

# TRIBOINDIA 2020

## Program Schedule



Room1



Room 2



Room 3

### Room-1 link

<https://tinyurl.com/Triboindia2020-R1>

<https://gpeducation.zoom.us/j/94476509082>

### Room-2 link

<https://tinyurl.com/Triboindia2020-R2>

<https://zoom.us/j/92624592024>

### Room-3 link

<https://tinyurl.com/Triboindia2020-R3>

<https://zoom.us/j/9461079874>

## DAY 1: December 10, 2020

<b>09:30 – 10:45</b>	<b>Inaugural Session (Room 1)</b>
<b>Welcome Address</b>	Prof. M. Cheralathan, Head, Mechanical Engineering, SRMIST
<b>About the Conference</b>	Dr. Shubrajit Bhaumik, Jt. Organizing Secretary, TRIBOINDIA 2020
<b>About TSI</b>	Dr. Barun Chakrabarti, Vice President, TSI
<b>Presidential Address</b>	Prof. C. Muthamizhchelvan, Pro Vice Chancellor, SRMIST
<b>Felicitation</b>	Prof. T.V. Gopal, Dean CET, SRMIST
<b>Felicitation</b>	Prof. D. Kingsly Jeba Singh, Chairperson, Mechanical Engineering, SRMIST
<b>Inaugural Address</b>	Prof. Ali Erdemir, Texas A&M, USA, President, International Tribology Council “Frontiers research on super lubricity: A historical perspective”
<b>Vote of thanks</b>	Dr. P. Nandakumar, Head, Design Division, Dept. of Mechanical Engineering, SRMIST
<b>10:45 – 12:30</b>	<b>Plenary Session I (Room 1)</b>
<b>Plenary Lecture 1</b>	The process of wear; A synergistic process – Prof. S.V. Kailas, IISc Bengaluru, India
<b>Plenary Lecture 2</b>	Tribology of traction motor bearings of electric vehicles – Prof. R. Gnanamoorthy IIT Madras, India
<b>12:30 – 13:00</b>	<b>Break</b>
<b>13:00 – 16:00</b>	<b>Technical Session 1A (Room 1): Surface Engineering and Tribology I</b>
<b>Keynote Lecture</b>	Malaysian agricultural waste as new sustainable tribological materials – Prof. Md. Fadzli Bin Abdollah, Universiti Teknikal, Malaysia
<b>Contributory Papers</b>	T003: Ecofriendly and facile fabrication of superhydrophobic aluminum alloy Jayanth Ivvala, Priya Mandal, H S Arora, H S Grewal Department of Mechanical Engineering, Shiv Nadar University, Gautam Budh Nagar, India
	T009: Medico-tribological investigation of pulsed plasma nitrided austenitic stainless steel S.C. Atul and S. Ilaiyavel Department of Mechanical Engineering, Sri Venkateswara College of Engineering, Sriperumbudur, India
	T011: Influence of mechanical properties of coating and substrate on wear performance of h-DLC or tin-coated AISI 5140 steel E R Sivakumar, P Senthilkumar, M Sreenivasan, Ram Krishna Department of Mechanical Engineering, PACE Institute of Technology & Sciences, Ongole, India
	T018: Correlating the stress state with morphological and tribological properties of thin coatings Viorel Paleu, Sergiu Spînu, Corneliu Munteanu, Shubrajit Bhaumik, Bogdan Istrate, Gelu

	Ianuș , Cornelia Cîrlan Paleu , Mechanical Engineering, Mechatronics and Robotics Department, "Gheorghe Asachi" Technical University of Iasi, Romania & SRM Institute of Science and Technology, Kattankulathur,India
<b>Keynote Lecture</b>	EHL of Non-conformal contacts and isotropic surface textures – Dr. G. Rajaram, Thejo Engineering Limited, India
<b>Contributory Papers</b>	T019: Tribological characteristics of thermomechanically processed 7075 Al alloy through nano-scratch characterization Souriddha Sanyal, Ashoktaru Chakraborty, Angshuman Sarkar, Susanta Kumar Pradhan <sup>4</sup> , Utpal Madhu, Sumit Chabri, Arijit Sinha,* Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, India
	T027: Influence of powder feed rate on the slurry abrasive wear behavior of Co-Cr alloys deposited on SS-316l material. A.R. Bhoskar*, V.D. Kalyankar, D.D. Deshmukh, H.V. Naik Mechanical Engineering Department Sardar Vallabhbhai National Institute of Technology, Surat – 395007, India
	T030: Molykote – anti friction lubrication coating process establishment on solenoid armature and its tribo performance M.Rajkumar , M A Sai Balaji , C.Venkatachalam and Baskara Setupathy BS Abdur Rahman Crescent Institute of science & technology, Vandalur, Chennai –600048, India
<b>13:00 – 16:00</b>	<b>Technical Session 1B (Room 2): Wear Behavior of Alloys &amp; Composites I</b>
<b>Keynote Lecture</b>	On the correlation of wear behaviour with subsurface characteristics of die steel – Dr. Debdulal Das, IEST Shibpur, India
<b>Contributory Papers</b>	T002: Review on optimization of process parameters for hybrid metal matrix composites (HMMC) SRM Institute of Science and Technology, Department of Mechanical Engineering, Kattankulathur - 603203, India
	T005: Tribological characterization of iron based self-lubricating composite under dry sliding conditions Pranav Dev Srivivas *, M. S. Charoo Mechanical Engineering Department, NIT Srinagar, INDIA
	T026: Tribo-mechanical behaviour assessment of magnesium based fibre metal laminates I. Infanta Mary Priya, SRM Institute of Science and Technology, Kattankulathur, Chennai, India
	T039: Fabrication and optimization of wear parameters of B <sub>4</sub> C reinforced Al2024 nano metal matrix composites B.Naga Babu ,Ch.Rajeswari*, Ch.Naveen Reddy ,Dr.N.Kiran Kumar Department of Mechanical Engineering, Ramachandra College of Engineering, Eluru, India
<b>Keynote Lecture</b>	Research advances and development trend on magnesium alloys and composites - Prof. A. Elaya Perumal, Anna University, India
<b>Contributory Papers</b>	T044: Wear behaviour of magnesium hybrid composite reinforced with Al <sub>2</sub> O <sub>3</sub> and MoS <sub>2</sub> particles through PM route M. Thomas Victor <sup>1</sup> *, G. Selvakumar <sup>2</sup> , P. Ravindran <sup>1</sup> , S. Surendarnath <sup>3</sup> Department of Mechanical Engineering, St. Mother Theresa College of Engineering, 628 103 Thoothukudi, India
	T045: Cavitation erosion behavior of MoNbTiZr medium entropy alloy Anirudh Chauhan, H.S. Arora, H.S. Grewal* Surface Science and Tribology Lab, Department of Mechanical Engineering, Shiv Nadar University, Gautam Budh Nagar, India
	T053: Erosion wear behaviour of A357/fly ash composites Tanusree Bera, Ved Prakash, S.K. Acharya Department of Mechanical Engineering, National Institute of Technology Rourkela, India
	T57: Tribological characterization of aluminium metal matrix composites Prakhar Mishra, Santanu Kumar Karmakar and Santanu Sardar Department of Mechanical Engineering, Indian Institute of Engineering Science and Technology, Shibpur India
<b>13:00 – 16:00</b>	<b>Technical Session 1C (Room 3): Lubrication I</b>
<b>Keynote Lecture</b>	Graphene: Next generation lubricant additive - Md. Khalid, Sunway University, Malaysia
<b>Contributory Papers</b>	T006: Investigating graphite added glycerol as metalworking fluid in turning of steel Ganesh S, Shubrajit Bhaumik Department of Mechanical Engineering, SRM Institute of Science and Technology, Chennai, India
	T008: Tribological properties of h-BN additivated lubricants G.R.P Singh, Tata Steel Limited, Jamshedpur 831 001, India

	T040: Comparative study of thermo-physical and tribological properties of coconut oil based nano lubricant using CuO nanoparticle and MoS <sub>2</sub> nanoparticle
	T041: Addition of surfactant in CeO <sub>2</sub> nanoparticles and its synergistic effect on diesel fuel
<b>Keynote Lecture</b>	Oil vs. grease behaviour in rolling/sliding contacts – on the beneficial thickener effects: with a focus on wind turbine application - Dr. Balasubramaniam Vengudusamy, Klueber Lubrication, Germany
<b>Contributory Papers</b>	T042: Friction and wear behaviour of non-edible oil based lubricant Rajib Bhowmik, Nabajit Dev Choudhury Girijananda Chowdhury Institute of Management and Technology, Guwahati, Assam, India
	T043: The enhanced tribological performance of hexagonal boron nitride (hBN) nanoparticle additives in various type of engine oil N. Thachnatharen, M. Khalid, A. Arulraj, N. Sridewi Faculty of Defence Science and Technology, National Defence University of Malaysia, Kuala Lumpur, Malaysia
	T047: Flash temperature of sliding contacts - a comparative study Santanu Sardar, Arindam Roy Goswami and Prakhar Mishra Center of Excellence, Indian Institute of Engineering Science and Technology, Shibpur, Howrah – 711103, West Bengal, India

## DAY 2: December 11, 2020

<b>9:30 – 11:30</b>	<b>Technical Session 2A (Room 1): Surface Engineering and Tribology II</b>
<b>Contributory Papers</b>	T046: Wear behaviour of AA6061 processed by equal channel angular pressing Kondaiah Gudimetla, S. Surendarnath, M. Sreenivasan and B Ravisankar Department of Mechanical Engineering, Pace Institute of Technology and Sciences (Autonomous), Ongole - 523 272, India
	T055: Wear, scratch and corrosion resistance of aluminide coating prepared on ferritic martensitic steel J. Purushothaman, S. K. Albert, R. Ramaseshan N. Gowrishankar Saveetha School of Engineering, Chennai 600048, India
	T067: Reciprocating sliding behaviour of solid lubricant coating over modified titanium alloy surfaces V.M. JOTHIPRAKASH, Dr.M. PREM ANANTH, Dr.M.VETRIVEL SEIZHEN Assistant professor, Dept. of mechanical Engineering, Easwari Engineering College, Ramapuram, India
	T080: Wettability of hydrophobic micro-dimpled HSS surfaces Manoj Nikam, Tribeni Roy, Sachin Mastud Department of Production Engineering, VJTI Matunga, Mumbai, India
	T081: Wear behaviour of friction stir welded AA7075 and AA6063 aluminium alloys S.D. Kumar R. Pugazhenth G. Swaminathan Department of Mechanical Engineering, Vels Institute of Science and Technology and Advanced Studies, Chennai-117
	T082: The effect of deep cryogenic treatments on the microstructure and wear behaviour of 3.6C-2.8Si ductile cast iron subjected to austempering Rinesh K, Vimal Edachery, Manesh K K, Aashish John Department of Mechanical engineering, Government college of engineering, Thrissur, 680009, Kerala, India
	T083: Prediction of suitable heat treatment for H13 tool steels by application of thermal shock fatigue cycle Palani Karthikeyan and Sumit Pramanik Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, India
	<b>9:30 – 11:30</b>
<b>Keynote Lecture</b>	Tribological investigation of white etching area (WEA) formation under severe sliding condition in bearing steel - Dr. P. Ramkumar, IIT Madras, India
<b>Contributory Papers</b>	T63: Effect of ball milling duration on tribological properties of CNT reinforced Al matrix composites Murugesan R, Gopal M and Murali G Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, India
	T064: Machine learning approaches for analyzing tribological behavior of aluminium matrix composites Titov Banerjee, Swati Dey, Aluru Praveen Sekhar, Partha Dey,

	<p>Shubhabrata Datta, Debdulal Das Birbhum Institute of Engineering and Technology, Siuri, India</p> <p>T075: Assessment of mechanical and tribological characteristics of A356 reinforced with x wt% CaB<sub>6</sub> composites Kaviyarasan.K, Soundararajan.R, Asrith Raj, Aswinth Kannan.S, Ayyankalai.P Department of Mechanical Engineering, Sri Krishna College of Technology, Coimbatore – 641042, India</p> <p>T076: Assessing the tribological behaviour of stir casted AA6063 with x wt% ZrSiO<sub>4</sub> and 6wt% TiB<sub>2</sub> hybrid composites Kaviyarasan.K, Soundararajan.R, Robin Roger.R, Rudresh.S, Sharfaraaz Ismail.R, Sankar Prasanth.V Department of Mechanical Engineering, Sri Krishna College of Technology, Coimbatore – 641042, India</p> <p>T079: Dry and wet tribology of carbon nanotubes in Al/steel and AMMC/steel sliding contacts Harpreet Singh, Hiralal Bhowmick Mechanical Engineering Department, Thapar Institute of Engineering &amp; Technology, Patiala, India</p> <p>T090: Wear performance analysis using worn surfaces of different aluminium alloy composites - A comparative study Sabah Khan, Department of Mechanical Engineering, Faculty of Engineering &amp; Technology, Jamia Millia Islamia, New Delhi, India</p>
<b>9:30 – 11:30</b>	<b>Technical Session 2C (Room 3): Lubrication II</b>
<b>Keynote Lecture</b>	Nanolubricants dispersed with graphene and its derivatives: an assessment and review of the tribological performance – Dr. N.C. Murmu, CSIR-CMERI, India
<b>Contributory Papers</b>	<p>T048: Surface morphology studies in end milling of AA7075 under MQL environment using tri-hybridized carbonaceous nano cutting fluids S. Vignesh and U. Mohammed Iqbal Dept. of Mechanical Engineering, College of Engineering and Technology, Faculty of Engineering and Technology, SRM Institute of Science and Technology, Vadapalani campus, No.1 Jawaharlal Nehru Road, Vadapalani, Chennai, TN, India</p> <p>T054: The role of surface roughness frequencies in controlling lubricant wettability in hierarchical engineering surfaces Vimal Edachery, Satish V. Kailas Department of Mechanical Engineering, Indian Institute of Science, Bangalore, India</p> <p>T62: Evaluation of tribological performance of coconut oil-based grease with hybrid MoS<sub>2</sub>/SiO<sub>2</sub> additives under boundary lubrication regime Sooraj Singh Rawat, A. P. Harsha, Om P. Khatri Department of Mechanical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi – 221005, India</p> <p>T069: Viscous and molecular effects of fatty acid concentrations in thin film lubrication flow D. V. Srikanth Mechanical Engineering Department, SNIST, Ghatkesar, Hyderabad, Telangana</p> <p>T072: Formulation and tribological evaluation of vegetable oil based grease Ananthan D Thampi, Rani S Advanced Tribology Research Centre, Department of Mechanical engineering, College of Engineering Trivandrum, India</p>
<b>11:30 – 12:30</b>	<b>Business Talks (Room 1)</b>
	(1) Optimol Instruments Prüftechnik GmbH, Germany
	(2) Ducom Instruments, India
	(3) Rtec Instruments, USA
<b>12:30 – 13:00</b>	<b>Break</b>
<b>13:00 – 16:00</b>	<b>Technical Session 3A (Room 1): Surface Engineering and Tribology III</b>
<b>Keynote Lecture</b>	Lubrication performance of hydrostatic / hybrid textured fluid film bearings - Prof. Satish C Sharma, IIT Roorkee, India
<b>Contributory Papers</b>	<p>T084: Understanding the wear behavior of nylon coated steel surfaces in presence of commercial greases</p> <p>T086: Evaluation of PEEK to PEEK friction welded joint properties Senkathir.S., Sumit Pramanik., and Manidipto Mukherjee Department of Mechanical Engineering, SRM Institute of Science and Technology, Chennai-603203, India</p> <p>T087: Diamond like carbon coating on Y-TZP for dental implant. Ashwini, Davidson J.D., Vellore Institute of Technology, Chennai campus, Vandalur Kelambakkam road, Chennai, India</p>

	<p>T096: Study of tribological properties of multilayer gradient Ti/tin coating.</p> <p>T101: Influence of countersurface roughness on two-body abrasive wear of hastelloy C-276 in dry sliding conditions Aashish John, Vimal Edachery, Arun Augustin, Anson Jose, Joel Job, Sidharth Sunil and George Tony Department of Mechanical Engineering, Mar Baselios College of Engineering and Technology, Trivandrum-695015, India</p> <p>T102: Transitions in two-body microscale abrasive wear of hastelloy C-22 superalloy Aashish John, Vimal Edachery, Arun Augustin, Adeep Abdul Majeed, Astin Kalathinga Thankachan, Muhammed Raazi Rasheed and Able Anto Department of Mechanical Engineering, Mar Baselios College of Engineering and Technology, Trivandrum-695015, India</p> <p>T104: Micro tribological properties of Ti-6Al-4V in comparison to Ti-6Al-4V shot-blasted Vimal Edachery, Aashish John, Rohan Sanjay Patel, Mohamed Waseem, Satish V Kailas Department of Mechanical Engineering, Indian Institute of Science, Bangalore 560012, India</p>
<b>13:00 – 14:30</b>	<b>Technical Session 3B (Room 2): Wear Behavior of Alloys &amp; Composites III</b>
<b>Keynote Lecture</b>	Three-body abrasive wear property of a quenched and non-isothermally partitioned steel - Chiradeep Ghosh, Tata Steel Limited, India
<b>Contributory Papers</b>	<p>T091: Effect of reinforcements on graphite/TiO<sub>2</sub>/Al nanohybrid composites Y. Kishor Kumar Reddy, S. Althaf Hussain, N. Vamsee Krishna Reddy, SumitPramanik, and Shubrajit Bhaumik Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Kancheepuram – 603203, Chennai, Tamil Nadu</p> <p>T097: Assessment of mechanical properties for aluminium composites using rice husk ash as a reinforcement.</p> <p>T098: Evolution of mechanical and tribological behaviour of hybrid composites under dry and wet conditions R.Soundararajan, M.Manoj kumar, S.Mohammed navith, B.Kavinesh, J.K.Kishore kannan, M.Mugeshkumar Associate Professor, Mechanical Engineering, Sri Krishna College of Engineering and Technology, Coimbatore, Tamilnadu, India</p> <p>T100: The effect of sliding speed on dry sliding wear behavior of A356 alloy with minor additions of magnesium M. S. Prabhudev and S. A. Kori Selection Grade Lecturer, Dept of Mech. Engg, Govt. Polytechnic, Kalgi, Karnataka, India</p>
<b>14:30 – 16:00</b>	<b>Technical Session 3C (Room 2): Tribo-measurement</b>
<b>Keynote Lecture</b>	Importance of the study in fundamental wear mechanism and data analysis – Spatiotemporal mapping analysis - Prof. Kanao Fukuda, Malaysia-Japan IIT, Malaysia
<b>Contributory Papers</b>	<p>T60: New multi-sensing nanotribology test with electrical contact resistance and friction measurement Ben Beake, Tomasz Liskiewicz, Adrian Harris, Sam McMaster, Anne Neville Micro Materials Ltd, UK</p> <p>T085: Optimization of parameters of single point cutting tool for turning operation Aveek Chowdhury Bharati Vidyapeeth College of Engineering, Navi Mumbai, India</p> <p>T092: Development of test method to detect gear failure using vibration and ferrography analysis Rameshwar Chaudhary, Shubham Saini, Rahul Meshram, Sanker Bhadhavath, Rajendra Mahapatra, Ajay Kumar Harinarain, Veena Bansal, Deepak Saxena Indian Oil Corporation Ltd, R&amp;D Centre, Sector 13, Faridabad, India</p> <p>T093: Development of test method for evaluation of engine oils in horizontal and inclined planes with oil recirculation system in SRY- 5 Saurabh Mishra, Rameshwar Chaudhary, Sarita Seth, Sanker Bhadhavath, Rajendra Mahapatra, Ajay Kumar Harinarain, Veena Bansal, Deepak Saxena Indian Oil Corporation Ltd, R&amp;D Centre, Sector 13, Faridabad, India</p>
<b>13:00 – 14:00</b>	<b>Technical Session 3D (Room 3): Lubrication III</b>
<b>Contributory</b>	T073: Transesterification of blended vegetable oils as cutting fluids and prediction of

<b>Papers</b>	cutting forces using machine learning techniques E Sneha, G V S Karthik, S Rani Advanced Tribology Research Centre, Department of mechanical engineering, College of Engineering Trivandrum, India
	T074: A comparative study on the tribological performance of solid lubricants over PEEK polymer Dinesh Kumar P K, Venkatesh N, Balaji Rajendran, Sadam Hussain M Department of Aeronautical Engineering, Rajalakshmi Engineering College, Chennai 602105, India
	T088: Anti-wear behaviour of polyalphaolefins with oleic acid treated LaF <sub>3</sub> nanoparticles as an additive under extreme pressure conditions Homender Kumar <sup>1</sup> , A. P. Harsha <sup>1*</sup> Department of Mechanical Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi-221005, India
	T099: Tribological characterization of simarouba glauca biodiesel (SGME) with copper oxide nanoparticles
<b>14:00 – 16:00</b>	<b>Technical Session 3E (Room 3): Condition Monitoring</b>
<b>Keynote Lecture</b>	Sustainable efforts through lubrication: Balanced approach to performance and environmental acceptability - T.C.S.M Gupta, Apar Industries Ltd., India
<b>Contributory Papers</b>	SP001: Combination of analytical sciences with tribological quantities for an advanced condition monitoring A. Schneider and M. Woydt Optimol Instruments GmbH, D-81639 Munich, Germany
	T015: Ferrography – Specialized oil analysis for protection and diagnose gear and bearing deterioration Hemant Bari, Atul Deshpande, Suhas Patil Department of Maintenance Planning, Condition Monitoring Cell, Adani Electricity Mumbai Limited, Adani Dahanu Thermal Power Station, 2x250 Mw, Dahanu, Mumbai, INDIA.
	T017: Vibration damping analysis using MR fluid assisted worktable for drilling Vijaya A Department of Mechanical Engineering, SRM Institute of science and Technology, Kattankulathur-603203, India
	T070: Friction analysis of aircraft landing gears due to landing impact B. Sanjay, and S. Sivakumar SRM Institute of Science and Technology, SRM nagar, Kattankulathur, 603203, Kanchipuram, Chennai, TN, India
	T089: Experimental study to compare the performance of engine fueled with diesel and biodiesel blend on the basis of vibration signature analysis Ashok kumar S, Jitendra Yadav, Santosh kumar Kurre Mechanical Department, School of Engineering (SoE), University of Petroleum energy and Studies (UPES), Dehradun, Uttarakhand, India.
<b>16:00 – 18:00</b>	<b>Plenary Session II (Room 1)</b>
<b>Plenary Lecture 3</b>	Application of topological optimization methodology in hydrodynamic lubrication – Prof. A. Almqvist, Lulea University of Technology, Sweden
<b>Plenary Lecture 4</b>	Experimental analysis and modelling for reciprocating wear behavior of nanocomposite coatings – Prof. Z. Khan, Bournemouth University, UK
<b>Plenary Lecture 5</b>	Surface design against third body fretting-corrosion of electrical connectors – Prof. T. Liskiewicz, The Manchester Metropolitan University, UK

### DAY 3: December 12, 2020

<b>9:30 – 11:00</b>	<b>Plenary Session III (Room 1)</b>
<b>Plenary Lecture 6</b>	Roles of Nanoparticles in formation of tribofilm - Prof. Hong Liang, Texas A&M, USA
<b>Plenary Lecture 7</b>	The influence of double cardan joints kinematics and quasi-static effects on rolling bearings life in railway traction motors - Prof. Viorel Paleu, TUIASI, Romania
<b>11:00 – 12:30</b>	<b>Technical Session 4A (Room 1): Tribological Performance of Bearings I</b>
<b>Contributory Papers</b>	T004: Effect of eccentricity ratio on damping and stiffness coefficients for journal bearing with flexible liner taking micropolar lubrication Pikesh Bansal ABES EC GZB, India
	T013: Limiting load capacity analysis of FGM texture bump foil journal bearing

	<p>S Arokyia Agustin and T V V L N Rao Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur - 603203, India</p> <p>T021: Performance behaviors of micro-pocketed/textured tilting pad thrust bearings J. C. Atwal, R. K. Pandey Department of Mechanical Engineering, IIT Delhi, New Delhi -110016 India</p> <p>T025: Influence of span angle on the performance of hole-entry hybrid spherical journal bearing Adesh Kumar Tomar, Satish C Sharma Tribology Laboratory, Department of Mechanical and Industrial Engineering, Indian Institute of Technology, Roorkee, 247667, India</p> <p>T031: Influence of textured shapes in hybrid slot entry journal bearing Krishnkant Sahu, Satish C. Sharma Tribology Laboratory, Mechanical and Industrial Engineering Department, Indian Institute of Technology Roorkee, India</p> <p>T032: Study of a hybrid spherical capillary compensated thrust bearing Nitin Agrawal, Satish C. Sharma Department of Mechanical and Industrial Engineering, Tribology Laboratory, Indian Institute of Technology, Roorkee, 247667, India</p>	
<b>11:00 – 12:30</b>	<b>Technical Session 4B (Room 2): Polymer Composites &amp; Friction Materials I</b>	
<b>Contributory Papers</b>	<p>T001: Indentation behaviour of cellulosic fibres/fly ash incorporated polymer composites at sub-micron scale Bhabatosh Biswas, Nillohit Mukherjee, Arijit Sinha School of Materials Science and Engineering, Indian Institute of Engineering Science and Technology, Shibpur, India</p> <p>T012: Tribological /mechanical investigations of additive manufactured polymer composites Kundeti Venkata Kalyani SRM Institute of Science and Technology Kattankulathur, Chengalpattu, Tamilnadu, 603203, India</p> <p>T014: Effect of zirconium silicate and mullite with three different particle sizes on tribological behavior of non-asbestos organic (NAO) brake pad P.Baskara Sethupathi and J.Chandradass Centre for Automotive Materials, Department of Automobile Engineering, SRM Institute of Science and Technology, Kattankulathur, 603203, India</p> <p>T020: Synergic effect of metallic fillers as heat dissipaters in tribological performance of a non-asbestos disc brake pad Asrar Ahmed.K, Rasool Mohideen.S, Saibalaji M.A B.S. Abdur Rahman Crescent Institute of Science and Technology, India</p> <p>T022: Tribological and mechanical performance report of epoxy-resin composites reinforced with multi-walled carbon nanotubes Rittin Abraham Kurien, D Philip Selvaraj, M Sekar, Chacko Preno Koshy Department of Mechanical Engineering, Karunya Institute of Technology and Sciences, Coimbatore-641114, India</p> <p>T023: Influence of Alkali treatment in Areva Javanica fiber and its effect in mechanical, physical and tribological behaviour in NAO brake friction composites Md. Javeed Ahmed, M A Sai Balaji, B Suryarajan and Rajakumar S. Rai BS Abdur Rahman Crescent Institute of science &amp; technology, Chennai – 48, India</p>	
	<b>11:00 – 12:30</b>	<b>Technical Session 4C (Room 3): Bio-tribology I</b>
	<b>Keynote Lecture</b>	Role of biomaterials for hip joint replacement applications - Amar Patnaik, MNIT Jaipur, India
	<b>Contributory Papers</b>	<p>T007: Tribological investigations of biological interfaces: from cartilages to catheters Kartik Pondicherry, Mayank Varshney Anton Paar India Pvt. Ltd., Udhog Vihar 582, Gurugram, Haryana, 122016</p> <p>T016: Investigating the tribological properties of HAp/Cu-HAp-POM composites. Anik Banerjee, Rajeswar Bandyopadhyay, Tanveer Ahamed Rohit, Shubrajit Bhaumik Tribology and Surface Interaction Research Laboratory, Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur India 603203, India</p> <p>T028: Mechanical behaviour of hydroxyapatite dispersed sulphonated polyetheretherketone based composite membrane at microstructural length scale Tanmoy Chakraborty, Sunit Sarkar, Bhabatosh Biswas, Shubhabrata Datta, Arijit Sinha M N Dastur School of Materials Science and Engineering, Indian Institute of Engineering Science and Technology, Shibpur, Howrah 711103, West Bengal, India.</p> <p>T033: Study and optimization of wear characteristics of PLA/PMMA biopolymer composites T.Gopi, K.Duraivelu</p>

<b>12:30 – 13:00</b>	<b>Break</b>
<b>13:00 – 15:00</b>	<b>Technical Session 5A (Room 1): Tribological Performance of Bearings II</b>
<b>Contributory Papers</b>	T034: On the behaviour of asymmetric conical hole-entry hybrid journal bearing system Abhishek Kumar, Satish C. Sharma Tribology Laboratory, Mechanical and Industrial Engineering Department, Indian Institute of Technology, Roorkee-247667, India
	T035: FEM analysis of a porous hybrid journal bearing under the turbulent regime Abhishek Kumar, Satish C. Sharma Tribology Laboratory, Mechanical and Industrial Engineering Department, Indian Institute of Technology, Roorkee-247667, India
	T036: Effect of semi-cone angle on the performance of hybrid slot-entry conical journal bearing Narendra Kumar, Satish C. Sharma Department of Mechanical and Industrial Engineering, Tribology Laboratory, Indian Institute of Technology, Roorkee, 247667, India
	T037: Effect of non-Newtonian lubricant on the linear and non-linear stability analysis of the double-layered porous journal bearing Shitendu Some, Sisir Kumar Guha Department of Mechanical Engineering, National Institute of Technology Sikkim, Ravangla, South Sikkim 737139, India
	T050: Tribological performance analysis of multi-lobe hydrodynamic journal bearing with nano-additives in lubricants
	T61: Housing light-weighting and its impact on bearing performance Harpreet Singh, Jeff Lubben, Jeremy J. Wagner John Deere, India
	T078: Analysis of thermoelastohydrodynamic lubrication of journal bearing including the effect of surface roughness and cavitation Nagarjuna Baineni, Nitin Borse, Shrinivas Chippa Mechanical engineering department, Vishwakarma Institute of Technology, Pune, India
<b>13:00 – 15:00</b>	<b>Technical Session 5B (Room 2): Polymer Composites &amp; Friction Materials II</b>
<b>Contributory Papers</b>	T024: Tribo-mechanical behavior of basalt fiber reinforced polylactic acid and polypropylene hybrid polymer composites
	T029: Tribological behavior of cera –metallic clutch friction material in agriculture tractor applications. C.Venkatachalam, M A Sai Balaji and Baskara Setupathy BS Abdur Rahman Crescent Institute of science & technology, Vandalur, Chennai – 600048, India
	T038: A review on tribological behavior of silicon nitride based ceramics S.Shankar, R.Nithyaprakash, G.Abbas, Alokesh Pramanik, Animesh Kumar Basak Kongu Engineering College, Erode, TamilNadu, INDIA
	T051: Influence of aluminium foam on dry sliding wear behaviour of glass fiber reinforced epoxy composites S.Madhan Kumar, K.Sivakumar, J.Chandradass Department of Automobile Engineering, SRM Institute of Science and Technology, India
	T058: Tribological characterisation of banana/ sisal composites and hybrid composites: A review Upendra Sharan Gupta, Sudhir Tiwari, Rajeev Namdeo, Siddhartha Chaturvedi, Piyush Gore, Ishant Bhole, Sourabh Kekan Department of Mechanical Engineering, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore (453111), India
	T066: Newly developed multiscale composites for tribological applications under water-based lubrication
	T094: Wear and morphological analysis on basalt/sisal hybrid fiber reinforced polylactic acid composites Govindan P, Arul Jeya Kumar A, I. Ashok Kumar, Abburi Lakshman Kumar Department of Mechanical Engineering, Mailam Engineering College, Mailam, Villupuram 603203, Tamil Nadu, India
T095: Thermo-mechanical analysis of ventilated and solid disc brake pad model	
<b>13:00 – 15:00</b>	<b>Technical Session 5C (Room 3): Bio-tribology II</b>
<b>Contributory Papers</b>	T056: Wear evaluation of polycarbonate urethane core for artificial disc in lumbar region J. Daniel Glad Stephen, M.Prakash Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai- 603203



	<p>T59: AI based design of hybrid UHMWPE composites with enhanced tribo-mechanical behavior  A. Vinoth and Shubhabrata Datta  Department of Mechanical Engineering, SRM institute of Science and Technology, Kattankulathur, Chennai 603203, India</p>
	<p>T065: Bio-tribological performance of medical grade UHMW polyethylene based hybrid composite for cartilage replacement  Omar Hussain*, Babar Ahmad, Shahid Saleem  Mechanical Engineering Department, National Institute of Technology Srinagar, Jammu &amp; Kashmir, India</p>
	<p>T068: New polycaprolactone polymer coated magnesium biodegradable alloy for cardiac stent application.  S.Gnanavel, K.R.Harinivas, B.Sathyamoorthy, S.Livinesh, S.Sobana Shri  Department of Biomedical Engineering, SRM institute of science and technology, Chennai, Tamilnadu, India</p>
	<p>T071: Temperature and load influence on adhesion wear in dry sliding contact in vacuum condition  Basant Lal, Abhijit Dey, M.F. Wani  Center of Advanced Tribology, National Institute of Technology, Srinagar-19006, India</p>
	<p>T077: Electrochemical and biological behaviour of near <math>\beta</math> titanium alloy for biomedical implant applications  S. Gnanavel, S. Ponnusamy, Kirthana Sivakumar, Priyadarshni D  Department of Biomedical Engineering, SRMIST, Chennai, Tamilnadu, India</p>
	<p>T103: Wear performance of UHMWPE and PCU artificial disc materials  J. Daniel Glad Stephen, M.Prakash, Nirab Kumar Das, Shubham Shukla  Department of Mechanical Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai- 603203, India</p>
<b>15:00 – 16:00</b>	<b>Valedictory Session (Room 1)</b>