

1. Personal Information

- **Name:** Dr. Praveen Mohanrao Somwanshi.
- **Position:** Visiting Faculty.
- **Department:** Department of Mechanical Engineering, SGGSI & T, Nanded.
- **Contact Information:** somwanshipraveen@sggs.ac.in, Computational Fluid Dynamics Laboratory, 08090119846.

2. Educational Background

- **Degrees:**
DSc (Physical and Mathematical Science), Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, appeared.
PhD (Mechanical Engineering), Indian Institute of Technology Kanpur.
ME (Mechanical Engineering), Indian Institute of Science Bangalore.
BE (Mechanical Engineering), SRTM University, Nanded.
- **Postdoctoral Experience:** post-doctoral Fellow at IIT Kanpur (2 years, 8 months).
- **Certifications:** NA.

3. Research Interests

- **Areas of Expertise:** Droplets and Sprays, Computational Fluid Dynamics, Fluid Mechanics, Heat Transfer, Dropwise Condensation, Interfacial Dynamics, Parallel Computing, Spray Impingement Cooling and Surface Texturing.
- **Ongoing Projects:** NA.
- **Interdisciplinary Work:** NA.

4. Teaching Experience

- **Courses Taught:** Computational Fluid Dynamics, Heat Transfer, Fluid Mechanics, Applied Thermodynamics, Viscous Flow Theory, Conduction and Radiation, Convection, Experimental Methods in Fluid and Thermal Sciences, Interfacial Phenomenon and its Application.
- **Course Development:** Image Processing in Fluid and Thermal Sciences, Parallel Computing.

5. Publications and Presentations (Plz provide Google scholar link)

- **Books: 8.**

1. Somwanshi, P., Muralidhar, K., and Khandekar, S. (2020). Coalescence dynamics of drops over a hydrophobic surface. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
2. Somwanshi, P., Muralidhar, K., and Khandekar, S. (2020). Finite time coalescence in dropwisecondensation. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
3. Somwanshi, P., and Muralidhar, K. (2020). Simulation in parallel environment. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
4. Sikarwar, B. S., Somwanshi, P., Muralidhar, K., and Khandekar, S. (2020). Simulation: Dropwise condensation of water. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
5. Somwanshi, P., Muralidhar, K., and Khandekar, S. Dropwise condensation of bismuth on horizontal and vertical surfaces. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
6. Yadav, M. K., Somwanshi, P., Khandekar, S., Chatterjee, S., Gogna, M., Muralidhar, K., and Bhattacharjee, S. (2020). Surface preparation: Some techniques. In Khandekar S. and Muralidhar K. (Eds.). *Drop Dynamics and Dropwise Condensation on Textured Surfaces*, Switzerland:Springer.
7. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2018). Coalescence Characteristics of Liquid Drops with Application to Dropwise Condensation. In Basu, S., Agarwal, A. K., Mukhopadhyay, A., and Patel, C. (Eds.). *Applications Paradigms of Droplet and Spray Transport: Paradigms and Applications*. Singapore:Springer.
8. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2017). Wall shear rates generated during coalescence of pendant and sessile drops. In Saha, A. K., Das, D., Srivastava, R., Panigrahi, P. K. and Muralidhar K. (Eds.). *Fluid Mechanics and Fluid Power–Contemporary Research. Proceedings of the 5th international and 41st national conference on FMFP 2014*, Kanpur, India:Springer.

- **Journal Articles: 09.**

1. Mungalov, A. S., Sibiryakov, N. E., Kochkin, D. Y., Cheverda, V. V., and Somwanshi, P. M. (2024). Turbulent impinging air jet for cooling the heated

surfaces. Eurasian Journal of Mathematical and Computer Applications, In press.

2. Somwanshi, P. M., and Cheverda, V. V. (2024). Visualization of coalescence of liquid drops over a hydrophobic surface. *Journal of Flow Visualization and Image Processing*, 12(3), 91-104.
3. Somvanshi, P. M., Cheverda, V. V., and Kabov, O. A. (2023). Interaction of a liquid drop with a superhydrophobic surface. *Journal of Applied and Industrial Mathematics*, 17(2), 405–413.
4. Somwanshi, P. M., Cheverda, V., Muralidhar, K., Khandekar, S., and Kabov, O. A. (2022). Understanding vertical coalescence dynamics of liquid drops over a superhydrophobic surface using high-speed orthographic visualization. *Experiments in Fluids*, 63 (47), 1– 21.
5. Somwanshi, P. M., Muralidhar, K., Khandekar, S., and Cheverda, V. (2020). Mixing and wall heat transfer during vertical coalescence of drops placed over a superhydrophobic surface. *Interfacial Phenomena and Heat Transfer*, 8 (3), 207–224.
6. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2020). Coalescence of vertically aligned drops over a superhydrophobic surface. *Physics of Fluids*, 32, 052106 (was an editor's pick).
7. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2018). Coalescence characteristics of drops on hydrophobic surfaces. *Physics of Fluids*, 30, 092103.
8. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2018). Dropwise condensation patterns of bismuth on horizontal and vertical surfaces. *International Journal of Heat and Mass Transfer*, 122, 1024–1039.
9. Gunjan, M. R., Somwanshi, P., Agrawal, A., Khandekar, S., and Muralidhar, K. (2015). Recoil of drops during coalescence on superhydrophobic surfaces. *Interfacial Phenomena and Heat Transfer*, 3 (2), 203–220.

• **Conference Papers:** 08.

1. Somwanshi, P. M., Cheverda, V. V., Muralidhar, K., and Kabov, O. A. (2024, December 21–23). Coalescence of Vertically Oriented water drops over a surface with a wettability jump. *Proceedings of the 11th and 51st National Conference on Fluid Mechanics and Fluid Power*, AMU, Aligarh, India.
2. Cheverda, V. V., Somwanshi, P. M., Kabov, O. A., and Karchevsky, A. L. (2023, August 14–18). Heat Flux Density in the Contact Line of the Heated Sessile Droplet During Coalescence Phenomena. *Proceedings of the 17th International Heat Transfer Conference*, Cape Town, South Africa.

3. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2019, December 9–11). Influence of contact line models on the instant of drop recoil during coalescence of vertical water drops on a hydrophobic surface. Proceedings of the 46th National Conference on Fluid Mechanics and Fluid Power, PSG College of Technology, Coimbatore, India.
4. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2019, April 14–17). Vertical coalescence characteristics of liquid droplets placed over a hydrophobic surface. Proceedings of the 4th Thermal and Fluid Thermal Engineering Conference (ASTFE), Las Vegas, NV, USA.
5. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2017, December 14–16). Dropwise condensation patterns of water on horizontal and vertical surfaces. Proceedings of the 44th National Conference on Fluid Mechanics and Fluid Power, Amrita University, Kollam, Kerala, India.
6. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2015, December 17–20). Effect of drop coalescence on wall shear stress and heat transfer in dropwise condensation of bismuth. Proceedings of the 23rd National Heat and Mass Transfer Conference and 1st International ISHMT–ASTFE Heat and Mass Transfer Conference, Thiruvananthapuram, India.
7. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2014, August 10–15). Influence of drop shape and coalescence on dropwise condensation over textured surfaces. Proceedings of the 15th International Heat Transfer Conference, Kyoto, Japan.
8. Somwanshi, P. M., Muralidhar, K., and Khandekar, S. (2013, December 12–14). Experimental investigation of wall shear stress developed during coalescence of two pendant drops. Proceedings of the 40th National Conference on Fluid Mechanics and Fluid Power, NIT Hamirpur, Himachal Pradesh, India.

- **Patents:** 01.

Kochkin, D. Y., Kabov, O. A., Mungalov, A. S., Bykovskaya, E. F., Cheverda, V. V., and Somwanshi, P. M. (2024). Cooling enhancement of heated Surfaces using Electro-Spray, Russian Patents, Filed.

- **Editorial Work:**

1. Associate Editor and Member, Editorial Board, Interfacial Phenomenon and Heat Transfer
2. Reviewer: Colloids and Surfaces A: Physicochemical and Engineering Aspects, Experiments in Fluids, Interfacial Phenomenon and Heat Transfer, Journal of Flow Visualization and Image Processing, Physics of Fluids.

6. Awards and Honors

- **Grants:**

Two-phase Thermal Management System for Surfaces Dissipating High Heat Fluxes,

Duration: July, 2021 – June, 2024,

Funding: 18 million Ruble,

Role: Principal Investigator,

Source: Russian Science Foundation.

- **Awards:** NA.

- **Fellowships:** Prestigious fellowships or memberships in scholarly societies.

7. Professional Experience

- **Administrative Roles:** NA.

- **Industry Collaboration:** NA.

- **Consulting Work:** NA.

8. Supervision and Mentoring

- **PhD/Master's Supervision:** NA.

9. Professional Memberships

- **Associations:** Life member of ISTE, New Delhi.

10. Miscellaneous

- **Languages:** English, Hindi, Marathi, Russian, Sanskrit.

- **Skills:**

Operating Systems: Linux/Unix, Windows.

Programming Languages: C, C++, Python, MATLAB.

Parallel Programming: OpenMP, MPI, CUDA, OpenCL, OpenACC.

Open Source Codes: OpenFOAM, Basilisk.

Other Softwares: COMSOL, Tecplot, gnuplot, LATEX.

- **Personal Interests:** Cooking, Listening music, Reading.