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(a) Research Experience

- Theoretical physics of cell biology, Postdoctoral Fellow, December, 2022-present
Toronto Metropolitan University (TMU)
Department of Physics, Toronto, Canada

- Soft Matter (Active Matter) Physics, Postdoctoral Fellow, January, 2021-November, 2022
Skolkovo Institute of Science and Technology (Skoltech),
Applied AI Centre, Moscow, Russia

(b) Education

Indian Institute of Science Education and Research Bhopal (IISERB)	Madhya Pradesh, India	Soft Matter Physics	PhD. 2014-2020
Kumaun University	Nainital, Uttarakhand, India	Physics	M.Sc.(65.5%) 2012
Kumaun University	Nainital, Uttarakhand, India	Physics, Math, Chemistry	B.Sc.(62.6%) 2010

(c) Awards and fellowships

1. Awarded with merit scholarship by the Uttaranchal Board of Secondary Education in 10th.
2. Awarded with JEST-2014.
3. Doctor of Philosophy- July 2020 (Indian Institute of Science Education and Research Bhopal, India)
4. Postdoctoral fellowship, Skolkovo Institute of Science and Technology (Skoltech), Moscow, Russia
5. Postdoctoral fellowship, Toronto Metropolitan University (TMU), Toronto, Canada

(d) Research Interests

1. Studying the autonomous propulsion of deformable active vesicle.
2. Active vesicle under the influence of the external flow field, like the shear flow and poiseuille flow.
3. How an active vesicle behaves in viscosity varying environment.
4. How does the interplay of positive and negative chemotaxis influence the propulsion mechanism of a chemically active vesicle.
5. Chemotactic response of an inert colloid in the presence of an active colloid.
6. Self-assembly and formation of dynamical motors as a consequence of symmetry breaking.
7. Find the best strategy of target search for the biological systems.
8. Influence of a viscoelastic medium in the movement of an active vesicle.
9. How does the channel flow created by the different channel lengths change the dynamics of a deformable object?
10. Morphological changes in active grafted polymers.

(e) Technical skills

1. **Operating System:** Linux, Windows
2. **Languages known:** Fortran, Shell Scripts
3. **Tools:** Latex, Lammps, Mathematica, Gnuplot
4. **Software:** Visual Molecular Dynamics (VMD), Javaview, Paraview, Ovito

(f) Publications

1. Diffusiophoretically induced interactions between chemically active and inert particles. Soft Matter, 14, 6043-6057, 2018 (https://pubs.rsc.org/en/content/articlepdf/2018/sm/c8sm01102h)
2. Chemical micromotors self-assemble and self-propel by spontaneous symmetry breaking. Chem. Commun., 54, 11933-11936, 2018 (https://pubs.rsc.org/en/content/articlepdf/2018/cc/c8cc06467a)
3. Dynamics of diffusiophoretic vesicle under external shear flow. J. Chem. Phys. 151, 064901, 2019 (https://aip.scitation.org/doi/full/10.1063/1.5112808)
4. Colloidal chemotaxis and a biased random walk model with finite mean first passage time. EPL, 128, 20001, 2019 (https://iopscience.iop.org/article/10.1209/0295-5075/128/20001)
5. Formation of self-propelling clusters starting from randomly dispersed Brownian particles. Bulletin of Materials Science 43, 183, 2020 (https://link.springer.com/article/10.1007/s12034-020-0210
6. Effect of Poiseuille flow on the dynamics of active vesicle, Soft Materials. 19:3, 359-372, 2021 (https://doi.org/10.1080/1539445X.2021.1937222)
7. Conformations and dynamics of active star polymers (https://arxiv.org/pdf/2210.04069.pdf)

(g) Conferences attended

1. **Compflu-2017**, Indian Institute of Technology Madaras, India (18-20 December 2017, Presented poster on "Active vesicle propulsion")
2. **SMYIM-2018**, Koti resorts, Shimla, India (23-25 May 2018, presented a poster on "Diffusiophoretically induced interactions between chemically active and inert particles")
3. **Designer Soft Matter 2018**, Nanyang Technological University, Singapore (06-08 June 2018, presented a poster on "Chemical micromotors self-assemble and self-propel by spontaneous symmetry breaking")
4. **Compflu-2019**, Indian Institute of Science Education and Research Bhopal, India (05-07 December 2019, presented a poster on "Dynamics of diffusiophoretic vesicle under external shear flow")
5. **Advanced School in Soft Condensed Matter - Solutions in Summer 2021**, Online (05-09 July 2021, presented a poster on "Self-Propulsion in rigid and deformable objects through diffusiophoresis phenomena")

(h) Teaching Assistant

1. Teaching assistant for 'Quantum Physics', 'Thermal Physics', 'Basic Electronics', 'Numerical Methods', 'General Physics Laboratory-I', 'General Physics Laboratory-III', for UG courses at IISER Bhopal India.
2. Teaching assistant for 'Computational Physics', for PG course at IISER Bhopal India.
3. Mentored two students during their MS project at IISER Bhopal India.