

Conference on Rubber Testing & CAE Simulation

29-30th January 2024
@ Bangalore India

Pre-Conference Workshops

Workshop 1 :

Hyperelastic Material Modeling and Simulation

Workshop 2 :

Molecular Dynamics & RVE Simulation based
and Material Characterisation

Workshop 3 :

Rubber Durability

Workshop 4:

Best Practices of Rubber Material Testing for
Strength and Durability

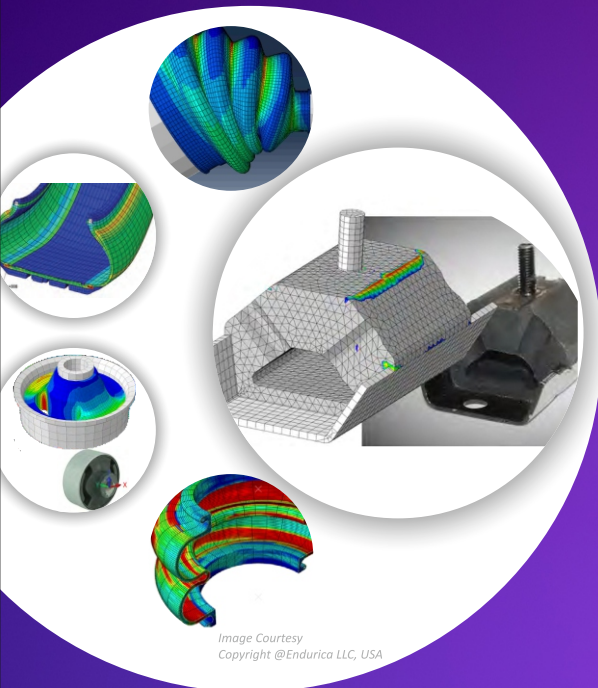


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About the Conference

Growing market is demanding more engineered products in a shorter design cycle, with longer life, durable, reduced cost, with better performance and competitive. This encourages designers, researchers to explore more and more realistic solutions, techniques and procedures to ensure the consumer demand is achieved. Material in Design plays a major role in the design cycle innovation, leading to find better, smarter, cheaper material along with new product innovation design techniques, innovative manufacturing technologies and in-service treatments.

Rubber / elastomer-based products have become an integral across various industries due to their unique properties and ability to handle nonlinear behavior. Some key areas where rubber and elastomers play a crucial role include:

Automotive Industry: Rubber and elastomers are extensively used in tyres, engine mounts, seals, gaskets, hoses, and various other components. Their flexibility, durability, and resistance to deformation make them ideal for absorbing vibrations and shocks, enhancing vehicle performance and safety.

Aerospace Industry: These materials are utilized in aircraft components such as landing wheel tyres, seals, gaskets, O-rings, and vibration dampers due to their ability to withstand extreme temperatures, resist corrosion, and to maintain flexibility under varying conditions.

Consumer Goods: From household items in kitchen appliances like pressure cooker gaskets, seals, bush and gears in mixture, gaskets in plumbing fixtures, to sports equipment like shoe soles and protective gear since rubber and elastomers provide cushioning, flexibility, and shock absorption properties.

Medical Devices: Elastomers are used in various medical applications like implants, surgical gloves, seals and tubing due to their biocompatibility, flexibility, and sterilization capabilities.

Industrial Designs: In various industrial equipment and machinery, rubber and elastomers are employed in seals, gaskets, flexible flanges, couplings and vibration isolators to reduce noise, absorb shocks, and maintain functionality under varying conditions.

The nonlinear behavior of rubber and elastomers, characterized by their hyper-elasticity properties, allows them to deform & retain their original shape and size, making them suitable for applications where resilience and flexibility are required. These unique properties contribute significantly to the advancement and efficiency of products across diverse industries.

This conference aims to create a platform for rubber material characterisation, testing and simulation community to discuss on the material preparation, testing and computational modeling, there will be

- Keynote talks from national and international experts
- Pre-conference workshops
- Panel discussions
- Testing, Simulation and Material Technology Demonstration

Spectrum of topics covered

- > Material Testing and Calibration
- > Material Modelling and Simulation
- > Finite Element Analysis (Hyper-elastic, Viscoelastic)
- > Fatigue, Durability Testing
- > Fatigue Life Computation
- > Failure and Fracture Studies
- > In-situ measurement
- > Duty Cycle Development
- > Ageing Studies
- > Creep Fatigue Interaction
- > Manufacturing Process Influence
- > Temperature influence on rubber
- > Rubber Part Manufacturing Process & Tooling
- > Digital Transformation of Rubber Parts Making & Mass Customisation
- > Innovations in rubber technology

Call for Presentations

Send abstract of your presentation to
info@rubbercae.com, limited slots !
Last date : 20-Dec-2023

Invited Speakers (*Partial List* - Alphabetical Order)

Experts will join in Hybrid mode (Virtual & Physical)



Dr. P. Annadurai

Scientist F, Head (Materials Science)
NPOL, DRDO, Thrikkakara, Kerala, India



Dr. K. V. Mohankumar

Assistant Professor
School of Mechanical Engineering
Vellore Institute of Technology
Vellore, India



Prof. U. Chandrasekhar

Chief Research Officer - Cambrian
Innovation Labs & Adjunct Faculty CPDM IISc
(Former) Additional Director - GTRE DRDO
& Director General - IE(India)



Prof. Prasanth Raghavan

Professor and Head
Department of Polymer Science
and Rubber Technology (PSRT)
Cochin University of Science and
Technology (CUSAT), Cochin, India



Dr. Christian Kipscholl

President
Coesfeld GmbH & Co. KG
Germany



Mr. Prashanth A R

Director
Altair Engineering India Pvt Ltd.,
Bangalore, India



Dr. Dibyendu Sekhar Bag

Scientist-'G'/Additional Director
Head, Polymers and Rubber Division
DMSRDE (DRDO), Kanpur, India



Dr. Ramanujam Narayanan

Technical & Business Development
Hexagon, India



Dr. T Jagadish

Director - R&D
DHIO Research & Engineering Pvt Ltd.,
Bangalore, India



Mr. Sharad Goyal

Head - Advanced Engineering
CEAT Limited, Vadodara, India



Dr. Kasilingam Rajkumar

Director
Indian Rubber Manufacturers Research
Association (IRMRA), Thane, India



Dr. SACHCHIDANAND DAS

Additional Director
DRDO, Secunderabad



Mr. Kumaraswamy S

Director - Simcenter portfolio
Simulation and Test solutions & Services Practice
SIEMENS Digital Industries Software
Bangalore, India



Dr. Taku Ozawa

Manager
Material Simulation Team
JSOL Corporation, Japan



Dr. Koji Yamamoto

Technology Specialist &
Developer of Multiscale.Sim
CYBERNET SYSTEMS CO.,LTD. Japan



Dr. Tim Hunter

Founder
Wolf Star Technologies, LLC, USA



Professor (Dr) MHASKE S. T.

Dean, Off-Campuses, Professor & HEAD
Dept. of Polymer & Surface Engineering,
Institute of Chemical Technology, Mumbai
Mumbai, India



Dr. Will Mars

President
ENDURICA LLC, USA

About Organisers



India Science Foundation (ISF) is a non-profit organisation working on promotion of Science, Engineering & Technology. India Science Foundation organises training programs, awareness programs, Conferences, seminars, workshops for different learning levels. It has been active in organizing Industry-Institution interactions and coordinating the students innovations with industrial requirements. India Science Foundation has been active in promoting basic science based research from grass route level to industrial research. India Science Foundation identifies talented science students, young engineers, innovators and their innovations, award them for their excellence in the field and supports to make the technology commercialized, by bringing the interested industry to their door step.



NAFEMS is the International Association for the Engineering Analysis Community & it operates as an independent, not-for-profit association. The scope of its activities encompasses all simulation technology, including Finite Element Analysis and Computational Fluid Dynamics. As new application areas and techniques constantly evolve, NAFEMS becomes involved to create awareness of new analysis methodologies, deliver appropriate education and training, simulate the adoption of best practices and effective use of technology by offering a platform for continuous professional development. NAFEMS and its members are involved in the application of many different types of engineering simulation covering both products and processes. Membership exceeds 1000 corporate members from over 52 different countries.

www.nafems.org



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> **Fatigue, Durability and Fracture Mechanics** : Metal Fatigue, Polymer Fatigue, Load Calculations, Reliability Studies, 3D Crack Growth Analysis, Failure and RLA Studies

> **Computational Fluid Dynamics** : 3D CFD, 1D CFD Simulation, System Level Evaluation, Heat Transfer, Mass Transfer, Phase Transfer, Reaction Kinetics, Multiphase, Multiphysics Simulation

> **Manufacturing Process Simulations**: Casting, Forging, Extrusion, Rolling, PM, Sheet Forming, Heat Treatment Applications, Injection Molding, Composite Modeling and simulation

> **Material Modeling and Characterisation**: Atomistic Modeling / DFT/Molecular Dynamics / RVE Modelling Multi-scale Modeling

> **Composite Material** : Material Characterization Product design, Manufacturing Simulation, Failure Studies

Registration FormStudents ☐Industry ☐Academic ☐

Name

Designation

Company / College

Phone

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Mobile

Email

Address

Topic of Interest

Signature and Seal

Conference Registration Fee :

Industry : INR 5000.00 + Tax

Academic Faculty & Research Scholars : INR 4000.00 + Tax

Graduate and Masters Students : 2500.00 + Tax

Link to register : <https://pages.razorpay.com/rubbercaeIndia2024>**RubberCAE-2024**

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