Current Trends in Non-Equilibrium Physics

November 22 -26, 2021

School of Physical Sciences, Jawaharlal Nehru University, New Delhi

Program Schedule

Inauguration @ 10.15 AM (22/11/2021)

DAY -1, Date: 22/11/2021 (Monday)

Session (i) chair: Prof. R. Rajaraman

Time (IST)	**Name of the speaker**	**Title**
10:30 – 11:20	Mustansir Barma	Coarsening and Extremes
11:20 – 12:10	Srikanth Sastry	Yielding and fatigue failure of amorphous solids under cyclic deformation.
12:10 – 1:00	Marco Zannetti	Phase ordering as a critical phenomenon
	LUNCH BREAK	
	Session (ii) chair: Prof. Prabal Maiti	
14:30 – 15:00	Kedar Damle	Dulmage-Mendelsohn percolation
15:00 – 15:30	Heiko Rieger	Search efficiency of (auto-) chemotactic random walkers
15:30 – 16:00	Abhishek Dhar	Blast in a cold gas: From Newton to Euler and Navier-Stokes
	TEA BREAK	
	Session (iii) chair: Prof. Sankalpa Ghosh	
16:15 – 16:45	Tanusri Saha-Dasgupta	Phase Stability, Equilibrium and Non - equilibrium Statistical Mechanics of FCC Alloys
16:45 – 17:15	Subir Das	Mpemba Effect: Does it exist?
17:15 – 17:45	Hiranmaya Mishra	Unmasking hybrid star
17:45 – 18:15	Varsha Banerjee	Emergent Properties of Ferronematics

DAY – 2, Date: 23/11/2021 (Tuesday)

Session (iv) chair: Prof. Sanjay Puri

Time (IST)	Name of the speaker	Title
10:30 – 11:20	Sriram Ramaswamy	Driving through a crystal
11:20 – 12:10	Subodh Shenoy	Domain wall evolutions after temperature quenches below transition
12:10 – 1:00	Moshe Schwartz	The Self Consistent Expansion – applied to non-linear stochastic systems
	LUNCH BREAK	
	Session (v) chair: Prof. Subir Das	
14:30 – 15:00	Devang Khakhar	Gradient Monte Carlo: A High Throughput Method for Computing Thermodynamic Properties
15:00 – 15:30	Rahul Pandit	An Introduction to Cahn-Hilliard-Navier-Stokes Turbulence
15:30 – 16:00	Federico Corberi	Coarsening and percolation in the 2d long-range Ising model
	TEA BREAK	
	Session (vi) chair: Dr. Poonam Mehta	
16:10 – 16:20	Rajeev Ahluwalia	Simulation of Solid State Phase Transformations during 3D Printing
16:20 – 16:30	Prabhat K Jaiswal	Domain growth and wetting in binary mixtures: Fast-mode kinetics
	TEA BREAK 16:30 – 16:55	
17:00 – 18.45	Felicitation	**Coordinator: Prof. Satyabrata Patnaik**
17:00 – 18:45	Kurt Binder Sanjay Puri + + + + +	The glass transition: An unsolved grand challenge of non-equilibrium physics? Kinetics of Phase Transitions

DAY – 3, Date: 24/11/2021 (Wednesday)

Session (vii) chair: Prof. R. Rajaraman

Time (IST)	Name of the speaker	Title
10.30 – 11:20	Ajay Sood	Nano Heat Engines: Triumph of Stochastic Thermodynamics
11:20 – 12:10	Debashish Chowdhury	Non-equilibrium Phenomena in Length Control of Cell Protrusions
12.10 – 1:00	Arup K. Raychaudhuri	Disordering a First order transition: Case study of Mott metal-insulator transition
	LUNCH BREAK	
	Session (viii) chair: Prof. Subhasis Ghosh	
14:30 – 15:00	Madan Rao	Cell membrane as an Active Emulsion
15:00 – 15:30	Raja Paul	Kinetics of multicentrosomal clustering during mitosis
15:30 – 16:00	Prabal Maiti	Activity induced phase separation and ordering in various model soft matter systems
16: 00 – 16.30	Martin Weigel	Ising and Potts models in a random field: results from (quasi-)exact algorithms
	TEA BREAK	
	Session (ix) chair: Prof. Varsha Banerjee	
16:45 – 17:15	R. Rajesh	Velocity distribution of driven granular gases
17:15 – 17:45	Dibyendu Das	First passage of an active particle through a crowd of passive floaters
17:45 – 18:15	Sankalpa Ghosh	(2+1)-dimenisonal sonic black hole in a synthetically spin-orbit coupled ultra cold BEC

DAY-4, Date: 25/11/2021 (Thursday)

Session (x) chair: Prof. Debashis Ghoshal

Time (IST)	Name of the speaker	Title
10:30 – 11:20	Sushanta Dattagupta	Graphene – A Case Study of Quantum Dissipation, Non-equilibrium and Nonlinear Phenomena
11:20 – 12:10	Deepak Dhar	Chase Escape percolation
12:10 – 1:00	Jayanta Bhattacharjee	Stably stratified fluid turbulence, where crossover in the energy spectrum defies common sense
	LUNCH BREAK	
	Session (viii) chair: Prof. Kedar Singh	
14:30 – 15:00	Jurgen Horbach	Brittle yielding in supercooled liquids below the critical temperature of mode coupling theory
15:00 – 15:30	Sanjay Kumar	Statistical Mechanics of DNA: Theory and Simulations
15:30 – 16:00	Mahendra Verma	Energy Flux in Nonequilibrium Systems
	TEA BREAK	
	Session (xii) chair: Prof. Mahendra Verma	
16:15 – 16:45	Surajit Dhara	Active colloids in liquid crystals
16:45 – 17:15	Shraddha Mishra	Polar swimmers induce several phases in active nematics
17:15 – 17:45	Anirban Chakroborti	Deciphering complexity of financial networks
17:45 – 18:15	Ranjini Bandyopadhyay	Control of displacement pattern morphologies by tuning the viscoelasticity and miscibility of a fluid pair at a quasi two-dimensional interface

DAY – 5, Date: 26/11/2021 (Friday)

Session (xiii) chair: Prof. Sushanta Dattagupta

Time (IST)	Name of the speaker	Title
10:30 – 11:20	Chandan Dasgupta	Jammed States in Persistent Active Matter
11:20 – 12:10	G. Baskaran	Non Equilibrium Superconductivity at Room Temperatures
12:10 – 1:00	M. Lakshmanan	Chimera states in a system of nonidentical counter-rotating nonlinear oscillators
	LUNCH BREAK	
	Session (xiv) chair: Dr. Amit Rai	
14:30 – 15:00	Rama Govindrajan	Particles in turbulent flows: what building blocks can tell us
15:00 – 15:30	A. P Dimri	Permafrost (in Himalayas)
15:30 – 16:00	Subhasis Ghosh	Critical test for Critical Phenomena: Different critical exponent on two sides of phase transition in Cu2OSeO3
	TEA BREAK	
	Session (xv) chair: Dr. Tanuja Mohanty	
16:15 – 16:30	Gaurav P. Shrivastav	Global carbon budget 2021: contribution from OSCAR model
16:30- 16:45	Manoj Kumar	Ordering in Disordered Systems
16:45– 17:00	Arun Kumar Bhupathy	Temperature protocols for selective self-assembly of competing structures
	TEA BREAK	
	Session (xvi) Chair: Dr. Rabindra Mahato	
17:00 – 17:15	Awaneesh Singh	Photo-induced bond breaking during phase separation kinetics of block copolymer melts: A dissipative particle dynamics study
17:15- 17:30	Prasenjit Das	Scaling theory of shear-induced inhomogeneous dilation in granular matter
17.30 – 17:45	Ramgopal Agarwal	Domain growth and aging in the random field XY model
17:45	**Concluding Session**	