

Prateek Anand

Curriculum Vitae

Fluid Dynamics and Turbulence
International Centre for Theoretical Sciences (ICTS-TIFR)
✉ prateekanand85@gmail.com
🎓 [Google Scholar](#)

Personal Information

Date of Birth 11/03/1992
Place of Birth **Lucknow**, India.
Nationality Indian

Current Position

Feb 2023 **Postdoctoral Fellow**
– present International Center for Theoretical Sciences (ICTS-TIFR),
Tata Institute of Fundamental Research,
Bengaluru, India.

Education

2015–2022 : **PhD in Engineering Mechanics**
Engineering Mechanics Unit,
Jawaharlal Nehru Centre for Advanced Scientific Research,
Bengaluru, India.
Thesis Title: *Motion of anisotropic particles in: sedimentation, unidirectional shear flows and turbulence*
Thesis Advisor: Professor [Ganesh Subramanian](#)
Received the **Best PhD thesis award**, 2023 in **Engineering Mechanics Unit**

2009–2014: Dual Degree in **Mechanical Engineering** :
Master of Technology in Thermal Science and Engineering
Bachelor of Technology (Honours) in Mechanical Engineering
Department of Mechanical Engineering,
Indian Institute of Technology, Kharagpur.
CGPA: 8.38/10

2009 : **Indian School Certificate Examinations (XIIth)**
City Montessori School, Lucknow.
Percentage : 92.5%

2007 : **Indian Certificate of Secondary Education (Xth)**
City Montessori School, Lucknow.
Percentage : 95.3%

Research Positions

Feb 2023 – **Postdoctoral Fellow**
Present International Center for Theoretical Sciences (ICTS-TIFR),
Tata Institute of Fundamental Research,
Bengaluru, India.

July 2014 – **Mentor:** Professor **Samriddhi Sankar Ray**
Research Associate
July 2015 ME, Indian Institute of Science,
Bengaluru, India.
Mentor: Professor **Saptarshi Basu**

Principal Research Interests

- Fluid Dynamics
- Turbulent Transport
- Microhydrodynamics
- Cloud Microphysics
- Turbulent Flows

List of Publications

Published/Accepted

10. *Pair statistics of oblate spheroids settling in a turbulent flow*
Prateek Anand & S.S. Ray.
Journal of Fluid Mechanics, 1009 A69 (2025)
9. *Inertial Migration in a Pressure-Driven Channel Flow: Beyond the Segre-Silberberg Pinch.*
Prateek Anand & G. Subramanian.
Physical Review Letters, 132(5), 054002 (2024).
8. *Inertial migration of a sphere in plane Couette flow.*
Prateek Anand & G. Subramanian.
Journal of Fluid Mechanics, 977, A33 (2023).
7. *Inertial migration of a neutrally buoyant spheroid in plane Poiseuille flow.*
Prateek Anand & G. Subramanian.
Journal of Fluid Mechanics, 974, A39 (2023).
6. *Orientation dynamics of sedimenting anisotropic particles in turbulence.*
Prateek Anand, S.S. Ray & G. Subramanian.
Physical Review Letters, 125(3), 034501 (2020).
5. *Stability of a liquid film flowing down an inclined anisotropic and inhomogeneous porous layer: an analytical description.*
P. Deepu, S. Kallurkar, **Prateek Anand & S. Basu.**
Journal of Fluid Mechanics, 807, 135-154 (2016).
4. *Stability of Poiseuille flow in a fluid overlying an anisotropic and inhomogeneous porous layer.*
P. Deepu, **Prateek Anand & S. Basu.**
Physical Review E, 92(2), 023009 (2015).
3. *Effects of instabilities and coherent structures on the performance of a thermocline based thermal energy storage.*
K.V. Manu, **Prateek Anand**, U.K. Chetia, & S. Basu.
Applied Thermal Engineering, 87, 768-778 (2015).

In Preparation

2. *Inertial migration of slender bodies in plane Poiseuille flow* (Pre-print available on request)
Prateek Anand & G. Subramanian.

1. *Effect of inertia on the rotation of a sedimenting triaxial ellipsoid* (Pre-print available on request)
Prateek Anand & G. Subramanian.

Service

1. **Reviewer** for **Journal of Fluid Mechanics**

(Selected) Talks/Poster presentations

1. *Motion of anisotropic particles in Turbulence*
Complex Fluids and Soft Matter, organized by the Indian Society of Rheology.
Hyderabad, India, December 2024.
2. *Beyond the Segre-Silberberg equilibria: Finite-size effects*
Suspension flows and rheology: inertia, shape and roughness matter
Nice, France, June 2023.
3. *The Segre-Silberberg effect for anisotropic particles*
Complex Fluids and Soft Matter, organized by the Indian Society of Rheology.
Virtual, December 2020.
4. *The dynamics of sedimenting anisotropic particles in turbulence*
Fluids Day, ICTS-TIFR,
Bengaluru, India, January 2020.
5. *Orientation dynamics of spheroids settling in Turbulence* (Poster)
Complex Fluids and Soft Matter, organized by Indian Society of Rheology,
Roorkee, India, December 2018.

Academic Achievements, Fellowships & Awards

- 2024 **Best Poster Award,**
Complex Fluids and Soft Matter, IIT Hyderabad.
- 2023 **Professor Roddam Narasimha and Family award** for the **Best PhD Thesis,**
Engineering Mechanics Unit, JNCASR.
- 2009 All India Rank of **3600,**
IITJEE-2009 (**top 1 percentile**).
- 2009 **Scholarship** for Excellence in Education,
Department of Posts, Government of India.
- 2008 **Championship Trophy,**
International Young Mathematician's Convention, Lucknow, India.
- 2006 **Bronze medal** in individual (junior) category,
International Young Mathematician's Convention, Lucknow, India.

Teaching Experience

- Fall, 2017 : **JF207: Introduction to Fluid Mechanics, Teaching Assistant,** JNCASR.
- Spring, 2019 : **JF306: Advanced topics in Fluid Mechanics, Teaching Assistant,** JNCASR.

Mentoring Experience

- 2023-present: **Mentor,** ICTS-TIFR.
Currently mentoring two Ph.D. students Ritwik and Rajarshi in separate projects involving turbulent flows.

Summer, **Mentor**, *Summer Research Programme*, JNCASR.

2018 : Mentored a B.Tech. from IIT Kharagpur on a project analyzing the orientation dynamics of a settling triaxial ellipsoid.

Summer, **Student Mentor**, *Student Mentoring Program*, JNCASR.

2017 : Taught Pre-University Mathematics to underprivileged school children from 12th grade in Bengaluru.

Extra-Curricular Activities

- Events participated at IIT: Inter-Hall Case study competition for 2011 and 2012, and the Inter-Hall Chemical innovation in 2012.
- Hobbies: Sketching, Drawing Portraits, Cooking, playing Badminton and keeping a fitness routine.

Languages

- Hindi (native), English (fluent)