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| 13.45-15.45                               |  | Parallel Session – 1A<br>[Galileo Galilei Hall] | 23.08.2023 |
| Design Aspects on Deformation and Failure |  |   |            |
| Session Chair: U. Parthasarathy           |  |   |            |
| Invited Talk                              | <b>Thermal Hydraulic aspects Governing the Structural Design of FBR Components</b><br><b>U. Parthasarathy,</b><br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam</i>   |   |            |
| IC2023025                                 | Direct Displacement-Based Design Approach on LRB installed RC Frame,<br><b>Channabasaveshwar Chikmath,</b> <i>Chikmath Channabasaveshwar, Sandip A. Vasanwala.</i><br><i>Sardar Vallabhbhai National Institute of Technology, Surat.</i> |   |            |
| IC2023061                                 | TZM Alloy Job Carrier for High Temperature Vacuum Furnace,<br><b>Abhimanyu Bhardwaj,</b> <i>S. Singh, A.P.Singh, A.S. Padiyar, N.S. Yadav, Abhay Kumar G. Mundra.</i><br><i>Raja Ramanna Centre for Advanced Technology, Indore.</i>     |   |            |
| IC2023190                                 | A new approach to evaluate Ramberg-Osgood parameters for SS316LN using different types of specimens,<br><b>Sanjay Pandey,</b> <i>M.K.Samal, Sajish S.D.</i><br><i>Homi Bhabha National Institute, Mumbai.</i>                            |   |            |
| IC2023223                                 | Operating Experience of Snubbers in Indian Pressurized Heavy Water Reactors,<br><b>Rahul Mittal,</b> <i>H. K. Sonar , Lalit Sharma , A. Sharma , Braham Parkash.</i><br><i>Nuclear Power Corporation of India Ltd., Mumbai.</i>          |   |            |
| IC2023265                                 | Nuclear End-Shield Transportation using Rotating Fixture- an Engineering Innovation,<br><b>Vikram Sehgal,</b> <i>Dipesh Goyal, Rajesh Nakarani.</i><br><i>Nuclear Power Plant Equipment Business Unit, L&amp;T-HE, Hazira.</i>           |   |            |

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| 13.45-15.45                                     |   | Parallel Session – 1B<br>[Alan Arnold Griffith Hall] | 23.08.2023 |
| Experimental Studies on Deformation and Failure |   |  |            |
| Session Chair: Krishna N. Jonnalagadda          |   |  |            |
| Invited Talk                                    | Fracture Toughness of Freestanding Plasma Sprayed Yttria Stabilized Zirconia Coatings via In Situ Tensile Experiments<br><i>Krishna N. Jonnalagadda,</i><br><i>Indian Institute of Technology Bombay, Mumbai</i>  |  |            |
| IC2023197                                       | Fatigue Crack Initiation on Prototype Pipe Bends,<br><i>Suresh Kumar R, B. K. Nashine .</i><br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>  |  |            |
| IC2023083a                                      | Effect of Hydride Morphology on Fracture Behaviour of Zr-2.5%Nb Pressure Tube Material,<br><i>Rishi Kumar Sharma, A. Gopalan, R.N. Singh, D. Bhachawat, and S.M. Ingole .</i><br><i>Nuclear Power Corporation of India Limited, Mumbai.</i>   |  |            |
| IC2023104                                       | Evaluation of fracture resistance behavior of Alloy 690 material upto 1000°C,<br><i>Pankaj Kumar Sharma, M. K. Samal, A. Syed, J. Chattopadhyay.</i><br><i>Homi Bhabha National Institute, Mumbai.</i>  |  |            |
| IC2023187                                       | Fracture investigation at 300°C on carbon-steel and stainless-steel pipes of NPPs under cyclic loads,<br><i>M.K. Sahu, S.K. Gupta, Suranjit Kumar, P.K. Singh, M. Saravanan, S. Vishnuvardhan, A. Ramachandra Murthy, S. Parivallal.</i><br><i>Bhabha Atomic Research Centre, Mumbai.</i> |  |            |
| IC2023323                                       | Use of Small punch test for evaluating tensile properties of neutron irradiated steels,<br><i>Aishwary Vardhan Pandey, V. Karthik , Shaik Abdul Rahman, Ashish Kolhatkar, Divakar R.</i><br><i>Homi Bhabha National Institute (HBNI), Kalpakkam.</i>                                      |  |            |

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| 13.45-15.45  |  | Parallel Session – 1C<br>[Stephan Timoshenko Hall] | 23.08.2023 |
| Deformation and Failure aspects of Nuclear Materials |  |  |            |
| Session Chair: S.K. Acharyya                         |  |  |            |
| Invited Talk   | Study on Master curve in Ductile to Brittle Transition Temperature for the 20Mn Mo Ni55 steel - Experiment and Simulation<br><b>S.K. Acharyya</b> ,<br><i>Jadavpur University, Kolkata</i>   |  |            |
| IC2023116  | Transferability of Crack Growth Resistance Curves from Cruciform Bend Specimens to Reactor Pressure Vessel,<br><b>Thamaraiselvi Kumaresan</b> , S. Vishnuvardhan.<br><i>Academy of Scientific and Innovative Research, Ghaziabad.</i>                                |  |            |
| IC2023213a   | Study of Mechanical Properties of RPV Base and Weld Material Using SPT Technique,<br><b>Priti Kotak Shah</b> , Ganesh Nigudage, J. S. Dubey, P. P. Nanekar and Vivek Bhasin.<br><i>Bhabha Atomic Research Centre, Mumbai</i>   |  |            |
| IC2023322  | Embrittlement of Cr-Mo-V-Ni steel for reactor pressure vessel applications under in-situ hydrogen electrochemical charging,<br><b>Gopal Sanyal</b> , Arpan Das, Shreyas Wankhede, Chiradeep Gupta, Ram Niwas Singh.<br><i>Bhabha Atomic Research Centre, Mumbai.</i> |  |            |
| IC2023316  | Novel use of three-point bend test for determining the threshold stress for hydride reorientation in Zr-2.5Nb pressure tube material,<br><b>Narayana Murthy Thatavarthi</b> , Smit Patil, A.Sarkar, R.N.Singh.<br><i>Bhabha Atomic Research Division, Mumbai</i>     |  |            |
| IC2023349  | Effect of Strength on the Fracture Behavior of Zr Alloys Containing Radial Hydrides,<br><b>Arvind Kumar Bind</b> , Avinash G., Saurav Sunil, R. N. Singh .<br><i>Bhabha Atomic Research Division, Mumbai</i>   |  |            |

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| 13:45-15.45                         |   | Parallel Session – 1D<br>[Egon Orowan Hall] | 23.08.2023 |
| Computational Fracture Mechanics    |   |   |            |
| Session Chair: Shyam M. Keralavarma |   |   |            |
| Invited Talk                        | Recent advances in the local approach to ductile fracture<br><i>Shyam M. Keralavarma,</i><br><i>Indian Institute of Technology Madras, Chennai</i>  |   |            |
| IC2023046                           | Simulation of crack propagation in piping components using phase field approach,<br><i>Nitin Khandelwal, A. Ramachandra Murthy, S. Vishnuvardhan, M. Saravanan .</i><br><i>CSIR-Structural Engineering Research Centre, Chennai.</i>                          |   |            |
| IC2023102                           | Shape and Distribution Effect of Secondary Void on the Path Followed by Ductile Crack,<br><i>Alok Dwivedi, I. A. Khan, J. Chattopadhyay .</i><br><i>Homi Bhabha National Institute, Mumbai.</i>   |   |            |
| IC2023183                           | Microstructure-sensitive modelling of rate and temperature dependent fracture of metals and alloys,<br><i>Akash Gupta, Aakash Chaudhary, Ushasi Roy.</i><br><i>Indian Institute of Technology Kanpur.</i>   |   |            |
| IC2023269                           | Numerical investigation on low velocity impact behavior of CFRP laminates,<br><i>Rajagurunathan Madasamy, Raghu V. Prakash .</i><br><i>Indian Institute of Technology Madras, Chennai.</i>  |   |            |
| IC2023305                           | Effect of Damage Removal and Filling on Repair Efficiency of Patch Repaired Composite Laminates: A Numerical Study,<br><i>A. M. Sreenath, Raghu V. Prakash . Mechanical Engineering Department,</i><br><i>Indian Institute of Technology Madras, Chennai.</i> |   |            |

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| 16.00-17.45                 |  | Parallel Session – 2A<br>[Galileo Galilei Hall] | 23.08.2023 |
| Welding and Residual Stress |  |   |            |
| Session Chair: Richard Moat |  |   |            |
| Invited Talk                | <b>Good Practice Residual Stress Characterisation of Complex Structures and Components</b><br><b>Richard Moat,</b><br><b>Open University, United Kingdom</b>   |   |            |
| IC2023242                   | Methodology for predicting weld bead geometry in hot wire TIG welding based additive manufacturing,<br><b>Krishna Kumar Yadav,</b> Hemant Kumar, C. R. Das, K.G. Pradeep.<br>Indira Gandhi Centre for Atomic Research, A CI of Homi Bhabha National Institute, Kalpakkam   |   |            |
| IC2023020                   | Effect of laser hardening and post hardening shot peening on residual stress evolution in X5CrNiCuNb16-4 steel for steam turbine blade applications,<br><b>Pavan A.H.V,</b> Somnath Nandi, Amit Kumar, M. Swamy.<br>Bharat Heavy Electricals Limited, Hyderabad.   |   |            |
| IC2023310                   | Experimental and Numerical Analysis of Welding Thermal Cycles and Residual Stress in 316LN SS and Grade 91/316LN SS Weld Joints,<br><b>Anoop Pillai.</b> H. C. Dey, Jayadeep U.B., Vineesh K. P., D. Sharath, M. Menaka, S. Arun Kumar, S. Mahadevan, B. Venkatraman.<br>National Institute of Technology Calicut. |   |            |
| IC2023372                   | Residual stress and Microstructural evolution of 18Ni Maraging Steel Weldment using ICME Approach,<br><b>Vinoth Ammasi,</b> Sridhar Rajagopalan .<br>ESI Software India Pvt. Ltd, Bangalore.   |   |            |
| IC2023233                   | A study on the effect of weld repair on the structural margins of a solid rocket booster hardware<br><b>Sreerag MN,</b> Siva Kumar G, Kiran Kumar B , Thomas Kurian, Vinod Kumar N .<br>VSSC/Indian Space Research Organisation, Thiruvananthapuram.   |   |            |

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| 16.00-17.45                                  |  | Parallel Session – 2B<br>[Alan Arnold Griffith Hall] | 23.08.2023 |
| Structural Integrity of Aerospace Components |  |  |            |
| Session Chair: Benudhar Sahoo                |  |  |            |
| Invited Talk                                 | <b>Fatigue Failure of Aero-Engine Components</b><br><b>Benudhar Sahoo,</b><br><i>Centre for Military Airworthiness and Certification, Bangalore</i>  |  |            |
| IC2023037                                    | Sensitivity analysis of matrix decomposition in composite laminates under lightning strike through multi-physical finite element simulations<br><b>Ravindra Singh Chahar,</b> J. Lee, Tanmoy Mukhopadhyay.<br><i>Indian Institute of Technology Kanpur</i>           |  |            |
| IC2023065                                    | Damage Tolerance Behavior of Stiffened Crown Panel of a transport aircraft fuselage<br><b>Mohan Kumar M,</b> Srinivas Prabhu G. <i>Structural Integrity Division,</i><br><i>CSIR-National Aerospace Laboratories, Bangalore</i>                                      |  |            |
| IC2023157                                    | Modelling and Simulation of Wheel hub of an Aircraft<br><b>Krishnalok Singh,</b> Pratik Ramesh Sakpal,<br><i>CSIR-National Aerospace Laboratories, Bengaluru.</i>  |  |            |
| IC2023244                                    | Enhancement of Damage Tolerance Capability of an Aircraft Wing Spar Subjected to mini-TWIST Spectrum Fatigue Loads<br>Srinivasan N, N Nagarajappa, <b>M Mohan Kumar,</b> CM Manjunatha , Raghu V Prakash.<br><i>CSIR-National Aerospace Laboratories, Bangalore.</i> |  |            |
| IC2023302                                    | Thermo Structural Analysis of Nozzle Sub-assembly with Composite Liners for GAGANYAAN Mission,<br><b>Arun Kumar M,</b> Ajith M , Kiran Kumar B, Thomas Kurian,Vinod Kumar N .<br><i>VSSC/Indian Space Research Organisation, Thiruvananthapuram.</i>                 |  |            |

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| 16.00-17.45  |  | Parallel Session – 2C<br>[Stephan Timoshenko Hall] | 23.08.2023 |
| Deformation and Fracture of Novel & Advanced Materials |  |  |            |
| Session Chair: R. Lakshmi Narayan                      |  |  |            |
| Invited Talk   | <b>Fracture Toughness of Bulk Metallic Glass Composites with Ductile Reinforcements</b><br><b><i>R. Lakshmi Narayan,</i></b><br><b><i>Indian Institute of Technology Delhi</i></b>   |  |            |
| IC2023029  | A defect-tolerant design approach to predict the tensile and fatigue performance of alloys with manufacturing defects,<br><b><i>Surajit Kumar Paul,</i></b><br><i>Indian Institute of Technology Patna</i>   |  |            |
| IC2023081  | Fatigue Crack Growth Rate Behavior of a Additively Manufactured Nickle Based Superalloy,<br><b><i>Anilchandra A.R., S Bharath Bhushan, N V Sreekanth, D Santhosh, J Sharana Basavaraja, Shylaja Srihari, C M Manjunatha.</i></b><br><i>B.M.S. College of Engineering, Bangalore.</i> |  |            |
| IC2023263  | Exploring the influence of deformation temperature on the microstructure of CoCrFeMnNi High Entropy Alloy,<br><b><i>Rajasekhar Reddy Seelam,</i></b><br><i>Visvesvaraya National Institute of Technology Nagpur</i>  |  |            |
| IC2023051  | Effect of structural parameters on Collapse Modes of Aluminium Honeycomb core sandwich structure under bending test,<br><b><i>Suresh Kumar J, Kalaichelvan.</i></b><br><i>College of Engineering/Anna University, Chennai.</i>   |  |            |
| IC2023036  | Analytical Assessment of Composite L Angle Strength under Internal Fuel Pressure in Composite Wing,<br><b><i>Amardeepa KCS, Polagangu James, Byji Varughese,</i></b><br><i>CSIR-National Aerospace Laboratories, Bangalore.</i>  |  |            |

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| 16.00-17.45   |  | Parallel Session – 2D<br>[Egon Orowan Hall] | 23.08.2023 |
| Deformation and failure aspects of Engineering Components |  |   |            |
| Session Chair: J. B. Singh                                |  |   |            |
| Invited Talk  | <b>Fish-mouth failure of an ammonia cracker tube of Alloy 625</b><br><b>J. B. Singh.</b><br><b>Bhabha Atomic Research Centre, Mumbai.</b>  |   |            |
| IC2023040   | Determination of critical material damage parameter for Indian clad tube burst behavior under severe accident scenario,<br><b>Ather Syed, M.K. Samal, J. Chattopadhyay.</b><br>Homi Bhabha National Institute, Mumbai.             |   |            |
| IC2023207   | Mechanical Behavior of Advanced Steam Generator Tubes under U-Bend Fabrication,<br><b>Krishnendu Pal, R Suresh Kumar, N. Harsha.</b><br>Nuclear Fuel Complex, Hyderabad.   |   |            |
| IC2023172   | An assessment of delayed hydride cracking initiation in PHWR pressure tubes using in-house ZIPTAS code,<br><b>Deeprodyuti Sen, I.A.Khan, R.Rastogi, J.Chattopadhyay.</b><br>Bhabha Atomic Research Centre, Mumbai,                 |   |            |
| IC2023113a  | Fitness for Service of a Mounded Vessel with Laminations in Construction Plates,<br><b>Pradeep Appaji Jadhav, Rohit Rastogi.</b><br>Bhabha Atomic Research Centre, Mumbai.   |   |            |
| IC2023094   | Simulation Strategy for discontinuity stress estimation with mismatch and angular profile misalignment in metallic shells,<br><b>Vinod G, Manash Kumar Bhadra,</b><br>VSSC/Indian Space Research Organisation, Thiruvananthapuram. |   |            |



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| 15:45-18:00                    |  | Parallel Session – 3A<br>[Galileo Galilei Hall] | 24.08.2023 |
| Creep and Fatigue Crack Growth |  |   |            |
| Session Chair: N. Narasaiah    |  |   |            |
| Invited Talk                   | Creep Fatigue Crack Growth (CFCG) Studies on P91 Steel<br><b>N. Narasaiah,</b><br><i>National Institute of Technology Warangal</i>   |   |            |
| IC2023257                      | Effect of Primary Creep and Secondary Creep on Creep Crack Growth of SS316LN<br><b>Avinash Kumar Mishra,</b> Avinash Gopalan, M. Nanibabu, V.Karthik, Abhishek Tiwari .<br><i>Indian Institute of Technology Ropar</i>   |   |            |
| IC2023110                      | Fatigue crack growth behavior in Alloy 800 Steam Generator Tube Material<br><b>K Somasekhar Reddy,</b> S.V.R. Rao, B. Kamalesh Kumar, R.K. Chaube, K. Kapoor.<br><i>Nuclear Fuel Complex, Hyderabad.</i>   |   |            |
| IC2023133                      | Experimental Characterization of Fatigue Crack Growth Rate Behaviour of Alloy 617 Base and Weld Material,<br><b>M. D. Rakim,</b> P. Basu, M. Jana, S. Chaudhury, S. K.Acharyya, M. Nani Babu, A.Moitra .<br><i>Jadavpur University, Kolkata</i>  |   |            |
| IC2023158                      | Effect of Sodium Insulation interaction on FCG Behavior of SS316 (N) Weldment,<br><b>Ch. SSS Avinash,</b> M. Nanibabu, E. Hemanth Rao, Sanjay Kumar Das, A. Moitra, D.Ponraju, B.Venkatraman.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>                                   |   |            |
| IC2023304                      | Effect of Hold Time on CFCG of P91 steel at Force Ratio 0.1 and Temperature 600° C,<br><b>Challa Krishna Teja,</b> Kiranchand G.R, Chitresh Chandra, B. Shrinivasarao, M. Nani Babu, S.A. Krishnan, A. Moitra, N. Narasaiah.<br><i>National Institute of Technology Warangal</i>               |   |            |
| IC2023347                      | Evaluation of Creep Crack Growth Behaviour in the Boron added Modified 9Cr-1Mo Steel Weldment: Base Material and Heat Affected Zone,<br><b>Yatindra Kumar,</b> Avinash Gopalan, A Moitra, A Sarkar, R N Singh.<br><i>Bhabha Atomic Research Centre/Homi Bhabha National Institute, Mumbai.</i> |   |            |
| IC2023052                      | Fatigue Crack Growth Rate predictions in Nickel based Superalloys using Machine Learning Algorithms,<br><b>Mahesh S,</b> Anil Chandra A. R., Ravi Kumar L, Manjunatha C. M.<br><i>B.M.S. College of Engineering, Bangalore.</i>  |   |            |

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| 15:45-18:00                     |   | Parallel Session – 3B<br>[Alan Arnold Griffith Hall] | 24.08.2023 |
| Fracture and Damage Assessment  |   |  |            |
| Session Chair: P.C. Chakraborti |   |  |            |
| Invited Talk                    | Determination of Ductile Tearing Resistance Parameter of Interstitial-Free Steel Sheet<br><b>P.C. Chakraborti,</b><br><i>Jadavpur University, Kolkata</i>   |  |            |
| IC2023277                       | Influence of Temperature on Tensile Behavior and Deformation Mechanism of a Nickel base Wrought alloy used for Turbine Blades in an Aero-Engine,<br><b>Benudhar Sahoo.</b><br><i>Centre for Military Airworthiness and Certification, Bangalore</i> |  |            |
| IC2023024                       | Development of an analysis method to assess in-Calandria corium retention time in PHWRs,<br><b>Keshav Mohta, Suneel K. Gupta, Onkar S. Gokhale, Deb Mukhopadhyay, J. Chattopadhyay</b><br><i>Bhabha Atomic Research Centre, Mumbai.</i>             |  |            |
| IC2023113b                      | Structural Reliability of Pressure Tube of a PHWR with Volumetric Flaws,<br><b>Pradeep Appaji Jadhav, Rohit Rastogi, J. Chattopadhyay.</b><br><i>Bhabha Atomic Research Centre, Mumbai.</i>   |  |            |
| IC2023107                       | Quantification of hygrothermal aging-induced nano-micro scale carbon fiber/epoxy interfacial debonding,<br><b>Alok Behera, Debashish Das, Manjusha M. Thawre, Atul Ballal .</b><br><i>Indian Institute of Science, Bangalore</i>                    |  |            |
| IC2023161                       | Applicability of Critical Fracture Energy, $G_{fr}$ as a Fracture Criterion for Varying Temperature,<br><b>Sanjib Acharyya, S. K. Acharyya, S. Dhar.</b><br><i>Jadavpur University, Kolkata.</i>  |  |            |
| IC2023281                       | High temperature reactivity of molten lithium cadmium alloy with quartz,<br><b>Manish Chandra, Pabitra Ghosh, Nibedita Samanta, A. Lali, M. Kakkum Perumal, B. Muralidharan.</b><br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>     |  |            |
| IC2023077                       | Structural Integrity Assessment for In-vessel Corium Retention in Boiling Water Reactor,<br><b>Vijay Chaudhry, .K. Chaudhary, V. Chaudhry, S.M. Ingole.</b><br><i>Nuclear Power Corporation of India Ltd., Mumbai.</i>                              |  |            |

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| 15:45-18:00                    |   | Parallel Session – 3C<br>[Stephan Timoshenko Hall] | 24.08.2023 |
| Integrity Assessment           |   |  |            |
| Session Chair: Abhishek Tiwari |   |  |            |
| Invited Talk                   | Transition of a Crack in Differently Deforming Materials (Dissimilar Metals Welds and Polymer Composites) under Creep<br><b>Abhishek Tiwari</b> ,<br><i>Indian Institute of Technology Ropar</i>  |  |            |
| IC2023204                      | Shear Buckling of FBR Roof-Slab,<br><b>Ashok Kumar</b> , <i>S.D. Sajish</i> .<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>  |  |            |
| IC2023156                      | Online Imaging System for Component Integrity Test,<br><i>Sunil Satpute</i> , <b>M. K. Sahu</b> , <i>Suranjit Kumar</i> , <i>Swati A. H.</i> , <i>Rajesh B.</i> , <i>Valli K.</i> , <i>Wadnerkar A.</i><br><i>Bhabha Atomic Research Centre, Mumbai.</i>  |  |            |
| IC2023211                      | Implementation of Machine Learning Method to Quantitatively Evaluate the Local Stresses in Nozzles in Shells and Formed Heads from External Loads,<br><b>Balaji Srinivasan</b> , <i>Yadav Dipak</i> , <i>K. Gurumurthy</i> , <i>S.V.R. Subramanyam</i> .<br><i>Engineers India Limited, Gurugram</i>  |  |            |
| IC2023209                      | Assessment on structural integrity of aluminium alloy AA 6061 Water Tank used in satellite launch vehicles,<br><b>Santhoshkumar R</b> , <i>Rohan Nair</i> , <i>Aji Kumar A</i> , <i>Mankatiya Vittal Naik</i> , <i>Suresh Kumar R</i> , <i>SVS Narayana Murty</i> .<br><i>LPSC/ Indian Space Research Organisation, Thiruvananthapuram.</i> |  |            |
| IC2023210                      | Integrity Assessment of an In-Service LPG Pipeline Featuring Dent Defect at a Highway Crossing,<br><b>Dhanesh N</b> , <i>G. G. Srinivas Achary</i> , <i>Sreeshma P. U.</i> , <i>S.V.R. Subramanyam</i> .<br><i>Engineers India Limited, Gurugram</i>  |  |            |
| IC2023274                      | Structural Integrity Assessment and Fatigue Evaluation of Feed Water Nozzle of 700MWe PHWR Steam Generator,<br><b>Umesh Tilwani</b> , <i>Braham Parkash</i> , <i>Vikram Sehgal</i> .<br><i>Larsen &amp; Toubro Ltd., Surat.</i>   |  |            |
| IC2023317                      | Characterization of Irradiation induced Embrittlement in 3.5%Ni Steel,<br><b>Ran Vijay Kumar</b> , <i>Ashish Kolhatkar</i> , <i>Sathyanarayanan S</i> , <i>V. V. Jayaraj</i> , <i>A. Vijayaragavan</i> , <i>V. Karthik</i> , <i>Shaji Kurien</i> , <i>Divakar R</i> .<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>        |  |            |

| 15:45-18:00                 |   | Parallel Session – 3D<br>[Egon Orowan Hall] | 24.08.2023 |
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| Failure Prevention and ISI  |   |   |            |
| Session Chair: A. John Arul |   |   |            |
| Invited Talk                | <b>Fatigue Life Reliability of Welded Structures and its application to ISI in Sodium Cooled Fast Breeder Reactors</b><br><b>A. John Arul,</b><br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam</i>  |   |            |
| IC2023179                   | Restoration of an aged building through strategic repair,<br><b>Preetha Rajappan,</b> Kalpana Kumari, Mahesh Kumar, Sudipta Chattopadhyaya, N.Suresh .<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>   |   |            |
| IC2023294                   | Analysis & Characterization of Signals observed in Eddy Current Testing of Alloy 800 Steam Generator Tubes from ID side at Nuclear Fuel Complex,<br><b>Mohammed Muzammil,</b> Ahmed, S. Singh, Rupesh Kumar, K. Sunder Krishna, S.V. Ramana Rao,<br>B. Kamalesh Kumar, R.K. Chaube.<br><i>Nuclear Fuel Complex, Hyderabad.</i>      |   |            |
| IC2023160                   | Probabilistic Assessment of Ballooning of Pressure Tube under Severe Accident Conditions,<br><b>Akshay Kumar,</b> K. Samal, Rohit Rastogi, V. K. Singh, J. Chattopadhyay .<br><i>Bhabha Atomic Research Centre, Mumbai</i>  |   |            |
| IC2023163                   | Design of Laser Based Sag Measurement Tool-head (LaBSMarT) for inspection of pressure tube of PHWR,<br><b>Ashutosh Pratap Singh,</b> Saranjeet Singh, A.Bhardwaj, A.S. Padiyar, S.K. Tiwari, Sarvendra Singh, M.P.Kamath, N.S. Benerji, Abhay Kumar, Girdhar Mundra.<br><i>Raja Ramanna Centre for Advanced Technology, Indore.</i> |   |            |
| IC2023175                   | Distributed fiber optic sensing and packaged fiberbragg gratings for monitoring critical infrastructures,<br><b>Arun Sundaram</b> B, P. Biswas, Voggu Srinivas, S. Parivallal, Nandini Basumallick ,S. Bandyopadhyay.<br><i>CSIR-Structural Engineering Research Centre, Chennai.</i>   |   |            |
| IC2023096                   | Comparison of Signal Decomposition Techniques for Modal Identification of Bridges using a Drive-by Vehicle,<br><b>Lakshmi K,</b> K.Lakshmi, Voggu Srinivas.<br><i>CSIR-Structural Engineering Research Centre, Chennai.</i>   |   |            |
| IC2023357                   | Design and structural analysis of large capacity storage tanks and aid on components for safe handling and installation at underground waste tank farm,<br><b>Sanatana Maharana,</b> Dharmick Kumar, Sunil Dhariyal, T. Selvaraj ,Shekhar Kumar.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam</i>                      |   |            |

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| 10:45-12.45                  |  | Parallel Session – 4A<br>[Galileo Galilei Hall] | 25.08.2023 |
| Deformation Modelling        |  |   |            |
| Session Chair: Praveen Kumar |  |   |            |
| Invited Talk                 | <b>Effect of Joint Length Scale on Creep Deformation of Sn-Rich Dissimilar Metallic Joints</b><br><b>Praveen Kumar,</b><br><i>Indian Institute of Science Bangalore</i>  |   |            |
| IC2023017                    | Developments for improved cyclic plasticity modeling and fatigue life assessments under multiaxial loading<br><b>Punit Arora,</b> <i>Suneel K. Gupta, J. Chattopadhyay.</i><br><i>Bhabha Atomic Research Centre, Mumbai.</i>   |   |            |
| IC2023054                    | Simulation of strain controlled creep fatigue interaction cycle of Nickel based superalloys using Unified Mechanics Theory.<br><b>Saurabh Mangal,</b> <i>Lakshmana Rao C , Sri Krishna Sudhamsu , Perumal Chellapandi.</i><br><i>Indian Institute of Technology Madras, Chennai.</i> |   |            |
| IC2023138                    | Dislocation-based crystal plasticity model to address temperature dependent plasticity in BCC materials .<br><b>Kulbir Singh,</b> <i>C. Robertson .</i><br><i>Indira Gandhi Centre for Atomic Research, A CI of Homi Bhabha National Institute, Kalpakkam.</i>                       |   |            |
| IC2023176                    | Constitutive modeling of low cycle fatigue behavior of 321 austenitic stainless steel<br><b>Neha Mehani.</b> <i>Samir Chandra Roy, Anshu Dhar Jayal.</i><br><i>Indian Institute of Technology Ropar.</i>   |   |            |
| IC2023227                    | Effect of plastic anisotropy on the forming limits of sheet metals<br><b>Krunal Morey,</b> <i>Shyam M. Keralavarma .</i><br><i>Indian Institute of Technology Madras, Chennai.</i>   |   |            |
| IC2023325                    | Formation of Σ3 grain boundary from <110> Asymmetric tilt grain boundaries in BCC-Fe<br><b>J. Veerababu,</b> <i>A. Nagesha , Vani Shankar .</i><br><i>Homi Bhabha National Institute, Mumbai/Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>                                |   |            |

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| 10.45-12.45  |  | Parallel Session – 4B<br>[Alan Arnold Griffith Hall] | 25.08.2023 |
| Microstructural Aspects of Deformation and Failure |  |  |            |
| Session Chair: S. Sivaprasad, NML Jamshedpur       |  |  |            |
| Invited Talk                                       | Deformation Mechanisms of Additively Manufactured Cobalt-based Superalloy Mar-M 509<br><b>Nagamani Jaya Balila,</b><br><i>Indian Institute of Technology Bombay, Mumbai</i>  |  |            |
| IC2023043  | Influence of creep forming temperature on the mechanical properties and high cycle fatigue strength of Al-Mg-Sc-Zr alloy,<br><b>Masa Suresh Kumar,</b> <i>N. Jagannathan, Ramesh Bojja, M. Sujata, C.M. Manjunatha,</i><br><i>CSIR-National Aerospace Laboratories, Bangalore</i>                        |  |            |
| IC2023086  | Grain Boundary Precipitation and Cracking Failure of Alloy 617 during Cold Working: Correlation Study,<br><b>Rupesh Kumar,</b> <i>Sumita Santra, I. Kalpana Nayak, K. Sunderkrishna, S.V. Ramana Rao, B. Kamalesh Kumar,</i><br><i>R.K. Chaube, K. Kapoor.</i><br><i>Nuclear Fuel Complex, Hyderabad</i> |  |            |
| IC2023103  | Thermal aging effects on Tensile and Metallurgical characteristics of Stainless steel weld joint,<br><b>Cyril Reuben Raj,</b> <i>Suranjit Kumar, Kamlesh Chandra, P. K. Singh .</i><br><i>Bhabha Atomic Research Centre, Mumbai.</i>   |  |            |
| IC2023130  | Failure analysis of non-rotating control rod of a helicopter,<br><b>Venkatesh V,</b> <i>K. Raghavendra, M.Madan, M.Sujata, S.K.Bhaumik.</i><br><i>CSIR-National Aerospace Laboratories, Bangalore</i>  |  |            |
| IC2023240  | Strengthening by primary, secondary and tertiary gamma prime in 720Li alloy,<br><b>Jitendra Kumar Sahu,</b> <i>P. S. M. Jena .</i><br><i>CSIR-National Metallurgical Laboratory, Jamshedpur.</i>   |  |            |
| IC2023177  | Development of a nickel base disk super alloy with higher temperature capability,<br><b>P.S. Manoranjan Jena,</b> <i>J. K. Sahu.</i><br><i>Academy of Scientific and Innovative Research, Ghaziabad.</i>   |  |            |

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| 10.45-12.45   |   | Parallel Session -4C<br>[Stephan Timoshenko Hall] | 25.08.2023 |
| Digital Image Correlation in Deformation and Damage Mapping |   |   |            |
| Session Chair: S. Raviprakash                               |   |   |            |
| Invited Talk  | Fracture Process Zones in BARCOM – BARC Nuclear Containment Test Model<br><b>S. Raviprakash,</b><br><i>Pyrodynamics, Bangalore</i>  |   |            |
| IC2023205   | Study of cyclic plastic zone ahead of the fatigue crack tip using Digital image Correlation system,<br><b>Prakash Bharadwaj,</b> <i>Suneel K Gupta, J Chattopadhyay.</i><br><i>Homi Bhabha National Institute, Mumbai.</i>  |   |            |
| IC2023273   | Effect of Material Heterogeneity and T-Stress on Fracture Toughness in Quasi-Brittle Composite Materials,<br><b>Shanideo Jadav,</b> <i>Prakash Nanthagopalan, Krishna Jonnalagadda.</i><br><i>Indian Institute of Technology Bombay, Mumbai.</i>  |   |            |
| IC2023287   | Effect of Temperature on Bending Creep Behavior of Additively Manufactured A205 Aluminium Alloy,<br><b>Anup Kulkarni,</b> <i>Bibek Das, Praveen Ravanappa, Dheepa Srinivasan, Vikram Jayaram, Praveen Kumar.</i><br><i>Pratt &amp; Whitney Research and Development Center, Bangalore</i> |   |            |
| IC2023344   | Analysis of Small Punch deformation using Digital Image Correlation,<br><b>Abdul Rahman,</b> <i>Ashish Kolhatkar, V. Karthik, M. Nani Babu, Divakar R.</i><br><i>Homi Bhabha National Institute (HBNI)/Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>                           |   |            |
| IC2023145   | Engineering micro-strain localizations in dual phase steels to improve their hole expansion behavior,<br><b>Soudip Basu,</b> <i>Nagamani Jaya Balila</i><br><i>Indian Institute of Technology Bombay, Mumbai</i>  |   |            |

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| 10:45-12:45                           |  | Parallel Session – 4D<br>[Egon Orowan Hall] | 25.08.2023 |
| Fatigue and Creep-Fatigue Interaction |  |   |            |
| Session Chair: Kartik Prasad          |  |   |            |
| Invited Talk                          | <b>Mechanism Based Assessment of Fatigue Variability Behaviour: Progress in Probabilistic Life-Prediction,</b><br><b>Kartik Prasad,</b><br><i>Defence Metallurgical Research Laboratory, Hyderabad</i>   |   |            |
| IC2023058                             | Effect of chemical milling and anodising on the high cycle fatigue life of 2024-T3 aluminium alloy<br><b>Chinnam Sivateja,</b> Naga Charan KV., Ramesh Bojja, Jagannathan N, Manjunatha C M.<br><i>CSIR-National Aerospace Laboratories, Bangalore</i>                     |   |            |
| IC2023117                             | Asymmetric Stress Cyclic Loading Behavior of Micro-alloyed 2.25Cr-1Mo Steel at 550°C<br><b>Rupendra Singh Rajpurohit,</b> J.K.Sahu.<br><i>CSIR-National Metallurgical Laboratory, Jamshedpur</i>   |   |            |
| IC2023146                             | Assessment of Ratcheting in SGDHR Pipe Bend under Various Loading Conditions<br><b>Rosy Sarkar,</b> Bhuwan Chandra Sati, R. Suresh Kumar.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>   |   |            |
| IC2023268                             | Influence of Wave shape on the Creep-Fatigue Interaction Behaviour of 316LN stainless steel<br><b>Kannan R,</b> Vani Shankar and A. Nagesha.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>  |   |            |
| IC2023276                             | Influence of Temperature Range on The Thermomechanical Fatigue Behaviour of Alloy 617M Forge<br><b>Isaac Samuel,</b> Vani Shankar, A. Nagesha, M. Okazaki.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam</i>   |   |            |
| IC2023329                             | High Temperature Low Cycle Fatigue Behaviour of Recycled CM247 LC Ni-Base Superalloy for Aerofoil Castings of Gas Turbine Engines<br><b>Krushna Kumbhar,</b> Dibyendu Chatterjee, Kartik Prasad, D.K. Das.<br><i>Defence Metallurgical Research Laboratory, Hyderabad.</i> |   |            |



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| 15.15-17.00                  |   | Parallel Session – 5A<br>[Galileo Galilei Hall] | 25.08.2023 |
| Corrosion, Coatings and Wear |   |   |            |
| Session Chair: G. Raghava    |   |   |            |
| Invited Talk                 | Corrosion Fatigue Experimental Studies on Structural Steels and Components<br><b>G. Raghava,</b><br><i>Nitte Meenakshi Institute of Technology, Bengaluru</i>   |   |            |
| IC2023095                    | Qualification Of Thermal Barrier Coating For Semi-Cryogenic Engine Thrust Chamber Through Strain-Controlled Fatigue Tests,<br><b>Sarath Chandran Nair S</b> , Krishnajith Jayamani · Sai Teja Dasari , Vinayaravi R , Venkatesh N , Vasudevan R, Asraff A.K.<br><i>LPSC/ Indian Space Research Organisation, Thiruvananthapuram</i>                               |   |            |
| IC2023167                    | Synthesis of anti-corrosive oxide coatings over mild steel specimens under superheated steam environment,<br><b>Arun Nair</b> , Manu Harilal, Tony Varghese , Shyam Krishna, Jeevan Sree, Jithu Binil, Muhammed Yasin,<br><i>Amal Jyothi College of Engineering, Kanjirappally</i>  |   |            |
| IC2023239                    | Effect of cathodic protection on the corrosion fatigue crack growth behavior and fatigue life of a Naval grade shipbuilding steel,<br><b>Vivek Srivastava</b> , B.Basu, N.Prabhu.<br><i>Indian Institute of Technology Bombay, Mumbai,</i>  |   |            |
| IC2023300                    | Evaluation of specific wear coefficient of sliding surface contact pairs through tribological experiment,<br><b>Ashish Kumar</b> , Nagaraja Bhat Y V, M. Arvinth Davinci, Ashish Kumar, N.L.Parthasarathi, S.I. Sundar Raj, Dipti Samataray , B.K. Sreedhar<br><i>Homi Bhabha National Institute, Mumbai/ Indira Gandhi Centre for Atomic research, Kalpakkam</i> |   |            |
| IC2023367                    | Corrosion Assessment Model and Material Selection for Offshore Industry,<br><b>Venkataraman Chellappan</b> ,<br><i>JGC Holdings Corporation, Chennai</i>  |   |            |

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| 15.15-17.00  |   | Parallel Session – 5B<br>[Alan Arnold Griffith Hall] | 25.08.2023 |
| Deformation and failure aspects of Engineering Materials |   |  |            |
| Session Chair: A.V.S Siva Prasad                         |   |  |            |
| Invited Talk   | Numerical Studies on the Impact and Blast Response of Polyurea Coated Plates<br><b>A.V.S. Siva Prasad,</b><br><i>Indian Institute of Information Technology, Design and Manufacturing, Kanchipuram</i>  |  |            |
| IC2023221  | Effect of weld groove angle on P92 steel joint integrity under creep condition,<br><b>T. Sakthivel,</b> M. Vasudevan.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>  |  |            |
| IC2023280  | Small Punch Creep properties of thermally aged 316LN SS with varying nitrogen content,<br><b>J Ganesh Kumar,</b> G.V. Prasad Reddy, A. Nagesha.<br><i>Indira Gandhi Centre for Atomic Research, Kalpakkam.</i>  |  |            |
| IC2023337  | Creep deformation behavior of Su263 alloy at elevated temperatures<br><b>Krishna Guguloth,</b> Chandru Fernando D, Neeta Paulose, J K Sahu.<br><i>CSIR-National Metallurgical Laboratory, Jamshedpur</i>  |  |            |
| IC2023213b   | Hydride Reorientation in Zr-2.5Nb Pressure Tube Under Hoop Stress Loading,<br><b>Priti Kotak Shah,</b> Ashish Sushibine, Sae Jagtap, Akanksha Samanta, J. S. Dubey, P. P. Nanekar, Vivek Bhasin,<br><i>Bhabha Atomic Research Centre, Mumbai</i>            |  |            |
| IC2023083b   | Leak rate assessment from an axial through wall crack in Zr-2.5Nb PTs formed due to DHC,<br><b>Rishi Kumar Sharma,</b> Vipul K Shiralkar, Hemant Kalra, S Khandave, D Bhachawat, S.M. Ingole.<br><i>Nuclear Power Corporation of India Limited, Mumbai.</i> |  |            |

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| 15.15-16.45   | Parallel Session – 5C<br>[Stephan Timoshenko Hall]   | 25.08.2023 |
| Experimental and Simulation Studies on Structural integrity |  |            |
| Session Chair: Viswanath Chinthapenta                       |  |            |
| Invited Talk -1   | Role of anisotropy on the ductile fracture: Void growth, nucleation, and coalescence<br><i>Viswanath Chinthapenta,</i><br><i>Indian Institute of Technology Hyderabad</i>  |            |
| Invited Talk -2   | Numerical and Experimental Study on Nugget Size and Residual Stresses in Resistance Spot Weld Joints of AISI 1008 Steel Sheets<br><i>Jeevan Jaidi,</i><br><i>Birla Institute of Technology &amp; Science-Pilani, Hyderabad</i>             |            |
| IC2023059   | Effect of Natural Fiber on the Strength of Bi-adhesive Lap Joint,<br><i>B. Saunshi, D. A. Ponnaswami , L. Chikmath,</i><br><i>KLS Gogte Institute of Technology, Belagavi.</i>   |            |
| IC2023151   | Effect of directional stresses (unequal) in estimating Low Cycle Fatigue life as per RCC-MRx,<br><i>Tarkesh Singh,</i> Kulbir Singh<br><i>Indira Gandhi Centre for Atomic Research, A CI of Homi Bhabha National Institute, Kalpakkam.</i> |            |

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| 15.15-16.30                             | Parallel Session – 5D<br>[Egon Orowan Hall]  | 25.08.2023 |
| Fracture Toughness and Dynamic Fracture |  |            |
| Session Chair: S. Vishnuvardhan         |  |            |
| Invited Talk                            | Fracture Studies on Reactor Pressure Vessel Steel under Pressurised Thermal Shock<br><b>S. Vishnuvardhan</b> ,<br><i>CSIR-Structural Engineering Research Centre, Chennai</i>  |            |
| IC2023121                               | Calibration of tensile tests in impact machine and implementation in simulation of Charpy tests,<br><b>Vaibhav Gangwar</b> , S. K Acharyya, Arka Banerjee , D.K Joshi,<br><i>Jadavpur University, Kolkata</i>            |            |
| IC2023251                               | Experimental Investigation of Anisotropic Characteristics of Willow Wood under High Strain Rate,<br><b>Ashish Pandey</b> , Debiprasad Senapati, C Lakshmana Rao<br><i>Indian Institute of Technology Madras, Chennai</i> |            |
| IC2023262                               | Dynamic Response Analysis of Reinforced Column Subjected to Shock wave loading.<br>Anupaju Rajeev, Sai Sharath Parsi, <b>Prince Jeyalal Lazar</b><br><i>Rajalakshmi Institute of Technology, Chennai</i>                 |            |