in terms of contributing Technical Papers. The Abstract submissions are underway through the SAE My Tech Zone.

The 8th Edition of BAJA SAEINDIA will be held at Pithampur, Indore in February 2015. This event will feature e-BAJA, teams competing ATVs with electric power trains for the first time.

SAEINDIA is also organizing ICAM-3D Car Design Challenge in collaboration with ESCI-The Institution of Engineers at Chennai in early February. The competition will inspire students to work on 3D Printing which can transform designs into tangible parts in one step without using conventional tools.

The Symposium on Fuels, Lubricants, Emissions and After-Treatment Devices is scheduled to be held on 24th & 25th April 2015 at New Delhi which will be the cornerstone in the process of finalizing Auto Fuel Policy and Vision 2025.

We would like to publish more technical articles originating from India in the upcoming issues of Mobility Engineering. Therefore, we shall appreciate contributions from members of SAEINDIA by way of technical articles on latest developments and advancements in Indian Automotive Industry. Please send your contributions to Mr. Srinivas - dy.manager.project@saeindia.org .

We would like place on record our appreciation for Mr. K. Shriramchandran, Deputy Director

Cont...

SAEINDIA

SAEINDIA Managing Committee Members 2014 - 2016.

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Representing SAE International
Dr. David. L. Schutt

Mr. Murli M. Iyer

General, on his dedication and commitment, who is moving out of SAEINDIA shortly.

We also welcome Mr. G Vijayan, long time professional member of SAEINDIA assuming charge as Deputy Director General with effect from 2nd February 2015. We wish him all the best for his success in his new assignment.

We are marching ahead in our policies and programs to make a definite and distinct impact on the mobility community getting them in the global wavelength to achieve the stated objectives.

Warmest Regards,

Dr. Aravind S. Bharadwaj
President,
SAEINDIA.

SAEINDIA SUPRA SAEINDIA Student Formula

Virtual SUPRA SAEINDIA 2015

on 8th – 11th Jan 2015 at Vel Tech University, Chennai

For more: www.suprasaeindia.org

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INTEGRATED VEHICLE HEALTH MANAGEMENT (IVHM)

SAEINDIA Aerospace Board hosted a day-long international workshop on Integrated Vehicle Health Management (IVHM) on October 17, 2014 in Bangalore with Experts from around the world & India.

IVHM is "The unified capability of a system of systems to assess the current or future state of the member system health and integrate that picture of system health within a framework of available resources and operational demand."

The goal of IVHM is to maintain complex systems so that they can deliver their stated performance requirements by reducing life-cycle costs and not compromising on safety. It aims to do this by implementing optimal maintenance actions that are based on information gathered from the asset itself and from its operational and maintenance history, integrated with appropriate system models and with knowledge of the maintenance and repair supply chain.

There are 5 key phases of the IVHM process as shown in the figure 1 are: Sense, Acquire, Transfer, Analyze, and Act. Data is acquired from the asset (In future from the logistics supply chain) via sensors that are either embedded or are installed during maintenance. Transfer of data is accomplished via existing wired communication links or wireless. Analysis function consists of algorithms that correct, scale, and normalize the data, analyze the data, compare it with expected values obtained from detailed system models, and make maintenance decisions based on deviations from the norm. The appropriate advice (Action) is then given to maintenance to take the needed action. This advice will clearly engender further actions that affect the MRO (Maintenance, Repair and Overhaul) supply chain.

The workshop at Bengaluru consisted of two parts, the first consisting of four plenary talks and practical demonstrations, and the second, a series of panel sessions on various aspects of EHM and IVHM.

Mr. Richard Greaves, the President Elect of SAE, started off the proceedings with a concise history of the SAE and its involvement in aerospace activities. Mr. David Alexander from SAE Europe followed this up with an exciting audio-visual, interactive demo of a new website. Then Mr. Ian Jennions from Cranfield University gave a comprehensive introduction to IVHM. Finally Mr.Ravi Rajamani from Meggitt USA talked about the state of the art in engine health management (EHM). The highlight of the session was a live demonstration of Boeing's Aircraft Health Management (AHM) system by Mr. Dave Kinney from Boeing, Mr. Steve Heath from Etihad Airlines, and Mr. Sameer Buch from Jet Airways.

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The 1st Panel discussion on **Engine Health Management (EHM)** was chaired by K. S. Ramprasad from GTRE. The panelists were Bharatan Aravamudhan, Honeywell; Lachanna Arsha, Cyient; Alexandre Belli, Air France/KLM; Duncan Chase, Rolls-Royce; Gene Iverson, Boeing; and D. Umamaheshwar, GE.

The 2nd Panel on **Integrated Vehicle Health Management** was chaired by Dr.Kota Harinarayana from ADA. The panelists were Richard Greaves, Meggitt; Amit Patra, IIT Kharagpur, Kallappa Pattada, Boeing, G.V.V. Ravikumar, Infosys, K. Vijayaraju, ADA and Rhonda Walthall, UTAS.

The 3rd Panel on **Practical Aspects of IVHM** was chaired by A. R. Upadhya from ADA. The panelists were Prashant Bhadoria, HAL; David Fontaine, UTAS; S. Gopalakrishnan, IISc; Steve Holland, GM and Tim Wilmering, Boeing.

The 4th Panel on **Complex Systems and Application of IVHM in India** was chaired by Mr. Prakash Mangalgiri of ADA. The panelists were Dinakar Deshmukh, GE; Satish Mohanram, National Instruments; P Sivasankaran Nair, NAL; Amit Patra, IIT Kharagpur, and Madhusudhan Varadaraj, Siemens.

At the conclusion of the panels, Mr. David Alexander summed up the day by thanking all the participants and encouraging the audience to actively participate in SAE activities. The events of the day were brought to a gracious close by the co-chair of the conference, Dr. Bala Bharadvaj from Boeing, who thanked all the volunteers, especially D. Seshadri and his dedicated team of volunteers from SAEINDIA and the local student members, the Workshop Steering Committee, and the SAEINDIA Aerospace Committee, who worked diligently on making this event a success.

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SYMPOSIUM ON INTERNATIONAL AUTOMOTIVE TECHNOLOGY, 2015 (SIAT 2015)

In today's automotive world, we need to adopt eco-friendly technologies, enhance safety and ensure connectivity of vehicles. This is all possible if we innovate and collaborate to shape our products. The use of Information and Communication Technology (ICT) have forced developments speed to unprecedented levels, and our customer's demands continue to rise as they remain connected to readily available information and grow increasingly knowledgeable.
SIAT 2015 assembles the best talent in the Automotive Industry, who will join hands to collaborate and deliberate the current challenges to promote the multitude of opportunities for a successful automotive industry.

The Symposium on International Automotive Technology (SIAT) is a widely covered biennial international event organized by The Automotive Research Association of India (ARAI). SIAT serves as an important forum for sharing ideas and knowledge concerning promising areas of Automotive Engineering and Technology, wherein eminent experts and authors present Keynote and Technical Papers in multiple sessions.

The coming edition of SIAT i.e., SIAT 2015, 14th in the series is being organized by ARAI in association with SAEINDIA, NATRiP and SAE International at its campus in Pune, India, from 21 to 24 January 2015.

Approximately 200 technical papers including 40 keynote on various subjects will be presented during the symposium. SIAT will focus on important areas like Advanced Powertrain Technologies, Emissions, Noise, Vibration & Harshness (NVH), Alternate Fuels, Virtual Prototyping, Virtual Testing, Safety and Crash Worthiness, Automotive Electronics, Structural Dynamics, Vehicle Engineering and Automotive Materials.

Symposium proceedings will be published along with a Technical Reference Bulletin containing technical articles, case studies and product information. There would be panel discussions and student poster presentation competition too. An exposition SIAT EXPO 2015 will also be organized to showcase Automotive Products, Equipment's, Services and Technology Solutions in around 200 stalls. There would be "Technology Theatre" as a special event on 24th January 2015 where eminent companies including ARAI would give presentations on latest state of the art technology.

Engine Failure Investigation and Analysis

SAEINDIA along with SAE International organised a seminar on "**Engine Failure Investigation and Analysis**" by **Mr. ROBERT KUHN**, on **1st & 2nd Dec 2014 in Chennai and 4th & 5th Dec 2014 in Pune.** He is an authentic expert with years of experience and demonstrated expertise in the subject. He is also part of the eminent panel of SAE in the International Lecture circuit.

Engines can and do experience failures in the field in a variety of equipment, vehicles, and applications. On occasions, a single vehicle type or equipment family will even experience multiple engine failures leading to the inevitable need to determine what the most likely cause of one or all of those failures was. This comprehensive seminar introduces participants to the methods and techniques used to determine the most likely cause of an individual engine or group of engine failures in the field. The seminar began with a review of engine design architecture and operating cycles, integration of the engine into the vehicle itself, and finally custom duty cycles and operating environments. Special emphasis was placed on the number and type of sub-

systems that not only exist within the engine (Diesel and Gasoline) but are used to integrate the engine into the overall vehicle package. Following this review, participants learnt about failure types, investigation techniques, inspection methods, and how to analyze the available evidence using their own knowledge of engine and vehicle operating characteristics to determine the most likely cause of an engine(s) failure. The seminar concluded with a review of actual engine failure case studies that were investigated and resolved using the same process and methods taught during the course.

Evaporative Emission Control

SAEINDIA along with SAE International organised a seminar on "**Evaporative Emission Control"** by Dr. Sam Reddy, on **9th & 10th Dec 2014 in Delhi, 12th & 13th in Bangalore and 23rd & 24th Dec 2014 in Pune.** Dr.Sam Reddy is an acknowledged expert on the subject with years of experience in the field.

Dr. Sam Reddy is currently working as a Director, Deltronix USA, Inc. He was a Technical Fellow at GM Research and Development Centre. He holds twenty-six U.S. patents and several more are pending. He has authored eleven SAE papers in the same field. He is the recipient of three GM R&D Charles L. McCuen Special Achievement Awards, two GM Boss Kettering Awards, and 2004 SAE Environmental Excellence in Transportation Award.

This comprehensive training class introduced the participants to the principles of gasoline evaporative fuel vapor generation (diurnal, hot soak, running loss, and refueling) from the vehicle fuel tank, fuel vapor storage in activated carbon canisters, and fuel vapor purging (desorption) and consumption in engine combustion. The training class began with an analysis of gasoline and gasoline/ethanol blends and estimation of their vapor pressures and vapor generation. In-depth analysis of various fuel vapor generations as a function of fuel properties (ethanol content, Reid Vapor Pressure, etc.) and ambient conditions were presented. Activated carbon canister design, OBD II leak detection, hydrocarbon permeation, and Euro5/6, CARB and EPA evaporative test procedures were also covered. Participants had the opportunity to apply the knowledge gained by solving numerous practical problems and help in designing a sample evaporative and refueling emission control system.

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BAJA SAEINDIA 2015

The forthcoming 8th BAJA SAEINDIA has been scheduled to be held at NATRiP, Pithampur from 19th - 22nd February 2015. It is an event where the engineering college student teams are tasked to design and build an all-terrain off-road vehicle as per guidelines provided in terms of construction and safety. Baja has now become a big brand with initiatives of SAEINDIA and ARAI. Mahindra & Mahindra has come forward to be the Principal Sponsor for the event like previous years and others like ARAI, Altair, ANAND Group, ANSYS, AVL, Briggs and Stratton, Bharat Petroleum, Cummins, Eaton, Emitec, Endurance, FIAT, General Motors, iCAT, John Deere, NATRiP, Varroc have also confirmed to continue to support the event.

From this year we are taking it to International level by making strict rules and difficult test tracks. Also, this year we are inviting International teams to compete on the Indian Tracks. We have introduced new high speed endurance track of larger spread and of more hurdles. Tracks like suspension and traction, Maneuverability are now modified to a better extent. 110 teams from all over the India will compete on the same track.

This year we are also introducing eBAJA , where 10 teams from all over India will take part. The electric vehicles will run with the same power as the combustion engines and will share the same track as of Main event. With the help of some technical workshop by M-Reva with the students and by the efforts of our organizing committee are being taken to make the event a success.

Students are preparing well in their workshops as they are giving the final mould to their vehicle with their for mutated designs as they will have to face the technical inspection in their college.

SUPRA SAEINDIA 2015

SUPRA SAEINDIA 2015 is a college Design competition Series organised by SAEINDIA which started in the year 2009. This event provides a real world engineering challenge for the SAEINDIA student members that reflect the steps involved in the entire process from designing, building, testing, production to marketing and endurance. Students can build a vehicle to international standards and they can also participate in all international competitions with the same vehicle.

SUPRA SAEINDIA always starts with a qualifying event where all the registered teams are required to present their virtual design with detailed specifications complying with the defined rules. The selected teams in the VIRTUAL SUPRA will qualify for the main event which will be held in JULY 2015.

This time the VIRTUAL SUPRA 2015 was held at VELTECH TECHNICAL UNIVERSITY, CHENNAI on 8th, 9th & 10th JANUARY 2015 with

- Day 1 – Registration of Teams.
- Day 2 – Inaugural and Virtual Presentation.
- Day 3 – Final Result and Valedictory.

For SUPRA SAEINDIA 2015 a total of 167 teams registered from all parts of the country. Automotive professionals from companies like Mahindra & Mahindra, Bajaj, Tata Motors, Bosch, Altair etc were invited for judging the student presentations.

Automotive roundtables

SAEINDIA in partnership with SIEMENS conducted Automotive roundtables at CHENNAI, PUNE & GURGAON.

The First automotive roundtable event was held in Chennai on December 15, 2014 at Hotel Courtyard by Marriott, Chennai hosted by Mr. Prem from Siemens. The table had core panel discussion featuring Dr. Aravind S. Bharadwaj, Mahindra & Mahindra Limited (M&M), Mr. Sharma, Ashok Leyland; Mr. Nageshwara Rao, TAFE Mr. Sundar, Rane Madras; and Mr. Anirudha Takle, Siemens.

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The concentration of the discussion was toward RFQ to Cash process and the Key points were:

- RFQ to cash might not be the right approach
- Engineering capacity understanding of the company
- Importance of change.

The second automotive roundtable event was held in Pune on December 16, 2014 at Hotel Hyatt Regency, Pune. The table had core panel discussion featuring Mr.Devajeet Sarkar, VP, Sourcing Supply Chain, M&M Trucks & Buses division, PK Banerjee, Head, Product Evaluation, Tata Motors; and Sanjay Kulkarni, Head, Vehicle Engineering, Eaton, Mr. Gautam Gupta, Senior Director of Marketing, Siemens. The concentration of the discussion was toward RFQ to Cash conversion and the Key points were:

- Product management across all technical centers across globe.
- Regulation driven industry.
- complexity in program management and supplier management.
- Reusability and recyclability of working parts from expired products.

The final automotive roundtable event was held in Gurgaon on December 22, 2014 at Hotel Crowne Plaza, Gurgaon. The table had core panel discussion featuring Mr. Sandeep Bhatia, Siemens, Mr. Raman, Maruti, Mr.Naveesh Garg, Mr. Shrinivas, and Mr. P.K Acharya. The concentration of the discussion was toward Visualization of RFQ, planned, and controlled during the entire product development stage of a product and the key points were:

- Tracking operational and material cost simultaneously;
- Proper visualization of customer requirements before quotation
- Challenges in costing for advanced engineering projects.
- Requirement of an organized costing group.

SAEINDIA Aerospace Board's 5th Anniversary

SAEINDIA Aerospace Board turned five years old on 17 December 2014. The Aerospace Board was established on 17 December 2009 in recognition of the increasing level of aerospace activities in India. The board consists of industry leaders from companies such as Boeing, GE, Eaton, NAL, HCL SAFRAN, and HAL. The group's objective is to develop a strong community of interest, leading to a healthy aerospace ecosystem in India.

The Aerospace Board, headed by Dr. Bala Bharadvaj, ensured that this day will not only provide members of the board with those moments to reminisce on, but also provide a platform to plan the next five years by brainstorming with the August members present. The board also announced key points, which will ensure rolling out measurable and qualitative activities. Bharadvaj started the day by introducing both the founding members & present board members of the Aerospace Board. Following the introductions, Mr. Damodaran shared milestones that were collaboratively achieved during the first five years. Bharadvaj then interacted with the audience by introducing the concept of S.I.N.G. S - Share your perspective IN – on Industry Needs and/or India Needs G – what can you "Give to the community" and want to "Get from the community." Six groups were formed for discussions at the table on various topics of interest. This was followed up with one member some of the key ideas presented by the different group representatives Mr. Bejoy George, Mr. K.P Murthy, Mr. Prajol, Mr.Munirathnam, Mr. Naresh Palta, Mr. Kumar Subramaniam.

SAEINDIA SECTION NEWS

BANGALORE SECTION

Inaugural of SAEINDIA HKBK COLLEGIATE CLUB, 10th oct-2014

Inauguration of SAEINDIA collegiate club of HKBK College of Engineering, Bengaluru was held on 10th of October, 2014. Mr.K.P.Murthy, Vice Chair, student activities, SAEINDIA, BS inaugurated the club and addressed the students.

Mr.Purushotham S.Joshi, BDM, SAEINDIA, Bangalore Section accompanied Mr.K.P.Murthy and addressed students regarding SAEINDIA's student activities.

Inaugural of SAEINDIA Sahyadri collegiate club 30th OCT-2014- Mangalore

Inauguration of SAEINDIA collegiate club of Sahyadri College, Mangalore was held on 30th of October, 2014. Mr.K.P.Murthy, Vice Chair, student activities, SAEINDIA, BS inaugurated the club and addressed the students.

The inauguration was followed by a technical talk by Mr. Girish N. Ramaswamy, from Continental, on Power Trains.

Inaugural of SAEINDIA JIT collegiate club 06th NOV-2014.-Bangalore

Inauguration of SAEINDIA collegiate club of Jyothi Institute Of Technology, Bengaluru was held on 06th of November 2014. Mr.K.P.Murthy, Vice Chair, student activities, SAEINDIA,BS Inaugurated the club and addressed the students.

NORTHERN SECTION

AWIM REGIONALS DPS Gurgaon

SAENIS successfully organized and hosted the Regional Round of "A World In Motion (AWIM)" at Delhi Public School, Sector 28, Gurgaon on 15th November 2014.

The event was inaugurated by Mr. Alok Jaitley, Convenor - AWIM' 2014 Dr. Tapan Sahoo, Secretary – SAENIS Mr. Sandeep Raina, Vice Chair (Student Activities) SAENIS, Mr. Deepak Panda, Co-Convenor - AWIM, Mr. Anup Kacker, Executive Director - SAENIS, Ms. Meera Mathur, Head Mistress, DPS Gurgaon took part in the function. This was followed by a mesmerizing Saraswati Vandana by the students of DPS Gurgaon and the AWIM Regional Olympics was declared open.

AWIM is an international event organized by SAE which seeks to inculcate STEM curriculum - Science, Technology, Engineering and Mathematics in schools. In India, AWIM organizes 2 challenges – Skimmer Challenge for 5th grade students and Jet-Toy Challenge for 6th grade students.

The active involvement of Industry and University volunteers fosters curiosity and creativity among young students and enhances their thought-building process. The students learn through experimentation and eventually build Jet toys and Skimmers fulfilling different requirements.

AWIM Olympics is a platform where students make their dream toy car and learn the concepts of inertia, friction and laws of motion as they design and make their cars.

A distinguished panel of judges from the automobile industry judge the event on parameters such as Innovation, Creativity, Communication, Ideas and Presentation.

AWIM REGIONALS DPS Gurgaon

After selection and rigorous practice at school level, teams from various school compete to go for National competition. The winner at Nationals further represents India at International Level competition held every year in Detroit, USA. Through this competition, College Volunteers get an opportunity to manage the whole event along with Industry volunteers.

In AWIM'14 Regionals, 23 schools from Delhi/ NCR region participated in the Jet toy and 17 schools participated in the Skimmer Competition. The team from Tagore International School, Vasant Vihar emerged as the final winner of Jet Toy and Air Force Bal Bharti School secured second position. CCA Gurgaon emerged as the winner for Skimmer.

The Winning team will now compete for the Nationals which are going to be held in Chakkan, Pune in Jan'15. The event witnessed ardor and zeal amongst school children that made this event a successful one.

Congratulating the winners, Mr. C.V Raman, Chairman - SAENIS and Mr. Deepak Panda, Co-Convenor - AWIM shared the experiences of teams which participated in the event and also took their feedback on the event.

SOUTHERN SECTION

Techniques for High Cycle Fatigue Testing of Automotive Components and Welds

In Lecture series, a one day lecture on "Techniques for High Cycle Fatigue Testing of Automotive Components and Welds" jointly organised by SAEISS & ABS Instruments Pvt. Ltd, Chennai at SAEISS office, Chennai on 18th October, 2014 handled by eminent speaker Mr. P.S. ANAND, Vice President, ABS Instruments Pvt. Ltd, Chennai .

The program was inaugurated by Mr. Meenakshi Sundaram, MC Member - SAEISS and presided by Mr. T.R. Sathyanarayanan Treasurer – SAEISS.

The main objective of this lecture is to explain the fatigue life of engine and other automotive components. There are different ways of analyzing fatigue life of components, joining techniques and crack growth in materials. One of these is the servo hydraulic system and the other is the electromagnetic resonant type fatigue testing system. In this lecture meeting we explained about the advantages and disadvantages of each as well as provided a brief background on the history and nuances of fatigue testing.

Lecture series a one day lecture on "Metro Rail Technology"

In Lecture series a one day lecture on **" Metro Rail Technology"** jointly organised by IMRT Secunderabad & SAEINDIA Hyderabad Section on 18th October,2014 October at Engineering Staff College of India- Hyderabad handled by eminent speaker **Mr. Parvatikar Narayan V,** Consultant railway Signalling & Railway Signal Training Provider: IMRT Secunderabad.

In the Lecture the Various Design & Technology aspects of Metro rail such as rail Track, Locomotives, Coaches, Electrical Propulsion, Signalling & Telecommunication were covered.

SAEISS TREK

In a 2 days Trek Program organised by SAEISS on **Dec 4th & 5th 2014** at **Kamaraj College of Engg. And Technology, Virudhunagar** with our key resource persons Mr. S. Shanmugam, Mr. T. Kasiraja.

Videos were presented to the participants to have a better understanding on engineering fundamentals like Newton Laws of Motion, Gravity & Free Body Diagrams – FBD.

Then all the participants were divided into a team of 4 members & a small challenge to experience the design process in real time. Mr. T. Kasiraja explained the objective & Purpose of the challenge, requirements & expectation from each teams.

Student Executive Council Member – Workshop

The workshop is focused on training the SEC Members of SAEINDIA Southern Section to act as leader & take the leadership of conducting more events on Student Convention. *SEC's* presenting the events to the Chairman - Mr. N. Balasubramanian "Align the events to the Nations goal - MAKE IN INDIA" and "creating a platform for engineering students to learn & understand the Manufacturing Technology".

SEC Members working on the suggestions given by Chairman, and guidance from *Dr. D. Muruganandam* & Mr. S. Shanmugam. Day 2, SEC members final presentation to Mr. Dinesh Shyamsundar - WABCO India Ltd & T. R. Sathyanarayanan Treasurer SAEISS.

SKIP - Student Knowledge Improvement Program

The automotive industry has understood the need for Finite Element Analysis now. Wide range of software packages are available to carry out FEA with ease. Consequently Finite Element Analysis is being widely used by many industries and especially the usage is unlimited in automotive industries.

However, there is considerable lack of understanding of formulating problems for FEA and interpreting the results. This program is designed to bring in better understanding of formulation and interpretation.

The seminar was primarily for practicing engineers in Industry and college seniors. The seminar had four sessions, the first on Introduction the second on commonly used finite elements, the third on Critical speeds (rotors) and natural frequencies of stators and the fourth on Case studies of problems solved by the speaker during the last ten years. The course was industry oriented and not mathematical. The participants evinced lot of interest during the presentation.

Introduction covered the relevance and the need to learn the rudiments with reference to present industrial scenario in the country. The types of elements centred around commonly used elements to model a complicated unit covered by most commercial packages viz 2D beam, 3D beam, plate element, axis symmetric element and solid element. The emphasis was on Indian standards on plates, structural (steel tables), materials used like medium, high carbon and alloy steels. The lecture on critical speeds of rotors emphasised the figures significance of these with respect to functional requirements of rotor. The case studies covered were based on the work done by the speaker on the problems solved covering the length and breadth of this country on analysis and on field measurements connected with heavy engineering, process and chemical plants. It is hoped the seminar would encourage the practicing engineers to use this method analysis effectively.

AWIM Master Teachers & Volunteers Training program

Mr. C. Shanmugham presented the Jet-toy activities and he demonstrated the building of chassis and Jet-toy.

After Initial demonstration, the team comprising of 2 members was formed, one teacher and one volunteer in every team. There were 5 teams for the event. The teams were asked to test their chassis on a ramp with specified gradient to check the directional stability of the Jet-toy and were asked to install the balloon later on, to complete the jet-toy. The teams were provided with charts to prepare the presentations with theme for their Jet-toy.

There was also a aesthetic round. Each team tested their jet-toy on the corresponding tracks for Distance, Weight, Speed, Extended time travel & Accuracy. The results for the same were noted by the corresponding teams.

WESTREN SECTION

SAEINDIA AWIM 2014 Pune Olympics

SAEINDIA AWIM 2014 Pune Olympics was held at The Orchid School, Baner, Pune on 22nd November, 2014. The event was a grand success with more than 224 students from 17 different schools contesting and displaying their knowledge and skills.

This year in Pune Olympics, two activities namely Jet Toy for 6th standard and Skimmer for 5th standard were introduced and more than 40 teachers trained 2000+ students in these design context and played an important role in the development of future engineers and scientists. We had 150+ volunteers from John Deere, Eaton, and ARAI joined the hands for training over period of three months. The wonderful part of AWIM 2014 Pune Olympics was participation of schools from NGO and slum areas, also the schools driven by ZP & PMC, thus bringing students from grass root level of the society.

The event was honored with 18 judges. Inaugural function, valedictory function and Prize distributions were glorified with the presence of eminent dignitaries from industries and school. The prize distribution ceremony was cheered by more than 30 parents.

Mrs. Rashmi Urdhwareshewas, Director of ARAI & Chairperson of SAEINDIA Western Section was the Chief Guest in Inauguration, & Mr. Dilip Chhabria of DC Designs wa the Chief Gurest in Valedictory Function, Dr. K. C. Vora(Co-Ordinator, SAEIWS), Mr. N. P. Wagh(Secretary, SAEIWS).

Stringent Noise Emission Regulations

One day Workshop on "Stringent Noise Emission Regulations" was jointly Organized by Siemens, ARAI & SAEINDIA Western Section on 1st December at Bangalore, 2nd December at Chennai, & 5th December 2014, at Pune handled by eminent speakers are **Mr. N. V. Karanth :** Sr. Dy. Director & Head of NVH & CAE Lab at ARAI, Pune. **Dr. Filip Deblauwe:** Technical Manager, HQ sales, Simulation and Test Solutions, Siemens Industry Software NV, Belgium. **Mr. Kumaraswamy S:** Technical Manager (Test), LMS India, A Siemens Industry Software company, Bangalore, India and **Mr. Geetanand Kedilaya** Sr. Technical Manager (Simulation), LMS India, A Siemens Industry Software company, Bangalore.

The main objective is to make certification of all types of vehicles mainly in an urban environment Legislators have attempted to reduce noise at the source by regulating acceptable levels emitted by vehicles, imposing limits for pass-by noise levels. Pass-by noise testing measures vehicle noise emission levels on an exterior test track. Results of pass-by noise tests are used to certify that vehicles comply with emission standards.

Pass-by noise testing is a standard procedure with the most recognized standard being ISO 362. Stringent noise emission regulations as new regulations will impose lower limits for which additional pass-by engineering techniques are required to reduce noise levels. These techniques enable engineers to decompose the noise into the contribution of all separate sources, such as engine, intake exhaust and tires. By employing those techniques, engineering teams are able to decide which source they should focus on to most effectively reduce overall noise levels. They are even able to set noise level targets at an early development stage of the subsystems & vehicles. Workshop witnessed an overwhelming response from participation of Engineers & Scholars. Around 70 delegates were attended the workshop.

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Conference Highlights

ITEC INDIA 2015, International Transportation Electrification Conference India is aimed at helping the industry in the transition from conventional vehicles to advanced electrified vehicles. The conference is focused on components, systems, standards, and grid interface technologies, related to efficient power conversion for all types of electrified transportation, including electric vehicles, hybrid electric vehicles, and plug-in hybrid electric vehicles (EVs, HEVs, and PHEVs) as well as heavy-duty, rail, and off-road vehicles and airplanes and ships.

ITEC INDIA 2015 will be held in Chennai, India between August 27-29, 2015. The conference is organized by SAEINDIA & IEEE Industry Applications Society. This conference will address technical interests related to the electrification in the transportation sectors including but not limited to, Electric and Hybrid Vehicles, and Plug-in-Hybrid, Aeronautical, Railroad and Off-Road vehicles. ITEC INDIA 2015 will present an array of papers across different topics, ride and drives and first ever pan-India student EV competition.

Topic areas include but are not limited to:

- Power Electronics and Electric Motor Drives
- Electric Machines
- Sensors and Actuators
- Battery and Battery Management System
- Electric, Hybrid Electric, and Plug-in Hybrid Electric Vehicle System Architectures
- Smart Grid, Electrical Infrastructure, and V2G
- Charging and Charging Infrastructure
- Autonomous Vehicles
- V2V Communication and ICT
- Electrification of Heavy-Duty and Off-Road Vehicles
- Fuel Cells and Applications in Transportation
- Electrical Systems and Components for Sea, Undersea, Air, Rail and Space Vehicles
- Modeling, Simulation, Control and Systems Integration
- Standards, Policies, and Regulations for Transportation Electrification
- XIL-Model, Software, Hardware In The Loop

Key Dates

Deadline for submission of 5-page digest and abstract	Friday, March 6, 2015
Paper reviews completion	Wednesday, April 15, 2015
Notification of acceptance to authors	Monday, April 20, 2015
Submission of final papers	Friday, June 26, 2015

Papers presented in ITEC-INDIA will be included in both the SAE Digital Library AND IEEE Xplore.

Papers presented at the conference will also automatically be eligible for submission for review and possible publication in IEEE Transactions on Industry Applications (https://mc.manuscriptcentral.com/ieee-ias), IEEE Industry Applications Society Magazine and IEEE Transactions on Transportation Electrification(https://mc.manuscriptcentral.com/tte-ieee).

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