SAEINDIA BENGALURU SECTION
NEWSLETTER – July 2022
Welcome Note

Dear SAEINDIA Members and Colleagues,

A Warm welcome to all of you to experience yet another edition of our newsletter. First, a big thank you for being a member of our SAEINDIA community; if you are reading this newsletter through circulation, I encourage you to experience and join our largest network of engineers.

During this period SAEINDIA Bengaluru section, with the support of SAEINDIA HQ, Other sections from Pan India, most notably the forums like Engineering and Education Board and Aerospace Forum, supported and participated in various flagship events. AeroCON 2022 is one such international event. Along with the event, we also celebrated our 25th-year Anniversary celebration. This event was conducted in collaboration with Western Section; Aero Forum was kind enough to accommodate alongside the gala dinner of AeroCON2022. You will learn more about these two events in this edition through special coverage.

One of the significant achievements during this period, our PDP committee and Academia interaction committee developed several training programs in emerging technologies to enhance the skills of the professional members. These programs also were quite an insight to the faculties and students.

Overall, from SAEINDIA BS, we had a satisfying quarter and inching towards excellence in operational matters, participation and support to E-Baja, preparation for REEV 2nd Edition, E-Baja preparation for 2023, support for AeroTHON Phase 1, workshop on EGA and many more. Further we also had our annual strategy meeting at TVS IQL (Institute for Quality and Leadership).

I sincerely thank our team of Management committee members, volunteers, and sponsors for their constant and continuous support. Without your help, we cannot develop various programs and cater to multiple technocrats' disciplines through professional development programs, student events and extensive format technology symposiums. All of these are with one common goal: to deliver the best of the technology developments in the world of mobility.

Happy reading!

Damodaran SUBRAMANIAN
Chair – SAEINDIA Bengaluru Section.
Greetings to you all

As a convener of the SAEINDIA Silver Jubilee Committee, it was my privilege to be present on the SAEINDIA Silver Jubilee Celebration Ceremony of the Bengaluru Section.

SAEINDIA started SAE activities in India on 28th Nov 1997 and entered Silver Jubilee Year from 28th Nov 2021. Therefore, the Silver Jubilee year of SAEINDIA is being celebrated throughout the year till 28th Nov 2022. It was a unanimous outcome to celebrate this event by respective sections.

The series of silver Jubilee celebration started with the online curtain raiser program at Pune on 27th Nov 2021. Taking it further, SAEINDIA Bengaluru Section took an important step in organizing the first-ever Physical Silver Jubilee Program in a very short time & with the constraint of program time. The Section rather took a major leap to organize the first-ever Silver Jubilee Program, alongside AEROCON 2022.

I have a lot of people to thank for making the Silver Jubilee event successful :-

- To start with, I express my gratitude towards Mrs Rashmi madam - President SAEINDIA for her continuing support and involvement and guidance to bring this event at this level.
- Special thanks to Mr. Murli Iyer, Dr. David Schutt, and all former and Current SAE International Presidents for standing with SAEINDIA Fraternity since its inception and helping us to build SAEINDIA from the ground up.
- Thanks to all past Presidents of SAEINDIA, and all MC members for their support.
- Thanks to past Chairman of SAEINDIA Bengaluru Section - Late Mr. Srinivasa Raghavan, Mr. Vinay Harne, Mr. Rao Chalasani, Mr. Javaji Munirathnam, Mr. K P Murthy, Late Mr. M. Kannan, and current Chairman Mr. S. Damodaran for their constant support and all MC members of the Section (from respective years). Also, thanks to Dr. Bala Bharadwaj – Past SAEINDIA President, Dr. Manish Jaiswal, Mr. Rakesh Bidre, Mr. Girish Ramaswamy and all other MC Members of the Section.
- Thanks to Aerocon Committee Members and especially Mr. Ravishankar Mysore and his team for their efforts for this program. Also, thanks to the Steering & Organizing committee members and volunteers of Aerocon for their wholehearted support and consent to arrange the silver jubilee program alongside the Conference.
- Also special thanks to Mr. Somashekhar and Mr. Pavan of Bengaluru Section and Mr. Sheshadri, Mr. Vijay Antony Babu, Mr. Ilangovan, Mr. Kaza and the man behind the force, Mr. K. Venkataraj from SAEINDIA HQ.

I personally thank all SC, OC members, and all Sections chairman /secretary and staff for extending unconditional support and timely help and guidance to initiate and execute the Silver Jubilee Year for SAEINDIA.

It’s also worth appreciating the support of SAEINDIA HQ and wholehearted support from SAEIWS - without their contributions the Silver Jubilee celebration would not have been possible.

It’s also worth mentioning that Bengaluru Section Silver Jubilee was the beginning of SAEINDIA Silver Jubilee celebration and similar celebrations are planned in all other sections.

Sincerely yours

Manohar Chaudhari
Convener SAEINDIA Silver Jubilee Program
Bengaluru Section Celebrates Silver Jubilee of SAE In India

As a pan India Initiative to celebrate Silver Jubilee, SAEINDIA Bengaluru celebrated Silver Jubilee on 2nd June, at Radisson Blu Bengaluru, on the sidelines of the AEROCON Conference. The Silver Jubilee was hosted by SAEIBS Chair Mr. Damodaran, along with SAEINDIA Aerospace Forum Chair Mr. Ravishankar Mysore.

The dignitaries included SAEINDIA President - Mrs Rashmi Urdhwareshe, SAEINDIA Past President - Dr Bala Bharadvaj, SAE International Executive Advisor - Global Affairs - Mr. Murli Iyer, SAEINDIA Engineering Education Board Chair – Mr. Munirathnam, SAEIWS Chair – Mr. Sanjay Nibandhe, SAEIBS Past Chair – Mr. K P Murthy, SAEINDIA HQ DDG – Mr. Venkataraj, SAEINDIA Silver Jubilee Convenor – Mr Manohar Chaudhari, Management Committee Members from SAEIBS and Aerospace Forums, Family Members of Past SAEIBS Chair – Late Shri M Kannan, Past Senior Leaders from Bengaluru Section and Aerospace Forum, and participants of the Aerocon Conference.

The evening started by welcome address from Mr. Venkataraj, who highlighted the achievements and challenges of not-for-profit organization like SAEINDIA and thanked all those involved in making it reach the significant milestone. Mrs Rashmi Urdhwareshe talked about the pivotal role, which SAEINDIA and its leaders have played in shaping mobility industry and how she has drawn personal inspiration from many of them.

Mr. Murli Iyer briefly talked about the past legacy of SAE International and how SAEINDIA got incubated in India and have grown significantly since then. He conferred Dr Bala Bharadvaj as SAE Fellow, in recognition of his extraordinary contribution and leadership in Aerospace and SAE as a society at large. Dr Bala Bharadvaj, later spoke about his journey in SAE and passed an important message about the importance of building network and stressed on the need of doing what is right and not taking a convenient stance. He was later felicitated by Mr. Ravishankar Mysore, as part of the Silver Jubilee Celebration.

Mr. Damodaran then felicitated family members of Later Mr. M Kannan. Mrs. Kannan thanked SAEINDIA fraternity for the recognition and spoke about the important values, which Late Shri M Kannan carried all his life. The felicitation of all past and present leaders, MC members from SAEIBS and Aerospace forum was subsequently carried out. The list of members felicitated is shown in the following page. The evening was also graced by wonderful performance by Visually challenged artists from ‘Kadamba Melody of Music’ orchestra.
SAEIBS Collegiate Clubs Recognition

SAEINDIA Bengaluru Section has taken a new initiative to recognize the collegiate clubs which are active from more than a year. Five collegiate clubs were selected in the process and recognized for their consistency.

SAEINDIA Bengaluru Section look forward for the continued leadership of these Institutes in encouraging the students and faculty to actively participate and benefit with the vast activities of engagement that we offer to bring a holistic growth to the mobility engineers.

1. KLE Technological University
2. Dayananda Sagar College of Engineering
3. Manipal Institute of Technology
4. Siddaganga Institute of Technology
5. Er Perumal Manimekalai College of Engineering
My journey started as a student member in 1999 and the first SAE Mobility conference was first held in Delhi and subsequently in 2002 at IIT MADRAS, where I was a student volunteer leader for SIIMC. After 22 years of my journey with SAEINDIA as a student member to management committee member of SAEINDIA Bengaluru Section. As part of the journey, I also established the first student chapter in BITS Dubai in the year 2008.

With various active participation, I am now the SAEINDIA International Mobility Conference 2022 Organizing chairman which is being planned at Hilton Convention Centre, Manyata Tech park from 12th to 14th October 2022.

The Conference will be attended by 800+ Delegates Onsite and 700+ delegates virtually across various parts of the country and abroad. It will provide a unique opportunity to interact with practicing engineers, young startups and meet the TOP notch automotive leaders from India and overseas.

SAEINDIA not only gave me a professional development and gave me lot of mentors in my professional journey which led me to become an entrepreneur. During this journey of 12 years of my entrepreneurial experience I felt the need that India should have a startup support in terms of marketplace, mentoring, Money, Angel investors, Motivating and a sustainable platform.

From my Idea of the Startup mela and with the support of Patron, Steering Committee and organizing committee leaders, we curated a program called Techhive, which is a marketplace and technology demonstration event. The Techhive will be attended by senior leaders of OEM, Angel Investors, Incubation centers and family funded business managers.

I am inviting all of you as the organizing chairman of SIIMC 2022 and look forward to receiving you at the event. My purpose of sharing my story is that the world is full of opportunities and it’s for you to get how much you need. Also, a special invite to the student community to actively participate and be one of the future leaders or entrepreneurs of the auto industry in India and globally. If I can do, you can all do a lot for the betterment of the mobility industry. Come and participate in this mega festival of learning and progress on your career. Topics will be discussed in the as below:

SAEINDIA International Mobility Conference (SIIMC2022)
Theme: Sustainable Multi-Modal Mobility Ecosystem

Munirathinam Dhananjayan
Founder MD - Focus Engineering India
Focus Technologies LL Dubai and Focus track Business Transformation Coach and Digital Solutions BMW Group Certified Aftersales Consultant
**SIIMC2022 – Program Structure – 12th to 14th October**

<table>
<thead>
<tr>
<th>Time</th>
<th>Main Hall</th>
<th>Hall 1</th>
<th>Hall 2</th>
<th>Hall 3</th>
<th>Hall 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:30-18:00</td>
<td>Registration - 12th Oct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30-18:00</td>
<td>9:00-10:45</td>
<td>Session 1 Simulation and Testing-1</td>
<td>Session 2 Hybrid &amp; EV -1</td>
<td>Session 3 Emission, Environment and Sustainability-1</td>
<td>Session 4 Autonomous &amp; Connected Vehicle-1</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>High Tea Morning (Day 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-12:30</td>
<td>Opening Ceremony Day1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30-13:00</td>
<td>Plenary Session 1 - Key Note Speakers 1 on Day 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Lunch (Day 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>14:00-16:00</td>
<td>Session 6 Simulation and Testing-2</td>
<td>Session 7 Hybrid &amp; EV -2</td>
<td>Session 8 Emission, Environment and Sustainability-2</td>
<td>Session 9 Autonomous &amp; Connected Vehicle-2</td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>TechHive 1 (in parallel with Tech sessions post Lunch) - Day 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>High Tea Evening (Day 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:30-17:30</td>
<td>Plenary Session 2A - Panel Discussion 1 on Day 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Plenary Session 2B - Key Note Speakers 2 on Day 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30-18:00</td>
<td>Registration - 13th Oct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30-18:00</td>
<td>9:00-10:45</td>
<td>Session 11 Simulation and Testing-3</td>
<td>Session 12 Hybrid &amp; EV -3</td>
<td>Session 13 Emission, Environment and Sustainability-3</td>
<td>Session 14 Autonomous &amp; Connected Vehicle-3</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>High Tea Morning (Day 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-12:30</td>
<td>Plenary Session 3A - Key Note Speakers 3 on Day 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30-13:00</td>
<td>Plenary Session 3B - Fire Side Chats 1 on Day 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Lunch (Day 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>14:00-16:00</td>
<td>Session 16 Simulation and Testing-4</td>
<td>Session 17 Hybrid &amp; EV -4</td>
<td>Session 18 Emission, Environment and Sustainability-4</td>
<td>Session 19 Vehicle Electronics &amp; Software -1</td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>TechHive 2 (in parallel with Tech sessions post Lunch) - Day 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>High Tea Evening (Day 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:30-17:30</td>
<td>Plenary Session 4A - Panel Discussion 2 on Day 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Plenary Session 4B - Key Note Speakers 4 on Day 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:30-21:00</td>
<td>Cultural Program &amp; Gala Dinner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30-18:00</td>
<td>Registration - 14th Oct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30-18:00</td>
<td>9:00-10:45</td>
<td>Session 21 Simulation and Testing-5</td>
<td>Session 22 Multiple Modes of Mobility</td>
<td>Session 23 Emission, Environment and Sustainability-5</td>
<td>Session 24 Vehicle Electronics &amp; Software -2</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>High Tea Morning (Day 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-12:30</td>
<td>Plenary Session 5A - Key Note Speakers 5 on Day 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30-13:00</td>
<td>Plenary Session 5B - Fire Side Chats 2 on Day 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Lunch (Day 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>14:00-16:00</td>
<td>Session 26 Simulation and Testing-6</td>
<td>Session 27 Manufacturing, Materials &amp; Lightweight Solutions-4</td>
<td>Session 28 Session 19 Autonomous &amp; Connected Vehicle-4</td>
<td>Session 29 Vehicle Electronics &amp; Software -3</td>
</tr>
<tr>
<td>14:00-16:00</td>
<td>TechHive 3 (in parallel with Tech sessions post Lunch) - Day 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>High Tea Evening (Day 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:30-17:30</td>
<td>Plenary Session 6 - Panel Discussion 3 on Day 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Valedictory Ceremony &amp; Closure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is integral to a modern-day Professional? The answer to this Question has changed less since the Industrial Revolution – Continuous Learning.

Undoubtedly, Continuous Learning is a key ingredient of Professional Growth. The modern-day professional compared to earlier generations has a unique ecosystem in which one’s career thrives – this differentiation is marked by technology bursts, complex business models, shifting customer needs, and a need for responsible resource utilization. These drivers call for fast paced excellence through innovation and value realization. An individual professional being a microcosm of this ecosystem, can best deliver when equipped with the right exposure to learning.

Professional Development Programs (PDP) at SAEINDIA do just this, for individuals and organizations at large. At SAEINDIA Bengaluru Section (SAEIBS), our continuous focus is on enabling world class learning opportunities for our patrons. PDPs are a fundamental instrument through which we achieve this apart from student competitions, conferences, and several other engagements designed for both Professionals and Students.

During Apr’21-Mar’22, SAEIBS delivered over 45 unique sessions in a range of topics bringing deep enrichment to its patrons. SAEIBS collaborated with Expert Speakers from Industry and Academia to realize this. In all, over 100 hours of learning, with 1000+ learners actively engaged, we could enable a fruitful learning year. The current and upcoming years are getting even bigger and better.

Unique Value Positioning of PDPs

PDPs bring a unique value to its patrons. This value is rarely matched through other learning modes. PDPs are live, interactive, and give access to the expert in real time. The topics covered are carefully chosen and curated to maximize benefit to patrons. The content is exclusive, and one can derive this knowledge and depth from the experts with deep industry and academic background; not found in Textbooks, MOOCs or online platforms at large. Another invaluable gain from PDPs is professional networking with co-learners and the experts.

Reach out to SAEIBS for tailored learning needs for your organization. If you are an individual, reach out as well, and we will enable learning paths that suit you. Write to us at pdp@saeibs.org to share your ideas and needs.
Range Extended Electric Hybrid Vehicle Competition – Edition 2

The flagship event of SAEINDIA Bengaluru Section (SAEIBS), which is REEV (Range Extended Electric Vehicle) and the REEV Virtual 2022 was organised on 9th April 2022, with the valedictory ceremony on 17th April 2022. Owing to the risk of pandemic, this year’s event was held as a Hybrid Event, while all the judges were present at one venue and the students were at their respective locations. The event was hosted at Presidency University, Bengaluru.

Among the 11 registered teams for the event, 9 teams participated in this year’s virtual event, with over 200 students participating virtually. As REEV is basically divided into 2 stages, in the 2nd stage (planned in later part of 2022), the students will design & develop the vehicle and drive them in road & track conditions.

REEV Virtual 2022 was virtually inaugurated by Mr. Javaji Muniratnam, EEB-Chair, Mr. Girish Ramaswamy, Vice Chairman - SAEIBS, Mr. Venkataraj K, DDG - SAEINDIA, Mr. Rakesh Bidre, Co-Convenor: REEV 2022, Mr. Vijay Ramakrishnan, Convenor - REEV 2022. The special guest for this year REEV Virtual 2022 was Dr. Jayaraman Sivakumar, Director, Technical Centre General Motors & Tata Consultancy Services at Bangalore, India.

Dr Sivakumar spoke about the role of virtual in the future of electrification. He Mentioned that GM’s vision for future is all electric and touched upon various topics like simulation, challenges in design of electric vehicles, the unknowns on the road to electrification.

Mr. Javaji Muniratnam acknowledged the efforts of REEV OC members Mr. Sunil Gupta, Mr. Rakesh Bidre, Mr. Chandrashekar Prasad, Mr. Vijay Ramakrishnan, Mr. Shashidhar C, Mr. Phani S, Mr. Vivekananda K, Mr. Mohanakrishnan P, Mr. Hitesh M, Mr. Rajesh K, Ms. Ayushi Gupta, Ms. Soundarya Kamath, Mr. Srinivas Surampudi, Mr. Arun S Bhaire, Mr. Gururaj H Kulkarni, Mr. Sujaya Kumar, Dr Manish Garg, Mr. Vijay Kumar R, Mr. Aerpula Krupal & Mr. Abhisek Roy.

All the Virtual Winners are listed below:

Chassis & Suspension, Brake System & Steering System winners: Team Aryabhata of Presidency University.


Best Virtual Presentation & Team Participation Award winners: Team Perseverance Motors of Bannari Amman Institute of Technology.

Best Team Captain winner: Mr. Honey Kethan from Team Green Torq of Malnad College Of Engineering.

Distinguished Student Presenter: Mr. Brijesh J Gurav & Mr. Tejas D.V. & Mr. Shubham Landage.
2nd Runners up of REEV Virtuals 2022: Team Black Hawk of Vidhyavardhaka College of Engineering.

1st Runners up of REEV Virtuals 2022 – Team Resonance Racing of All India Shri Shivaji Memorial Society College of Engineering.

Winners of REEV Virtuals 2022: Team Aryabhata of Presidency University.

E-BAJA 2022 Event Report

BAJA SAEINDIA’s ground-breaking electric edition engages thousands of students over the course of one year in the design and construction of a battery powered, single seater all-terrain vehicle that can navigate harsh terrains. In 2015, the eBAJA competition made its debut in the BAJA SAEINDIA series and ran concurrently with the IC engine powered mBAJA category. It quickly gained popularity and with each year, the eBAJA category attracted more and more students credited by its vast spectrum of opportunities to work with sustainable mobility. An endeavour that launched with 8 participating teams has now grown to record the highest number of registrations this year with 76 teams participating in the online phases and 36 teams competing on track. BAJA SAEINDIA 2022 restructured the event into 3 phases which included two rounds of virtual evaluation and the main physical event. For the first phase, the Preliminary Round conducted in September 2021, the teams were required to present their prototype designs virtually in the presence of a panel of judges. Among the 214 teams who took part in this initial evaluation, 76 teams participated under the eBAJA category.

Phase 2, Virtual BAJA SAEINDIA was conducted in December 2021 for both the mBAJA and eBAJA categories. This virtual round evaluated the team's capabilities in Sales & Marketing as well as Cost, Manufacturing, Design and CAE aspects through its designated static events. With a vision to counteract the risks of COVID – 19, BAJA SAEINDIA introduced the Virtual Dynamic Events in its previously held entirely online edition.

Continuing this pioneering event, the Virtual Dynamic Events were conducted using world renowned automotive simulation software - IPG Carmaker to simulate the student-generated models in various environments. Each scenario was designed to mimic the extreme terrains that an ATV will encounter. The different tracks included brake performance, acceleration, gradeability, maneuverability, suspension & traction, and all terrain performance. This 15th edition of BAJA SAEINDIA provided the benefit of participating remotely to international teams. 3 international teams participated in the online phases, of which 2 teams registered under the eBAJA category.
The third and final phase of evaluation was the Physical Event, hosted at the BAJA SAEINDIA Racing Circuit within the NATRAX facility in Indore. After successfully concluding the third phase for the mBAJA category in April, the eBAJA Physical Round was organized from 1st to 5th June 2022 as an independent event for the first time. The final year participants attended the BAJA Aptitude Test (BAT) – a preliminary assessment of the candidate’s technical competency and general aptitude. The BAT is the first round of the BAJA HR meet where recruiters from industry-leading companies scout talent and hire them for various roles.

The teams were rewarded for their consistent effort over all three phases at the valedictory ceremony held that day. Over 11 lakhs worth of prize money was distributed among the top performers of each category. Team E – Ziba Racers from Shri Vishnu Engineering College for Women took the position of overall 2nd runner up and Team Nemesis Racing from College of Engineering, Pune took the overall 1st runner up position. The team Acroracerz of Acropolis Institute of Technology and Research took the overall title of the eBAJA edition.

BAJA SAEINDIA presents every opportunity to connect students with the industrial environment. Over the period of a year, workshops, webinars, and training sessions are organized in collaboration with the sector. In addition to these resources, the opportunity to enter the core industry is provided through the BAT HR meet. Students who cleared the BAT are directly connected to the recruiting companies where their selection process proceeds to the next level. ARAI, Mahindra & Mahindra, ATS, Pravaig, GM, Ather Energy, Anand Group and EKA mobility are some of the companies that participated in this year’s recruitment for the eBAJA category. Participants of eBAJA are skilled with the technical knowledge and hands-on experience of creating a battery powered vehicle that can endure extremely rough terrains. Through the challenges that are specifically structured to familiarize students with the demands of the industry, the foundation to work towards sustainable mobility is developed in the process. The 15th edition of BAJA SAEINDIA took multiple strides to deliver the skill sets and expertise that can propel a student in their preparation to revolutionize the industry. This vision will continue to manifest through the future editions of BAJA SAEINDIA.

Rakesh Bidre
Head of Virtual Integration & Safety Crashworthiness-TCS
Secretary – SAEINDIA Bengaluru Section
AeroCON – 2nd Edition

SAEINDIA with SAE International, organized the 2nd edition of International Aerospace Conference in India – “AEROCON 2022”. The Indian Aerospace Defence (A&D) market is projected to reach approximately $70 billion by 2030, driven by the burgeoning demand for advanced infrastructure and Government thrust (Source: IBEF) and is driving the need for industry events for collaboration among all the players.

AeroCON is a prestigious biennial International Aerospace Conference. It is a unique event providing a global networking opportunity for Aerospace professionals, both from industry and academia, besides the reputed national defence laboratories, and is conceived to lay the roadmap for the future of Aerospace & Defence.

The first edition of AEROCON was held in a virtual mode in November 2020. The second edition of the conference focused on ‘Autonomous Airborne Systems’, focusing on various research trends, challenges, and opportunities.

The conference was held as a physical event, significantly enhancing the learning that happens through face-to-face interactions during the event. In addition to the technical paper presentations, the conference featured many speakers of international repute, in the plenary session presentations and panel discussions.

AEROCON 2022 received more than 400 registrations and was held at Hindustan Aeronautics Limited’s (HAL) Management Academy in Bengaluru, India on 2nd & 3rd June 2022.


The ceremony was inaugurated by:

Mrs Rashmi Urdhwareshe - President of SAEINDIA
Mr Ravishankar Mysore - Former Vice President, Collins Aerospace
Dr G. Satheesh Reddy - Chairman DRDO
Mr Murli Iyer - Executive Advisor, Global Affairs, SAE International
Dr Girish S. Deodhare - Director-General, Aeronautical Development Agency
Dr Balaguruna Chidambaram – Director, Boeing Research & Technology
Dr Shreekant Sharma - General Manager, HAL Management Academy

Highlighting Aerospace Presence

David Schutt, CEO of SAE International, in a recorded message, said that SAE occupied a commanding position when it comes to aerospace standards. “Since SAE’s inception more than a century ago, our mission has driven us to support the advancement of mobility solutions in the aerospace and aviation industry, this commitment continues to this day,” he said. “SAE prides itself on being at the forefront of the convergence of cross-industry technologies such as AI, electrification, additive manufacturing, sustainability, and so many more. Our broad capabilities enable us to develop patented products such as SAE OnQue, which is transforming aerospace engineering design and development through digital standards,” he added.

Rashmi Urdhwareshe, President of SAEINDIA, said one of the main reasons that an event such as AEROCON was being held, was due to SAEINDIA’s firm belief in supporting the needs of India’s aerospace industry. The growing participation of India’s private sector in the aviation industry is now becoming increasingly significant and would lead to the creation of the rich human resources required for the industry’s growth.
Mr Murli Iyer, Executive Advisor Global Affairs, SAE International, highlighted that SAE International is the largest aerospace standards developing organization globally and has the largest repository of knowledge on aerospace engineering. SAE International organises three major international events - for ground vehicles, aerospace and off-highway commercial vehicles.

The call for papers and presentations were released in July 2021. Over 125 refereed paper abstracts and 11 oral presentation abstracts were received and subjected to the multi-stage process of abstract acceptance, full paper submission, peer reviews and finally 30 peer-reviewed technical papers being accepted in Feb 2022 in total and was presented in this edition of the conference, in addition to three oral-only presentations.

All the presented peer-reviewed papers are published in SAE Mobilus. We thank the submission track chairs for managing the entire peer-review process: (from IIT Bombay) Dr Makarand Kulkarni, Dr Dhwanil Shukla, Dr Harshad Khadilkar, Dr Arpita Sinha, Dr Leena Vachhani, Dr Chandra Sekher, Dr Arnab Maity, Dr Shashi Ranjan Kumar, and (from Tata Consultancy Services) Mr Subbarao CV. We are grateful to over 70+ reviewers from academia and industry across the world for their efforts in reviewing the paper submissions and providing valuable reviews in time. Further, we thank all the authors who submitted their work for consideration, at this premium aerospace conference. The best Paper Award selection process was also conducted to determine the best papers.

**AeroTHON 2022 Phase 1**

SAEINDIA Aerospace Forum is organizing AeroTHON 2022 Contest for students with primary focus on developing design and build skills of Uninhabited Aerial Vehicles (UAV) to prepare them industry ready for the emerging market.

Objective of AeroTHON 2022 is to inculcate innovation mindset among student community in emerging technologies like Uninhabited Aerial Vehicles. AeroTHON aims to incubate and nurture skills and capabilities in aero design in young minds and prepare them towards Atmanirbhar Bharat in critical aerospace technologies. It provides a platform for students interested in Aerospace to demonstrate their aircraft design skills and facilitate development of next generation of entrepreneurs. To help students develop practical and interpersonal skills, the Contest has been promptly divided into two phases

1. Phase – 1: Design report & Oral presentation

The objective for this year’s Contest is to design, build and fly a multirotor UAV that can deliver cargo to a specified location. The teams shall design an Uninhabited Aerial Vehicle that can carry a small payload of 200gm and deliver it to a target area by manual as well as autonomous operations. The payload dimensions are 10 cm x 5 cm x 5 cm.

During the Phase 1: Design Report & Oral Presentation, the students were invited to submit their innovative designs to meet the criteria set. Overall, 52 teams from across the country registered for AeroTHON 2022. The participant teams submitted a technical design report of their UAV as per the design requirements. The innovative designs were evaluated by industry and academic experts. During this phase, teams also gave a presentation to a jury comprising of over 60 industry and academic experts. During the oral presentations which was held at GTTC, Bangalore on 25th June 2022, all the teams presented their innovative designs to the jury. This was also an opportunity for the teams to interact with other participants in person and learn from industry experts. Based on the evaluation of design reports and oral presentations, top 20 teams were shortlisted for phase 2.

TVS Tech Day

It was a day of learning and sharing, attended by 200+ TVSM engineers, where two industry experts “demystified” complex subject of AI/ML, complemented with address from TVSM & SAEINDIA leadership, highlighting the future trends in transport industry and importance of the advance methods in solving future challenges.

On 04th February 2022, Friday afternoon, SAEINDIA organized a 2+ hours of Tech Day @ TVS Motor Company to introduce TVSM engineers to futuristic engineering methods, AI/ML and make TVSM team aware of SAEINDIA’s activities and its contribution to mobility industry, and how an engineer can join SAEINDIA and be part of community and contribute. The session was ably moderated by Ms. K Latchiya, senior engineer from PED (production engineering department), TVSM.

The event started with a welcome address from Mr. Damodaran Subramanian, chairman SAEINDIA Bengaluru Section (SAEIBS), where he paid his rich tribute to Late Shri M Kannan, ex-chairman SAEIBS & GM R&D, TVSM. To set the context, he highlighted the need of change from a simple control to an intelligent/ cognitive control. A control which can take inputs from various sensors, like human sensory system, and make intelligent decision, like humans. He spoke about need of generation “GenX”, and digital affinity of the new generation and how this need must be fulfilled by mobility industry with smart/ human like control, cognitive control.

The Chief guest of the event, Mr. Vinay Harne, CTO TVS Motor Company, helped in setting the context for the event with a data driven insightful discussion on upcoming challenges to our society and nation. He highlighted the importance of electrical mobility and commitment of TVSM towards this future. Mr. Harne added, India will be USD 7.8 trillion economy, with more than 62% population less than 35 years - a tech savvy generation. At the same time,
fast urbanization and ever-increasing demand of mobility will present a unique combination of challenges and opportunity, and TVSM must be prepared for this and take a leadership role in shaping the future of mobility.

During the technical talks, Industry experts provided their rich insight on AI/ML.

Mr. Vijayalayan R (Manager, Automotive Industry Field Application Engineering, MathWorks India Pvt. Ltd.) presented his talk “Digital Transformation Enabled by AI: New Trends and Challenges”. He discussed the need of a pragmatic approach to digital transformation, means and selection of right problem, which must be complex and where traditional methods will not give sufficient and optimum solutions. He highlighted that industry in general is focusing on customer experience – anomaly detection, predictive maintenance, and new business opportunities – from selling product to selling services, and this is led by digital transformation, such as implementation of digital twin, enabled by AI/ML. Mr. Vijayalayan shared few examples from industry success stories, where companies have used AI/ML to solve complex problems, such as deep reinforcement learning (ML) in powertrain control by Vitesco technologies, for NOx reduction implemented in Renault cars. In another example, he discussed about successful implementation of Digital Twin (DT) to estimate the State-of-Health (SoH) of a battery pack in an electric vehicle, and how a data driven AI method made this possible. This helped NIO, an EV startup in USA, achieve predictive maintenance for a battery pack in their fleet of cars.

Mr. Vijayalayan also introduced audience to typical workflow of AI based control design and deployment, consists of, data preparation → AI modelling → system design → deployment, and how, AI modelling building should be combined with scientific & engineering insights. He emphasized that machines cannot replace innate scientific and engineering prowess of an organization. Finally, he shared a practical example of digital twin implementation.

The second technical talk was from Dr. Vivek Venkobarao, Principal Architect at Vitesco Technologies, responsible for AI and its implementation in electrification. Dr. Vivek introduced AI/ML using an interesting sketch, which depicted how sensory information (relevant data) when combined with algorithm/computing, can help in designing an intelligent control system. He demystified AI/ML by comparing it with classical control methods. He explained complexities of AI/ML methods, such as, neural network and fuzzy logic with analogies in physical world. Finally, to
explain the implementation of AI/ML methods in actual product development, he took an example of intelligent BMS, where he showed how a smart controller can help in giving a better user experience, while overcoming the range anxiety issue in an EV, through a neural network-based controller. Dr. Vivek shared references and resources for audience in case they are interested in starting AI/ML in their own domain.

Final presentation was from Mr. K Venkataraj, Deputy Director General (DDG) SAEINDIA. Continuing the theme of the event, he shared emerging trends in AI, specific to automotive industry, for example, six major AI trends in automotive industry are, 1. Cloud computing, 2. The internet of things, 3. Machine learning, 4. Deep learning, 5. Infotainment system & 6. Cognitive capabilities. Then, he shared the example of BMW Motorrad of successful implementation of AI in self-driven/ self-balancing motorcycle. Finally, he took audience through SAE heritage, its presence in India, its stakeholders and value addition done by SAE to automotive industry. He shared why engineers should join SAEINDIA community and contribute to the community.

The event got concluded with vote of thanks from Dr. Manish Garg, Principal engineer, TVS Motor Company.

**SAEINDIA Bengaluru Section Membership update**

SAEIBS membership count is growing steadily month on month and is currently at 1764 (till July 202).

<table>
<thead>
<tr>
<th>Month</th>
<th>Total Professional Members</th>
<th>Student Members</th>
<th>Net Total</th>
<th>Collegiate Clubs</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2021</td>
<td>674</td>
<td>1533</td>
<td>2990</td>
<td>13</td>
</tr>
<tr>
<td>January 2022</td>
<td>680</td>
<td>1544</td>
<td>3005</td>
<td>13</td>
</tr>
<tr>
<td>February 2022</td>
<td>660</td>
<td>1545</td>
<td>2985</td>
<td>13</td>
</tr>
<tr>
<td>March 2022</td>
<td>667</td>
<td>1550</td>
<td>3009</td>
<td>13</td>
</tr>
<tr>
<td>April 2022</td>
<td>673</td>
<td>707</td>
<td>1740</td>
<td>4</td>
</tr>
<tr>
<td>May 2022</td>
<td>665</td>
<td>741</td>
<td>1764</td>
<td>4</td>
</tr>
<tr>
<td>June 2022</td>
<td>685</td>
<td>850</td>
<td>1843</td>
<td>5</td>
</tr>
<tr>
<td>July 2022</td>
<td>654</td>
<td>1267</td>
<td>1921</td>
<td>6</td>
</tr>
</tbody>
</table>

**Top 10 Companies with Highest Memberships in Bangalore Section**

- TVS Motor Company
- Collins Aerospace & Goodrich Aerospace
- Infosys Ltd.
- Honeywell Technology Solutions
- Boeing International Corporation India Private Limited
- GM-TCS
- HCL Technologies Ltd.
- Aeronautical Development Agency
- Robert Bosch Engineering & Business Solutions
- GE India Industrial Pvt Ltd.
SAEINDIA Bengaluru Section Strategy Meet at TVS IQL

SAEINDIA Bengaluru Section Management Committee wrapped the eventful first half of the year 2022, by having a full day strategy meet on 9th July at the lush green TVS IQL Academy. This was the first physical meet after more than 2 years. The idea was to refresh, retrospect and plan the road ahead for the next 1-2 Years. The physical break-out room concepts were used to have a cordial yet heated brainstorming on just two topics – PDP / Webinar (next phase) and Simulation driven student Innovation contest. The team certainly has developed a good bonding and the enthusiasm amongst MC is high to push the boundaries of the value driven engagement to all stake holder – Professional and Student Members and Industry Partners.

Watch out for more happenings soon!

For any query or feedback, members can reach out to Pavan from SAEIBS get-blr@saeibs.org

For more information, visit our webpage https://saeindia.org/section/bangalore-section/