INAUGURAL SESSION

Dr. Anil Kakodkar, Chief Guest
Chairman, TIFAC
DAE Homi Bhabha Chair Professor at BARC
Former Secretary to the Government of India, Department of Atomic Energy

VALEDICTORY FUNCTION

Dr. Kantilal H. Sancheti
Inventor of India’s First Indigenous Knee Implant - The Indus Knee
Founder of Maharashtra’s First Orthopaedic Dedicated Specialty Hospital

INDUSTRIAL VISIT

Volkswagen India Private Limited
Chakan, Pune

Mahindra Heavy Engines Private Limited
Chakan, Pune

THEME PAVILION BY IIT KANPUR

The Materials Pavilion put up by IIT-K provides a glimpse into the past, present and future of automobile industry. The pavilion has a poster-session dedicated to the theme of “Evolution of Automobile Technologies” which brings out the various technologies related to automobiles that evolved over past century. Pavilion also highlights the current research being conducted on various automotive technologies. The research ranges from current technologies in engines, to future lightweight, high-strength, high impact-resistance materials. Several working models such as two-stroke engines, BIW of a car, remote controlled helicopters, (Team Autobirdz, SIDBI) and a few lightweight high performance materials are also on display.

IIT-K has been a hub of automotive research for past several decades. Some of the important books on automotive technologies that have come from IIT-K have been have been put on display in the pavilion. A part of the credit for high-quality research also goes to the hands-on education that is imparted right from the undergraduate level. Some of the working models prepared by second year students, as part of their lab-work, are a testament to this.

Materials Pavilion is also hosting a competition on “Artistic Micrography” and “Evolution of Automobile Technologies”. Students and researchers from across the country can participate in these competitions and win prizes. “Artistic Micrography” will highlight how art can be blended with science through various interesting real micrographs.

NATIONWIDE CONTEST FOR STUDENTS

Artistic Micrography

Poster Presentation on Automotive Evolution
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<th>Time</th>
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<tr>
<td>0900 onwards</td>
<td>Registration</td>
</tr>
<tr>
<td>0930 to 1000</td>
<td>Welcome Tea</td>
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<tr>
<td>1000 to 1100</td>
<td>Inauguration Chief Guest: Dr. Anil Kakodkar, Chairman - TIFAC, DAE Homi Bhabha Chair Professor, BARC</td>
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<tr>
<td>1100 to 1130</td>
<td>Visit to Expo</td>
</tr>
<tr>
<td>1130 to 1245</td>
<td>Plenary Session 1: Session Chair: Dr. Mohan Goode, Sr. Vice President (R&amp;D) - Endurance Technologies Pvt. Ltd.</td>
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<tr>
<td>1130 to 1200</td>
<td>Plenary Address-1 Dr. Indranil Manna, Director, Indian Institute of Technology-Kanpur</td>
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<tr>
<td>1200 to 1230</td>
<td>Plenary Address-2 Dr. David Schutt, Chief Executive Officer, SAE International</td>
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<tr>
<td>1230 to 1245</td>
<td>Question and Answer Session</td>
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<tr>
<td>1245 to 1345</td>
<td>Lunch</td>
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**Session A1: Steels and Ferrous Alloys-1**
- Session Chair: Dr. Vinod Kumar, Assistant General Manager, Steel Authority of India Ltd.
- Keynote: Dr. R. K. Ray, R&D Division, Tata Steel Ltd; Role of Cruciform Texture in Automotive Steel
- Session 1345 to 1515
- Introduction of High Strength of Commercial Vehicles – Light Weighing of Vehicles; Mr. Satyajit Mohapatra, Ms. Samrita Das; Essar Steel India Ltd.
- Case Study: Effect of Core Hardness on Impact Strength of the Crown Wheel Material; Yathish Rao; AAM Services India Pvt Ltd.
- Sliding Wear Behavior of Compacted Graphite Iron Cylinder Liner Material; V.S. Sreenivasan, S. Dhansanekaran, Samir Sharma & M. Sathyas Prasad; Ashok Leyland Ltd.

**Session B1: Engineering Plastics and Composites**
- Session Chair: Dr. Nileshkumar Kukalyekar, Technical Product Manager, DSM Engineering Plastics Pvt. Ltd.
- Technical Talk: V. Kannan, Reliance Industries Ltd; Polypropylene & Its Composites in Automotive Industry
- Light Weight, High Flow, High Modulus Colored Polypropylene Compound with Good Gloss for Automotive Interior and Exterior Applications; Mahito Kudoue, Balaji K.V.; Zainulabedeen A.; Mahindra and Mahindra Ltd.

**Session A2: Advanced Manufacturing-1**
- Session Chair: Dr. Nagesh Kini, Principal Scientist and Head, Thermax Ltd.
- Development of High Strength Hot Rolled Coils for Automotive Sector in Underpowered mill at Rourkela Steel Plant; A. K. Bhakata, Ramen Dattaa, B. K. Jha, M. K. Pradhan and C. Muthuswamy; Steel Authority of India Ltd. Ranchi
- Light Weighting Through Tube Hydroforming; Ingrid Rasquinha, Santosh Tayade; Electropneumatics & Hydraulics (India) Pvt. Ltd.
- Influence of Rake Angle and Cutting Speed on Residual Stresses Developed in the Cutting Tool During Orthogonal Cutting; Santosh P.Khare, Prof. V. D. Wakchuaare; S.M. Mullu, 1.Amrutvahini College of Engineering, Sangamner 2.
- The Automotive Research Association of India

**Session B2: Light-weight Materials-1**
- Session Chair: Dr. Paila Sivaprasad, General Manager, Sandvik Group R&D
- Keynote: Dr. In-Ho Jung, Associate Professor, McGill University, Montreal, Canada Thermodynamic and Kinetic Simulation for Light Alloy Design
- Optimizing the Strength and Ductility of Al-6061 Alloy by Various Post- Rolling Ageing Treatments; Sumeet Mishra, Piyush Priyadarsini, Piyush Prade, Sahil Mulia, Kaustubh Kulkarni, N. P. Garao; 1. Indian Institute of Technology Kanpur 2. The Automotive Research Association of India
- An Experimental Analysis of Ultrasonic Vibration Assisted Tapping of Ti-6Al-4V & D; Swapnil Pawar, Sandip Patil, Dr. Suhas Joshi, Dr. Rajkumar Singh; Kalyani Centre For Technology And Innovation; Bharat Forge Ltd.
- Technical Talk: Recent Advances in Aluminum Technology for Light-Weighting; Dr. V. Ramakwamy, Aditya Birla Science & Technology Co. Ltd.

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<th>Time</th>
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<td>0900 onwards</td>
<td>Registration</td>
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<tr>
<td>0930 to 1000</td>
<td>Tea</td>
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<tr>
<td>1000 to 1100</td>
<td>Plenary Session 2: Session Chair: Dr. Sanjay Arole, D.G.M.(QA - Central Laboratory), Volkswagen India Pvt. Ltd.</td>
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<tr>
<td>1000 to 1030</td>
<td>Plenary Address-1 Dr. Amol Gokhale, Director, Defence Metallurgical Research Laboratory</td>
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<tr>
<td>1030 to 1100</td>
<td>Plenary Address-4 Dr. K. Balasubramanian, Director, Non-Ferrous Technology Development Center</td>
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<tr>
<td>1100 to 1115</td>
<td>Tea</td>
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</table>

**Session A3: Steels and Ferrous Alloys-2**
- Session Chair: Dr. K.N. Kulkarni, Assistant Professor, Indian Institute of Technology-Kanpur
- Keynote 1: Dr. Chester Van Tyne, FIERF Professor, Colorado School of Mines, USA Effect of Aluminum on Vanadium Microalloyed Forging Steels
- Keynote 2: Dr. Omkar Nath Mohanty, Director, RSB Metotech (P) Ltd. Advanced Steels for Automotive: Focus on Forging Grades
- New Generation of Forging Steels for Cyclic Loaded Safety Components with Improved Fatigue Properties; Lars Elek, Christian Fischer, Tobias Melz, Rainer Wagener, Vera Wirths, Wolfgang Bleck; 1. Institute For System Reliability and Machine Acoustics ZSM, Technische Universität Darmstadt-Germany, 2. Fraunhofer Institute For Structural Durability And System Reliability Lbi, Darmstadt-Germany
- Development of Tubular Stabilizer Bar for Commercial Vehicle Using Advanced High Strength Steel Material; Rohit Kavi, Sivasubramanian, Srinivasa Vede; Tube Investments of India, Murugappa Group
- Material Solution to Automotive Segment: SAIL’s Effort; Anjana Deva, S K De, A K Bhakta, S Mallik and B K Jha; Steel Authority of India Ltd. Ranchi

**Session B3: Design Methodology and CAE**
- Session Chair: Dr. Sachin Jain, R&T Director, DSM Engineering Plastics (India) Pvt. Ltd.
- Keynote: Dr. C. S. Upadhyay, Professor, Aerospace, Indian Institute of Technology-Kanpur; From Virtual to the Real: Role of Computations in Structural Design
- Numerical Failure Investigation for Feasibility of Advanced Composite Automotive Engine Mounts Subjected to Dynamic Loads; Raju, Sanjay Jainwal, Abhishek Singh; 1. Quest Global Engineering, Bangalore 2. Department of Mechanical Engineering, New Horizon College of Engineering, Bangalore
- Application and Assessment of Bonora Damage Model for Geometry Transferability, Mesh Sensitivity and Plasticity Effects Using MSC Marc; Srikant R; MSC Software Corporation India Pvt. Ltd.
- Optimization of Sheet Metal Forming Process Parameters Using Optimization Tool; Sagar Bajaj, Deepak Wadke, Gopal Musale; Tata Technologies Ltd.
- Significance of Virtual Prototyping In Design of Composite Structures for Automobiles; Ganjan Verma, Santosh Kotlalji, Ashutosh Srivastava; Ansys Inc.
**CONFERENCE SCHEDULE**

**Day-2: 29th April 2014, Tuesday**

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<tr>
<td>1345 to 1515</td>
<td>Session Chair: Mr. N.V. Karanth, Deputy Director, The Automotive Research Association of India</td>
<td>Session Chair: Mr. Udayan B Pathak, Asst. General Manager (Metallurgy), Tata Motors Ltd</td>
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<td>Keynote: Dr. G. Padmanabham, Associate Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCIP); Dissimilar Materials Joining for Automotive Applications</td>
<td>Keynote: Dr. Satyam Suwas, Associate Professor, Indian Institute of Science, Bangalore; Materials Research for Automotive and Aerospace Applications</td>
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<td>Friction Stir Welding of Aluminium Alloys; M.J.Rathod, R.Karale; College of Engineering - Pune</td>
<td>Light-weight Materials and Their Automotive Applications; Sujee K Sah, Moqib A Bawase, M R Saraf; The Automotive Research Association of India</td>
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<td>Development of Stepped Tubular Components for Automotive Applications Using Tube Extrusion Process; Ashok KK, Simbachalam Bade, Dhanooj Balakrishnan, KrishnaKumarasivam; Tube Investments of India, Murugappa Group</td>
<td>Microstructure and Mechanical Behavior of SiC Reinforced Aluminium Metal Matrix Composites for Automobile Applications; Samir Sharma, S. Dhansukh, V.S Sreenivas; Ashok Leyland Ltd</td>
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<td>Eco friendly and Cost Effective Manufacturing Technique for Automotive Drive Shafts; Dineshbabu P., Magrendra G. and Subhash Mahajan; Mahindra &amp; Mahindra Ltd.</td>
<td>Study on the Production of Ultra High Strength Steel (UHSS) at JSW Steel; Pradip K Patra, Srinivasa Ram, M Dhanay Reddy, Darshan Mishal; Tata Technologies Ltd</td>
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<tr>
<td>1515 to 1530</td>
<td>Tea</td>
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<td>1530 to 1645</td>
<td>Session A5: Materials Characterization</td>
<td>Session B5: Design and Analysis</td>
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<td>Session Chair: Prof. Avinash R Ankanfale, Professor, Vel Tech Dr.RR &amp; Dr.SR Technical University, Chennai.</td>
<td>Session Chair: Dr. B P Gautham, Principal Scientist, Tata Consultancy Services</td>
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<td>Keynote: Dr. P. Venkitanarayanan, Professor, Mechanical Engg, Indian Institute of Technology-Kanpur; High Strain Rate Behavior: An Overview</td>
<td>Keynote: Dr. Palla SivaPrasad, General Manager, Sandvik Group R&amp;D; Development and Processing of High Performance Steels – An Approach Using Modelling and Simulation</td>
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<td></td>
<td>Piezo Based Testing Facilities to Discover New Areas in Material Characterisation; Christian Fizer, Rainer Wagenes, Tobias MetaL2, Heinz Kaufmann; 1. Institute for System Reliability and Machine Acoustics Szm, Technische Universität Darmstadt, Germany, 2. Darmstadt, Fraunhofer Institute for Structural Durability and System Reliability LBF, Darmstadt, Germany</td>
<td>Self-Loosening of Three Similar Bolted Joint Designs Using Finite Element Analysis; Shiva Kumar Manoharan, Christoph Friedrich; University of Siegen-Germany</td>
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<td>Utilization of Knowledge Based Utilities for Streamlining the Characterization Procedure of Acoustic Material Properties; Y. S. Thipse; The Automotive Research Association of India- Pune</td>
<td>Design of Automobile Dirt Shield Using Concurrent Design Approach; Shreyas Shingavi, Pankaj Bhurid, M Nagi Reddy, Darshan Mishal; Tata Technologies Ltd</td>
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<tr>
<td>1645 to 1800</td>
<td>Industrial Visit</td>
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**Day-3: 30th April 2014, Wednesday**

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<th>Time</th>
<th>Session A6: Process and Simulation</th>
<th>Session B6: Advanced Materials</th>
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<tr>
<td>0930 to 1000</td>
<td>Session Chair: Dr. Shashank Shelkar, Assistant Professor, MSE, Indian Institute of Technology-Kanpur</td>
<td>Session Chair: Dr. N.P. Gurao, Assistant Professor, MSE, Indian Institute of Technology-Kanpur</td>
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<tr>
<td>1000 to 1100</td>
<td>Keynote: Dr. Vinod Kumar, Assistant General Manager, Steel Authority of India Ltd; Role of Thermo-Mechanical Simulation Studies in Automotive/ Forging Industry</td>
<td>Keynote: Dr. Nagesh Kini, Principal Scientist and Head, Thermax Ltd; Hydrogen Storage Materials for Automotive Application</td>
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<tr>
<td>1030 to 1100</td>
<td>State-of-the-art 3D Simulation Tool as a Strategic Investment; Christiane FOURMBOUR, Julien BARJIER, Mickael BARBELET, Patrice LASNE, David CARDINAUX, Transvalor, Parc de Haute Technologie-France</td>
<td>Titanium – A Futuristic Material for Vehicle Exhaust System and Powertrain Components; Vikrant Garg, Prof. Avinash Ankanfale; Vel- Tech Dr. RR &amp; Dr. SR Technical University, Avadi-Chennai</td>
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<tr>
<td>1100 to 1115</td>
<td>Super-Plastic Forming of High Specific Strength Aluminium Alloys; Vinand V. Arabale; MSC Software Corporation India Pvt. Ltd.</td>
<td>I-Cool-Integration of New Materials into Metropolitan Car Concepts to Control the Inside Temperature; 1. Mr. Tejas Kalekar &amp; 2. Dr. Ing. Carsten Stecher; 1. Automotive Research Association of India-Pune 2. Technical University Braunschweig-Germany</td>
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<tr>
<td>1245 to 1340</td>
<td>Design and Simulation of Magneto-Rheological (MR) Brake for Automotive Application; Shital M. Kulkate, Satyajeet R. Patil, Suresh M. Savant; Rajarambapu Institute of Technology-Salharale</td>
<td>Nanofluids: Effectual Analysis in Automotive Application; Dr. Sanjay Srivastava, Nagendra Singh Chauhan; Maulana Azad National Institute of Technology-Bhopal</td>
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<td>1340 to 1600</td>
<td>Lunch and Visit to Expo</td>
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<tr>
<td>1430 to 1600</td>
<td>Panel Discussion and Valedictory Function: Distinguished Guest Dr. Kantilal H. Sancheti</td>
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<tr>
<td>1600 to 1730</td>
<td>Industrial Visit</td>
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International Conference on Automotive Materials & Manufacturing 2014

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  General Manager, DuPont India Innovation Centre, E. I. DuPont India Private Ltd, Pune
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  Principal Scientist (Process Engineering Innovation Lab,TRDDC), TCS
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  Assistant Professor, MSE, IIT Kanpur
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  Assistant Professor (MSE) - IIT Kanpur
- Dr. S Karthikeyan
  Dept. of Materials Engineering - Indian Institute of Science
- Shri Arjuna Rao M
  Manager (Materials & Technical Benchmarking) , DICV Pvt. Ltd.
Stalls Booked by

- Axxon Material Science
- Jamna Auto Industries Limited
- Icon Analytical Equipment Pvt. Ltd.
- Panatech Asia
- APM Technologies
- MSC Software Corporation India Pvt. Ltd.
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- AIMIL Limited
- Hysitron Nanotechnology India Pvt. Ltd.
- Elico Marketing Pvt. Ltd.
- Premier Colourscan Instruments
- Auto Testing Services (ATS)
- Nilkamal Ltd.
- Comsol India
- Megatech Engineer and Services Pvt. Ltd.
- Horiba India Pvt. Ltd.
- Chennai Metco
- Ashland Composites
- Tube and Shell
Pune, formerly called Poona or Punawadi or Punya Nagari, is the eighth largest city and largest metropolis in India, and the second largest in the state of Maharashtra, after Mumbai. Pune is known to have existed as its own since 937 AD. Chhatrapati Shivaji Maharaj, the founder of the Maratha Empire, lived in Pune as a young boy, and later over saw significant growth and development of the town during his reign. In 1730, Pune became an important political centre with the Peshwas. After the town was annexed to British India in 1817, it served as a cantonment town and as the “monsoon capital” of the Bombay Presidency until the independence of India.

Today, Pune is known for its educational facilities, with more than a hundred educational institutions and nine universities. In Pune one can see many temples, own citadel Shaniwarwada, museums etc. Pune has well-established companies manufacturing, glass, sugar and forging industry since the 1950-60s. It has a growing industrial hinterland, with many information technology and automotive companies setting up factories in Pune district. The city is known for various cultural activities like classical music, spirituality, theater, sports, and literature. These activities and job opportunities attract migrants and students from all over India and abroad, which makes it a city of many communities and cultures.

Famous pilgrimage places of Alandi and Dehu are near to Pune. Saint Dnyaneshwar creator of holy book Dnyaneshwari spend significant time in Alandi and took Samadhi at the young age of 18 years. Saint Tukaram hails from Dehu. Dehu hosts famous Gatha Temple.

Chakan, where ARAI – Forging Industry Division is situated also has a history which dates back to period of Ramayan. Chakan has a fort called “Bhukekot Killa”, which means that the fort is on normal ground level and surrounded by the walls or some security systems. The fort was built by Chhatrapati Shivaji Maharaj. Also the temple of Chakreshwar is of great faith for many people. It is said that at chakreshwar the Dashratha (Shri Ram’s father) was battling against rakshasa at that time wheel of his ratha (vehicle) was stucked in mud, and the pond of chakreshwar and at that time Kaikayee helped him to get it out and this is the reason why Dashratha gave her three war (wishes)

The automotive sector is very prominent in and around Chakan MIDC, Pune. All sectors of the automotive industry are represented, right from two – wheelers and auto – rickshaws, to cars, tractors, tempos, excavators and trucks. To name a few are; Bajaj Auto, Tata Motors, Volkswagen, Mercedes Benz, General Motors, Force Motors, JCB, etc. Even ancillary units are gathering momentum in and around this domain.
Suggested Routes:

From Mumbai: Take expressway and drive up to Talegaon, take Talegaon – Chakan Road. Locate MIDC Chakan next to Bajaj Auto Chakan near Mahalunge Village and reach the Venue.

From Nashik: Take Nashik Pune Highway, drive up to Chakan Chowk, take right turn from Chakan Chowk onto Chakan – Talegaon Road. Locate MIDC Chakan near Mahalunge Village and reach the Venue.

From Pune Airport: Take Nagar road to reach Yerawade Bridge, then Bombay Sappers, Vishrantwadi on DRDO Dighi road. From Dighi – Alandi Road take turn near to Alandi to reach Bhosari Chowk on Pune – Nashik Highway. Drive up to Chakan Chowk, take left turn from Chakan Chowk onto Chakan – Talegaon Road. Locate MIDC Chakan near Mahalunge Village and reach the Venue.

From Pune Junction or Shivaji Nagar Railway Station: Reach College of Engineering Chowk. Take old Pune – Mumbai Highway. Reach Nashik Phata. Take Pune – Nashik Highway to reach Chakan Chowk, take left turn from Chakan Chowk onto Chakan – Talegaon Road. Locate MIDC Chakan near Mahalunge Village and reach the Venue.

Venue:

ARAI - Forging Industry Division

(Affiliated to Ministry of Heavy Industries & Public Enterprises, Govt. of India)

ARAI-Forging Industry Division, B-16/1, MIDC Chakan, Pune 410 501 Maharashtra, India

Tel.: +91-02135-660837, Visit: http://fid.araiindia.com