



## Dr. Saurabh Sangal

**Designation:** Assistant Professor

**Department:** Mechanical Engineering

**Institution:** Harcourt Butler Technical University (HBTU), Kanpur

**Email:** [Saurabh.s@hbtu.ac.in](mailto:Saurabh.s@hbtu.ac.in)

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### Academic Qualifications

- Ph.D. – [Indian Institute of Technology, Roorkee]-2016-2022
  - M.Tech. – [Indian Institute of Technology, Roorkee]-2011-2013
  - B.Tech. Mechanical Engineering – [Punjab Technical University]-2006-2010
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### Areas of Specialization

- Turbomachinery
  - Fluid Mechanics and Hydraulic Machines
  - Cavitation and Erosion Studies
  - Thermal Engineering
  - Condition Monitoring and Predictive Maintenance
  - Industry 4.0 in Mechanical Systems
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### Teaching Interests

- Fluid Mechanics
- Hydraulic Machines
- Strength of Materials
- Heat Transfer
- Renewable Energy Systems

## Research Interests

My research focuses on turbomachinery performance analysis, cavitation phenomena, erosion mechanisms in hydraulic machines, and data-driven diagnostics of rotating machinery. My work integrates experimental investigations with analytical and empirical modeling approaches. I am also actively exploring the application of Industry 4.0 tools such as smart sensing, condition monitoring, and predictive analytics in mechanical systems.

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## Research Publications

Published research papers in reputed peer-reviewed national and international journals in the areas of turbomachinery, cavitation, and hydraulic systems.

- **Saurabh Sangal, Arpit Garg, and Dinesh Kumar.** 2013. "Review of Optimal Selection of Turbines for Hydroelectric projects". International Journal of Emerging Technology and Advanced Engineering (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 3, Issue 3.
  - **D Kumar, S Sangal, RP Saini.** 2013. "Flow Analysis of Kaplan Hydraulic Turbine by Computational Fluid Dynamics". International Journal of Applied Engineering Research.
  - **Saurabh Sangal, MK Singhal, and RP Saini.** 2018. "Hydro-Abrasive Erosion in Hydro Turbines: A Review." International Journal of Green Energy (Taylor&Francis),15:4, pp.232-253.
  - **Saurabh Sangal, MK Singhal, RP Saini and G.S. Tomar.** 2022. "Hydro-abrasive erosion modeling in Francis turbine at different silt conditions". Sustainable Energy Technologies and Assessments (Elsevier). Vol. 53, pp. 102616.
  - **Saurabh Sangal, Mukesh Kumar Singhal, Gaurav Saini.** 2025. "Sensitivity analysis of IEC 62364 erosion model in predicting hydro-abrasive erosion in Francis turbine: a case study of Maneri Bhali-II hydropower plant, India" The European Physical Journal Special Topics, Pages 1-17. Publisher Springer Berlin Heidelberg.
  - **Saurabh Sangal, MK Singhal, RP Saini.** 2016. "CFD based analysis of silt erosion in Kaplan hydraulic turbine". International Conference on Signal Processing, Communication, Power and Embedded System (SCOPE5). 978-1-5090-4620-1/16/\$31.00 ©2016 IEEE.
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## Administrative Responsibility

- Deputy Registrar (Legal), HBTU Kanpur.
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## Skills

- SOLIDWORKS, ANSYS