

## Faculty Profile

Name : Dr. Sathisha H. M.  
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### **About Me**

Dr. Sathisha H. M. is currently working as an Assistant Professor in the Department of Mechanical Engineering at The National Institute of Engineering, Mysore. He completed his Ph.D. from IIT Guwahati in Mechanical Engineering with research focused on thermo-electro-hydrodynamic analysis of all-vanadium redox flow batteries using numerical simulation and lumped modeling approaches. His research interests include Computational Fluid Dynamics (CFD), computational heat transfer, multiphase flow, renewable energy systems, and redox flow batteries. He has teaching experience at reputed institutions including NIE Mysore, BMS College of Engineering, and PES University. He has published research papers in international journals and conferences in the areas of thermal sciences, CFD, and energy systems. His work integrates numerical simulations with experimental validation for solving complex engineering problems.

### **Qualification**

B.E. (Mechanical Engineering), PES Institute of Technology, Bangalore  
M.Tech (Thermal Engineering), NITK Surathkal  
Ph.D. (Mechanical Engineering), IIT Guwahati

### **Courses Taught**

List of 5-6 UG courses taught in recent years

### **UG Courses**

1. Heat Transfer
2. Fluid Mechanics
3. Engineering Thermodynamics
4. Renewable Energy Systems
5. Turbomachines

### **PG Courses**

1. Advanced Heat Transfer
2. Computational Fluid Dynamics

## Publications

### Journal Publications

1. Managuli S.C., Aswath., **Sathisha H.M.**, and K.N. Seetharamu (2020): “Experimental and Numerical Simulation of Heat and Mass Transfer Along with Stresses in Fruits”, *International Journal of Advanced Science and Technology*, 29(9s), pp. 6738–6751.
2. Managuli S.C., Aswath., **Sathisha H.M.**, and K.N. Seetharamu (2020): “Experimental and Numerical Simulation of Heat and Mass Transfer along with Stresses in Solanum Melongena (Brinjal)”, *International Journal of Test Engineering and Management*, 83.
3. Managuli S.C., Aswath., **Sathisha H.M.**, and K.N. Seetharamu (2019): “Numerical Simulation of Heat and Mass Transfer along with Shrinkages in Brinjal”, *International Journal of Recent Technology and Engineering*, 8(4), pp. 2867–2872.
4. **Sathisha H.M.** and Amaresh Dalal (2015): “2D Unsteady Simulation of All-Vanadium Redox Flow Battery”, *ASME Journal of Thermal Science and Engineering Applications*, 8(1), pp. 011019.
5. **Sathisha H.M.** and Amaresh Dalal (2018): “An Unsteady Model to Study the Effects of Porosity and Temperature in All-Vanadium Redox Flow Battery with Mass Transfer and Ion Diffusion”, in *Sustainable Energy Technology and Policies*, Springer.
6. **Sathisha H.M.** and Amaresh Dalal (2017): “3D Unsteady Numerical Simulation of All-Vanadium Redox Flow Battery”, in *Fluid Mechanics and Fluid Power – Contemporary Research*, Springer.

### Conference Proceedings

1. **Sathisha H.M.** and Dalal A. (2013): “Simplified Mathematical Model to Evaluate the Performance of the All-Vanadium Redox Flow Battery”, *ASME Summer Heat Transfer Conference*, Minneapolis, USA.
2. **Sathisha H.M.** and Dalal A. (2013): “2D Transient Numerical Simulation of All-Vanadium Redox Flow Battery”, *ISHMT-ASME Heat and Mass Transfer Conference*, IIT Kharagpur, India.
3. **Sathisha H.M.** and Dalal A. (2014): “3D Unsteady Numerical Simulation of All-Vanadium Redox Flow Battery”, *National Conference on Fluid Mechanics and Fluid Power*, IIT Kanpur, India.
4. **Sathisha H.M.** and Dalal A. (2015): “A Lumped Thermal Model for All-Vanadium Redox Flow Batteries”, *ISHMT-ASTFE Heat and Mass Transfer Conference*, ISRO Trivandrum, India.
5. Sathisha H.M., P. Kondaiah, Ravikiran Kadoli and Appukuttan K.K. (2010): “Investigation on Free Vibration Due to Laminar Flow of Lubricant in a Pipe”, *International Conference on Frontiers in Mechanical Engineering*, NITK Surathkal.

## Other Achievements

- Qualified **Graduate Aptitude Test in Engineering (GATE)** with **88 percentile** (AIR: 2737).
- Expertise in **Computational Fluid Dynamics (CFD) simulations** using ANSYS Fluent, OpenFOAM, and COMSOL Multiphysics.
- Experience in numerical modeling of **energy storage systems and thermal engineering applications**.
- Research contributions in **heat transfer, multiphase flow, and renewable energy systems**.
- Experience guiding **undergraduate and postgraduate student projects** in thermal and CFD areas.