



# Vinay VAIBHAV

POSTDOCTORAL RESEARCHER

## Get in Touch!

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## Education

The Institute of Mathematical Sciences  
PhD in Physics (2017-2022)

PhD Thesis: Thermo-mechanical Response  
of Glassy Systems

PhD Supervisor: Prof. Pinaki Chaudhuri

The Institute of Mathematical Sciences

Master of Science in Physics (2015-2017)

Grades: 8.67/10

Central University of Jharkhand

Bachelor of Science (Hons) in Applied

Physics (2012-2015)

Grades: 9.55/10

## Employment

Postdoctoral Fellow (Mar. 2023 - Feb. 2025)

Dept. of Physics, University of Milan, Italy

Funding: ERC project 'Multimech' of Prof.

Alessio Zaccone

## Skills and Expertise

Numerical modeling and simulations

— Molecular dynamics, Monte Carlo

High performance computing

Serial and Parallel programming in C/C++

Python, Mathematica, Shell scripting

LAMMPS, LATEX, gnuplot, VMD, Ovito

## Research Interests

Broadly interested in the field of Statistical Physics and Soft Matter Systems

- Thermal response of glass-forming systems
- Mechanical response of amorphous materials
- Dynamic heterogeneity in supercooled liquids
- Flow through a porous glassy matrix
- Topological defects in amorphous materials
- Active glass
- Rheology of complex fluids
- Flow under confinement
- Mechanics of atomistic polymers

## Selected Publications

- *Experimental identification of topological defects in 2D colloidal glass*  
V. Vaibhav, A. Bera, A. C. Y. Liu, M. Baggioli, P. Keim, and A. Zaccone  
Nature Communications, in press (2024)
- *Time-scale bridging in atomistic simulations of epoxy polymer mechanics using non-affine deformation theory*  
V. Vaibhav, T.W. Sirk, and A. Zaccone; Macromolecules 57(23), 10885 (2024)
- *Entropic Timescales of Dynamic Heterogeneity in Supercooled Liquid*  
V. Vaibhav, and S. Dutta; Phys. Rev. E 109, L062102 (2024)
- *Controlled Mechanical Failure in Heterogeneous Glasses*  
V. Vaibhav, J. Horbach, and P. Chaudhuri; Phys. Rev. Materials 7, 095601 (2023)
- *Rheological response of a glass-forming liquid having large bidispersity*  
V. Vaibhav, J. Horbach, and P. Chaudhuri; Soft Matter 18, 4427 (2022)
- *Influence of thermalisation protocol on Poiseuille flow of confined soft glass*  
V. Vaibhav, and P. Chaudhuri; Physics of Fluids 33, 053103 (2021)

## Teaching

Teaching Assistant — The Institute of Mathematical Sciences, Chennai

Advanced Condensed Matter Physics (Jan.-Apr. 2019)

Instructor: Prof. Pinaki Chaudhuri

Statistical Mechanics I (Jan.-Apr. 2018)

Instructor: Prof. Satyavani Vemparala

## Academic Accomplishments/Experiences

- 15+ Talks in various workshops/conferences
- 10+ Poster presentations
- 10+ Academic visits to different research groups
- Invited reviewer in various peer review journals
- SERB-international travel grant in 2022 for attending workshop in Germany
- Fellowship from Department of Atomic Energy (GOI) to support PhD research
- 2014: Full-freeship from Central University of Jharkhand
- 2007: Represented the state at national level to present a project titled "Conservation through tradition" in Children's Science Congress, Baramati Pune