

Varun Joshi

163, Shraddha, Shikshak Society,
Bhavnagar-364002, Gujarat, India

M. +91 9033299956
here.varunjoshi@gmail.com

Academic Credentials

Ph.D. **Mechanical Engineering, NIT, Surat.**

Year of passing: May, 2020

Thesis title: Thermal Transport Augmentation in Fins and Metal Foam Infused Latent Heat Thermal Energy Storage Systems

Thesis supervisor: Dr. Manish K Rathod, Assistant Professor, Mechanical Engineering Department, SVNIT

M.Tech **Energy Systems and Technology - Focused on Solar Energy,**

School of Solar Energy, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat.

CGPI: 7.39/10, Year of passing: 2013-2015

B.E. **Mechanical Engineering,**

C.K.Pithawalla College of Enggineering & Technology, Surat. Gujarat Technological University.

CGPI: 7.82/10, Year of passing: 2010-2013

Diploma **Mechanical Engineering,**

Nirma University, Ahmedabad.

CGPI: 8.63/10, Year of passing: 2006-2010

Research Publications

International journal articles published:

- [1] **Joshi Varun**, Rathod Manish K. Thermal performance augmentation of metal foam infused phase change material using a partial filling strategy: An evaluation for fill height ratio and porosity. *Applied Energy, Elsevier*. Vol 253, 113621, 2019. **IF: 8.42**
- [2] **Joshi Varun**, Rathod Manish K. Thermal transport augmentation in latent heat thermal energy storage system by partially filled metal foam: A novel configuration. *Journal of Energy Storage, Elsevier*. Vol. 22, pp. 270-282, 2019. **IF: 3.51**

- [3] **Joshi Varun**, Rathod Manish K. Constructal enhancement of thermal transport in latent heat storage systems assisted with fins. *International Journal of Thermal Sciences, Elsevier*. Vol 145, 105984, 2019. **IF: 3.48**
- [4] **Joshi Varun**, Rathod Manish K. Constructal Enhancement of Thermal Transport in Metal Foam-PCM Composite Assisted Latent Heat Thermal Energy Storage System. *Numerical heat transfer, Part A: Applications, Taylor & Francis*. Vol. 75, pp. 413-433, 2019. **IF: 1.953**
- [5] **Joshi Varun**, Rathod Manish K. Experimental and Numerical Assessments of Thermal Transport in Fins and Metal Foam Infused Latent Heat Thermal Energy Storage Systems: A Comparative Evaluation. *Applied Thermal Engineering, Elsevier*. Jun 2:115518, 2020. **IF: 4.02**

International journal articles: Revision submitted

- [1] Patel Jay, **Joshi Varun**, Rathod Manish K. Thermal performance investigations of the melting and solidification in differently shaped macro-capsules saturated with phase change material. *Journal of Energy Storage, Elsevier*.

International conference article:

- [1] **Joshi Varun**, Rathod Manish K. Constructal Enhancement of Fins Design Integrated to Phase Change Materials. *ICRETRER 2018: 20th International Conference on Renewable Energy Technologies and Regenerative Energy Recovery, World Academy of Science and Technology, Sydney, Australia, February, 1-2, 2018. (Awarded for the best research paper)*
- [2] **Joshi Varun**, KV Akhil, Rathod Manish K. Real-time visual and quantitative investigation on melting characteristics in latent heat thermal energy storage system infused with partial fins. 11th International Conference on Applied Energy 2019, August 12-15, 2019, Vasteras, Sweden. Paper ID: 0409

Area of Interest

- [1] Thermal Energy Storage Systems with Phase Change Materials
- [2] Phase Change in Open Cell Metal Foams
- [3] Heat Transfer and Thermal Sciences
- [4] Solar Thermal Energy Systems and Photovoltaics

Courses and Training Attended

- [1] GIAN course on “Exergy Analysis of Industrial Processes”, NIT Warangal, February 11-15, 2019. Credits earned: **1 (A grade)**
- [2] GIAN course on “Recent Advances in PCM based Cooling Technology”, Indian Institute of Technology, Bhubaneswar, Dec 11-15, 2017. Credits earned: **1 (A grade)**
- [3] GIAN course on “A Second Law Analysis of Thermal Energy Storage Systems”, Indian Institute of Technology, Indore, July 17 - 22, 2017. Credits earned: **1 (A grade)**
- [4] GIAN course on “Advances in Renewable Energy Technologies”, National Institute of technology, Calicut, January 2 -13, 2017. Credits earned: **2 (A grade)**
- [5] GIAN course on “An advanced introduction to the finite volume methods in computational fluid dynamics (with open foam)”, Indian Institute of Technology, Indore, September 5 - 9, 2016. Credits earned: **1 (A grade)**
- [6] TEQIP-II sponsored One Week STTP on “Solar Photovoltaic Energy: Contemporary Technologies and Recent Advances (SPECTRA-2016)”, SVNIT, Surat. October 8-12, 2016.
- [7] International workshop on “Design of Sub-System for CSP Technologies”, IIT Jodhpur. December, 2013.
- [8] A six week internship at National Institute of Solar Energy, Ministry of New and Renewable (MNRE), India to study of triple and double effect refrigeration plants, 1 MWe solar thermal power plant and its operation & maintenance strategy.

Personal Details

Programming: C, ANSYS-FLUENT, TRANSYS, MATLAB

Skills: Finite Volume Method, Finite Difference Method, Basic Lattice Boltzmann Method

DOB: May 15, 1991

Language: English, Hindi, and Gujarati

References

Dr. Manish K Rathod, Assistant Professor, Mechanical Engineering Department, SVNIT, Surat.
M: +91-9904003856, Email: mkr@med.svnit.ac.in

Dr. Purnanand Bhale, Associate Professor, Mechanical Engineering Department, SVNIT, Surat.
M: +91-9974751060, Email: pvb@med.svnit.ac.in