Vatsal Sanjay — PhD

Department of Physics, Durham University
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Date of birth: Feb. 5, 1996 Updated: June 1, 2025

Education

Physics of Fluids Dept. **Univ. Twente**
Ph.D. (Appl. Phys.), Graduated cum laude (with distinction) *2018–2022*
Supervisor: Prof. Detlef Lohse.
Thesis: *Viscous free-surface flows* (OA) 10.3990/1.9789036554077.

Two-Phase Flow & Instability Lab **IIT Roorkee**
B.Tech (Mech.) & M.Tech (Thermal Eng.), Graduated with distinction (Dept. Gold Medal) *2013–2018*
Supervisor: Prof. Arup Kumar Das,
Thesis: *Understanding of mutual interactions between liquid jets* (OA) 10.13140/RG.2.2.22294.04166.

Professional Experience

Department of Physics **Durham University**
Assistant Professor, PI of Computational Multiphase Physics (CoMPhy) Lab *2025–present*
Leading research on multiphase flows and soft matter dynamics.

Physics of Fluids Dept. **Univ. Twente**
Postdoctoral Researcher, Led Computational Multiphase Physics (CoMPhy) Lab *2022–2025*
Worked on non-Newtonian free-surface flows and soft matter singularities.

Fluid Mechanics & Acoustics Lab (UMR 5509) **Univ. Claude Bernard Lyon 1**
Research Intern *May–July, 2016*
Worked on Landau–Levich dip coating.

Major Awards & Achievements

2025: **Ammodo Science Fellowship** – To study mycofluidic transport.
2024: **J. Fluid Mech. Outstanding Reviewer** – Top 1% of reviewers in 2023.
2024: **KIVI Hoogendoorn Fluid Mechanics Award** – Best PhD thesis in Netherlands (2022–2023).
2024: **Young Scientist** – 73rd Lindau Nobel Laureate Meeting (one of seven from Netherlands).
2022: **Doctor cum laude** – Top 5% of PhD graduates in 2021–2022.
2018: **Department Gold Medal** – For academic excellence at IIT Roorkee.
2015: **Summer Undergraduate Research Award** – To study bubble entrainment by impinging liquid jet.

Service to the Community

Seminars: Physics of Fluids weekly seminar (2022–2025, avg. 40 participants, 10+ international speakers/yr).
Conferences: Symposium on Bubbles & Bubbly Flows (2025, 75 participants), 35th Dutch Soft Matter Meeting (2024, 100 participants), Workshop on (De)Constructing Complex Contact Lines (2024, 25 participants).
Referee: J. Fluid Mech. (80+), Phys. Rev. (20+), PNAS (3), among others.

Research Funding

2025: Ammodo Science Fellowship (€170000) for Mycofluidic transport.
2023: 10 million CPU hours (€150000 equivalent) on Snellius HPC (Co-PI).

Scientific Outreach

Outreach: Social media manager for Physics of Fluids Dept. at BlueSky & X, APS-DFD mentor.

Supervision & Teaching

PhD: 4 students: J. Talukdar (Singularities with surfactants, 2025-now), S. Jana (Soft impacts, 2025-now), A. Bhargava (Inertial contact lines, 2024-now), A. Dixit (Non-Newtonian flows, 2023-now).

Master: 8 theses: F. Hoek (ongoing), S. Jana (IIT KGP '25), J. Talukdar (UT '25), V. Rosario (UvA '24), S. van den Heuvel (UT '23), C.H. Maurits (UvA '23), T. Appleford (UvA '22), S. Meuleman (UT '20).

Bachelor: 8 theses supervised at Univ. Twente (2019–2025).

Teaching: For teaching activities, see comphy-lab.org/teaching.

Peer-Reviewed Publications

Selected publications (20 total, 500+ citations):

- A. Bashkatov et al., **V. Sanjay**, et al., Electrolyte droplet spraying in H_2 bubbles, *Nat. Commun.* 16, 4580 (2025).
- A.K. Dixit et al., **V. Sanjay**, Viscoelastic Worthington jets, *J. Fluid Mech.* 1010, A2 (2025).
- **V. Sanjay** & D. Lohse, Unifying theory of scaling in drop impact, *Phys. Rev. Lett.* 134, 104003 (2025).
- **V. Sanjay**, B. Zhang, et al., Viscosity role on drop impact forces, *J. Fluid Mech.* 1004, A6 (2025); **Cover**.
- L. Kayal, **V. Sanjay**, et al., Focusing of concentric free-surface waves, *J. Fluid Mech.* 1003, A14 (2025).
- A.G. Balasubramanian, **V. Sanjay**, et al., Bursting bubble in elasto-viscoplastic medium, *J. Fluid Mech.* 1001, A9 (2024); **Cover**.
- **V. Sanjay**, P. Chantelot, D. Lohse, When does an impacting drop stop bouncing?, *J. Fluid Mech.* 958, A26 (2023).

Full list: Google Scholar.

Selected Talks

Invited: 19 talks: WUR, Durham, DAMTP Cambridge, Univ. Warwick, IIT Bombay, others.
Contributed: Selected talks: APS-DFD (5x), EFMC, EFDC, Liquid Matter Conf., ICR.

Metrics (as of June 1, 2025)

- **Researcher ID:** K-1856-2019
- **Orcid:** 0000-0002-4293-6099
- **Hirsch-index:** H = 9 (Google Scholar), 7 (Web of Science)
- **i10-index:** 8 (Google Scholar)
- **Research Interest Score:** 1000+ (top 2% among ResearchGate members who first published in 2015.)