Annual Research Symposium 2021

Mechanical Engineering, IISc

Day 1 - 30th July (Online)

July 30th 2021 (Friday)

09:15am-09:30am	**Welcome**
09:30am-10:00am	**Keynote Lecture 1: Shyamprasad Karagadde (IITB)** **Student coordinator 1: Dipti Ranjan Parida** **Student coordinator 2: Vaghani Dipak Himmatbhai**
10:00am-11:00am	**Session 1:** **Faculty Chair 1: Shyamprasad Karagadde (IITB)** **Faculty Chair 2: Gaurav Tomar** **Student coordinator 1: Dipti Ranjan Parida** **Student coordinator 2: Vaghani Dipak Himmatbhai**
	1.1: Study of unsteady axisymmetric starting jets with passive flexibility at the exit - B Ashok
	1.2: Impact phenomena in interfacial systems - Durbar Roy
	1.3: A sharp Interface Immersed Boundary Method for coupled fluid-rigid body dynamics - Mahesh Kisan Sawardekar
	1.4: Experimental and Numerical Studies on Chemically Active Flame Inhibitors - Pabitra Badhuk

11:00am-11:15am	**BREAK**

11:15am-12:30pm	**Session 2:** **Faculty Chair 1: Aloke Kumar** **Faculty Chair 1: Ramsharan Rangarajan** **Student coordinator 1: Debendra Nath Sarkar** **Student coordinator 2: Thota Srinivas**
	2.1: An experimental and numerical investigation of syngas combustion in a two-stage combustor - Atanu Dolai
	2.2: High-order non-oscillatory reconstruction and boundary closures on three-dimensional unstructured grids - Vaghani Dipak Himmatbhai
	2.3: Linear stability analysis of compressible channel flow - Mandeep Deka
	2.4: Synthesis and Characterization of Nano-porous Alumina Coating on 6061 Aluminium Alloy Substratefor Tribological Applications - Gautam Revankar A
	2.5: Friction Stir Processing as a method to form nano and microporous materials - Nisheeth Pandey
12:30pm-02:00pm	**BREAK**
02:00pm-02:30pm	**Keynote Lecture 2: Arup Nandy (IITG)** **Student coordinator 1: Priyabrata Maharana** **Student coordinator 2: Suman Dutta**
02:30pm-03:45pm	**Session 3:** **Faculty Chair 1: Arup Nandy (IITG)** **Faculty Chair 2: Koushik Viswanathan**

	Student coordinator 1: **Priyabrata Maharana** **Student coordinator 2:** **Suman Dutta**
	3.1: Elastic ribbons: model validation protocols, simulations, and a ribbon model - Arun Kumar
	3.2: An ALE-based finite element strategy for modelling two-phase flows - Nilesh Potghan
	3.3: Discrete Particulate Modeling of Cell Nuclei - Prasenjit Ghosh
	3.4: A monolithic finite element strategy for conjugate heat transfer - Santhosh A K
	3.5: Topological derivative for one-dimensional domain and its application - Vageesh Singh Baghel
04:00pm-05:00pm	**Poster Session 1:** **Faculty Chair 1:** **M.S.Bobji** **Faculty Chair 2:** **Jishnu Keshavan** **Faculty Chair 3:** **Navaneetha Krishnan Ravichandran**
	1.1: Capillary-fed Evaporative Microthruster for Micro/Nano Satellites - Akshay Sharma
	1.2: Rotary atomization of non-Newtonian liquids for spray drying applications - Amitesh K. Chaudhary
	1.3: Droplet dynamics on heated microtextured surfaces - Datta Prasad M R

	1.4: Evaluating performance metrics in non-homogeneous cutting processes using a random-grid based digital image correlation (DIC) method - Deepika Gupta
	1.5: Deformation and Fracture Behaviour of Mg AZ31 Alloy at Elevated Temperatures - Dhrubjyoti Baruah
	1.6: Mechanism of Spherical Particles Formation During Surface Grinding - Harish Singh Dhami
	1.7: Interaction of an elliptic vortex ring with a bubble: towards understanding bubbly turbulent flow - Manoj N. Dixit
	1.8: Contact line pinning and de-pinning can modulate the Rod-climbing effect - Navin Kumar Chandra
	1.9: Coalescence of polymeric droplets - Vegesina Sarath Chandra Varma
	1.10: Two Phase Viscoelastic Flows - Bangar Sarika Shivaji
	1.11: Secondary atomization of cough droplets through face masks - Shubham Sharma
	1.12: Direct Numerical Simulations of Condensing Droplets - Thota Srinivas