

Curriculum Vitae

Vikas Verma

Department: Energy
University: Tezpur University
Date of Birth: 01st January, 1990
Gender: Male
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Education

PhD (Mechanical and Industrial Engineering)

Indian Institute of Technology Roorkee, 2017

Topic: Study of Thermal Performance of a Solar Assisted Ground Source Heat Pump System

M Tech (Thermal Engineering)

National Institute of Technology Kurukshetra, 2011

Project: Regeneration and Dehumidification of Activated Alumina in Humid Climate through Solar Air Heater-An Empirical Study

B Tech (Mechanical Engineering)

Hindustan College of Science & Technology - Uttar Pradesh, 2009

Project: Fabrication of Tube Bending machine

Work Experience

Designation: Assistant Professor
Institute: Tezpur University
Department: Energy
Period: 12 April 2017 – till date
Teaching Courses: Heat Transfer, Advanced Solar Thermal Energy, Energy Environment Interaction
Lab: Energy Laboratory, Energy Systems and Simulation Laboratory

Designation: Pro-Term Lecturer
Institute: Greater Noida Institute of Technology (GNIT), Greater Noida, U.P
Department: Mechanical and Industrial Engineering
Period: 16 Aug 2011 to 12 July 2012
Teaching Courses: Internal Combustion Engine, Advance Welding technology, Theory of Machine, CAD

Field of Interest

- Solar Energy
- Heat Transfer
- Hydrogen Technology
- Energy Storage
- Heat Pump & Air conditioning system
- Radiant heating and Cooling
- Nanoparticle

M. Tech Student Project Supervision

Topic	Student Name	Status	Year	
Design and Performance Evaluation of Double Slope Solar Still Using Hollow Circular Fins with Splitter Plate	Vivek Prasad	Completed	2022	
Nucleate Boiling Heat Transfer Study on Large Diameter Cylinder	Sohit Singh	Completed	2022	Co-supervisor: Dr. Chandan Swaroop Meena, Scientist, CSIR-CBRI, Roorkee
Performance analysis of A Radiant System	Dilan Plaban Baruah	Completed	2022	
Study and Analysis of Functional Groups Removal for Obtaining Reduced Graphene Oxide Films	Lopamudra Baruah	Completed	2020	
Low Cost Solar Air Heater	Vasudevan C M	Completed	2020	Co-supervisor: Jijo P Ulahannan Government College Kasargod, Kerala
Thermal Estimation of Diesel Locomotive and Possible Heat Recovery	Abhinav Phangcho Choudhury	Completed	2019	Co-supervisor: Mr. Kamal Jyoti Deka, Diesel Traction Training Centre, Guwahati

Performance Analysis of Solar Assisted Water Electrolyzer	Nayan Moni Baishya	Completed	2019
Waste Heat Recovery for Regeneration of Desiccant Materials	Partha Pratim Saikia	Completed	2019
Design and Feasibility Study of A Packed Bed Shell and Tube Heat Exchanger for Dehumidification	Nishigandha Mishra	Completed	2019
Waste heat recovery in Solar System	Raktim Saikia	Completed	2019
Thermal Performance of Ground Heat Exchanger	Angsuman Phukan	Completed	2018

B.VOC Project Supervision

Topic	Student Name	Status	Year
Theoretical analysis of Conventional and Two Pot Waste Heat Recovery Cookstove	Manash Jyoti Gogoi	Completed	2020
Comparative Analysis of Traditional and Modified Waste Heat Recovery Cook Stove	Debanga Rajkhowa	Completed	2020
Study of Thermal Performance Analysis of Double Flow Flat Plate Solar Collector	Mukesh Kumar Ram	Completed	2019
Study of Thermal Performance of a Flat Plate Solar Collector System	Saddam Aziz	Completed	2018

CODL Project Supervision

Topic	Student Name	Status	Year
A Study of The Efficiency of Crude Oil Furnace At Crude Distillation Unit In Digboi Refinery	Abdul Aziz	Completed	2018

Invited talk

- Solar Assisted Ground Source Heat Pump System at One-day awareness programme on Renewable Energy on 17th April 2018, Department of Mechanical Engineering, College of Engineering Roorkee, Uttarakhand.
- Performance Analysis of Solar Assisted Geothermal Heat Pump at AICTE Sponsored Faculty Development Programme On Thermodynamic Analyses Of Energy Systems 12th -16th July 2021, Department of Mechanical Engineering, Institute of Engineering & Technology, DAVV, Indore.
- Performance Evaluation of Double Slope Solar Still Using Hollow Circular Fins with Splitter Plate at Rakshpal Bahadur College of Engineering and Technology (RBCET), Bareilly on Emerging Technologies in Mechanical Engineering” 8th and 9th November 2022.

International Journal Reviewer

- Solar Energy
- Applied Energy
- Environmental Progress & Sustainable Energy
- Energy and Buildings

Awards/Honours:

- ❖ Seed Research Grant No. (TU/Fin/Conc./R/2021-22/412), funded by Tezpur University.
- ❖ 02 Best Paper award in the International Conference on Materials and System Engineering (ICMSE-2021), organized by Department of Mechanical Engineering, SJB Institute of Technology, Bengaluru, India, 7th – 8th May, 2021.
- ❖ Participated in **3rd Brics Young Scientist Forum, held at Durban, South Africa, 25-29 June, 2018**, (funded by DST, India).
- ❖ International travel grant to present research work in Kuala Lumpur, Malaysia, 11-14 December, 2018 (ITS/2018/005349) (funded by DST, India).
- ❖ In 2018, my research work on space heating application through SAGSHP, release in press such as; *India Today*, *Times of India*, *The Education Times*, *Edex Live*.
<https://www.indiatoday.in/education-today/news/story/iit-roorkee-phd-student-solar-powered-heaters-remote-areas-energy-in-winters-1301280-2018-07-31>
<http://theeducationtimes.in/2018/07/31/iit-roorkees-phd-scholars-study-says-solar-energy-available-during-the-winter-season-could-be-used-effectively-for-heating/>

Publications

International Journal

1. Ratnadeep Nath, **Vikas Verma**, Rahul Tarodiya, “Optimization of a Radiant System for Hydrothermal Performance Using Taguchi and Utility Concept ” *Journal of Thermal Science and Engineering Applications*, ASME, Vol. 14 (2022), pp. 021014.
<https://doi.org/10.1115/1.4052523>
2. Sudipta Saikia, **Vikas Verma**, Biraj Kumar Kakati, T. Sivasakthivel, Rahul Tarodiya, “Optimization of Solar Integrated Electrolyser System for Hydrogen Production Using Taguchi Method” *Materials Today: Proceedings- Elsevier*, Vol. 49 (2022), pp. 397-402.
<https://doi.org/10.1016/j.matpr.2021.02.304>
3. R. Tarodiya, **V. Verma**, and T. Sivasakthivel, “A study on utilization of ground source energy for space heating using a nanofluid as a heat carrier”, *Heat Transfer (Wiley)*, 2021, 1–19. DOI: 10.1002/htj.22054
4. Sivasakthivel Thangavel, **Vikas Verma**, Rahul Tarodiya, and Parameswari Kaliyaperumal, “A study on Optimization of Horizontal Ground Heat Exchanger parameters for space heating application” *Materials Today: Proceedings- Elsevier*, Vol. 47 (2021), pp. 2293-2298. **<https://doi.org/10.1016/j.matpr.2021.04.245>**

5. Arup Chandra Saha, **Vikas Verma**, Rahul Tarodiya, M.R. Mahboob, Rajesh Kumar, “Analytical modeling of a radiant cooling system for thermal performance analysis” *Materials Today: Proceedings- Elsevier*, Vol. 47 (2021), pp. 2474-2480.
<https://doi.org/10.1016/j.matpr.2021.04.553>
6. Sivasakthivel Thangavel, **Vikas Verma**, Rahul Tarodiya, Parameswari Kaliyaperumal, “Comparative analysis and evaluation of different working fluids for the organic rankine cycle performance”, *Materials Today: Proceedings- Elsevier*, Vol. 47 (2021), pp. 2580-2584. **<https://doi.org/10.1016/j.matpr.2021.05.064>**
7. **Vikas Verma** and K. Murugesan, “Experimental study of solar assisted ground source heat pump system fir short term space heating operation from morning to evening”, *Journal of Mechanical Science and technology-Springer*, Vol. 32 (2018), pp.391–398.
DOI: 10.1007/s12206-017-1239-1
8. **Vikas Verma** and K. Murugesan, “Experimental study of solar energy storage and space heating using solar assisted ground source heat pump system for Indian climatic conditions”, *Energy and Buildings- Elsevier*, Vol. 139 (2017), pp. 569–577.
<https://doi.org/10.1016/j.enbuild.2017.01.041>
9. Sivasakthivel. T, Philippe. M, Murugesan. K, **Vikas Verma**, Hu. Pingfang, “Experimental thermal performance analysis of ground heat exchangers for space heating and cooling applications”, *Renewable Energy*, Vol. 113 (2017), pp. 1168 – 1181.
<http://dx.doi.org/10.1016/j.renene.2017.06.098>
10. **Vikas Verma** and K. Murugesan, “Optimization of Solar Assisted Ground Source Heat Pump System for Space Heating Application by Taguchi Method and utility concept”, *Energy and Buildings- Elsevier*, Vol. 82 (2014), pp. 296–309.
<http://dx.doi.org/10.1016/j.enbuild.2014.07.029>

International Conference

1. **Vikas Verma**, K. Murugesan and Biraj Kumar Kataki, “Optimization of Solar Coupled Heat Pump System for Space Heating Application using Taguchi Method” International Conference on Sustainable Energy and Green Technology 2018 (SEGT 2018) 11-14 December 2018 Kuala Lumpur, Malaysia.
IOP Conf. Series: Earth and Environmental Science 268 (2019) 012045
DOI:10.1088/1755-1315/268/1/012045
2. Syeda Mushrifa Zahan, Biraj Kumar Kakati and **Vikas Verma**, “Synthesis and characterisation of nitrogen doped graphene oxide via pyrolysis of processed shrimp cell” International Conference on Sustainable Energy and Green Technology 2018 (SEGT 2018) 11-14 December 2018 Kuala Lumpur, Malaysia.
IOP Conf. Series: Earth and Environmental Science 268 (2019) 012040

3. **Vikas Verma** and K. Murugesan, “Taguchi And Utility Concept Optimization of Parabolic Solar Collector Assisted Ground Coupled Heat Pump System for Space Heating Applications”, *24th IIR International Congress of Refrigeration, ICR-2015, 16 to 22 August, Yokohama, Japan.*
4. **Vikas Verma** and K. Murugesan, “Study on Solar Assisted Ground Heat Exchanger for Building Heating”, *22th National and 11th International ISHMT-ASME Heat and Mass Transfer Conference, IIT Kharagpur, paper number: HMTTC1300345, 28-30th December 2013.*

National Conference

1. **Vikas Verma** and K. Murugesan, “Performance Analysis of Solar Assisted Ground Source Heat Pump system”, *Pan IIT Research Expo, IIT Madras, India, 3-7, January 2014.*

Book Chapter

1. Panchali Borthakur, Neelim Kumar Lahon, Biraj Kumar Kakati, Vikas Verma, “Multiphysics Simulation of a Polymer Electrolyte Fuel Cell (PEFC) to Study Its Polarization Characteristics Under Different Oxygen Concentrations”, *Recent Advances in Mechanical Engineering 2022. DOI: 10.1007/978-981-19-2188-9_44*
2. **Vikas Verma**, “Optimization of Multi-Parabolic Profile Flat-Plate Solar Collector for Space-Heating Application”, *Advances in Energy Technology, Springer Proceedings of ICAET 2020. DOI: 10.1007/978-981-15-8700-9_18*
3. Rajesh Kumar, Manoj Gwalwanshi, **Vikas Verma**, Rahul Tarodiya and Manoj Kumar, “Performance Optimization of a Pine Oil-Fueled Agricultural Engine Using Grey – Taguchi Approach”, *Renewable Energy Systems- Scrivener Publishing LLC (2022), ISBN: 9781119803515.*
4. Sudipta Saikia, **Vikas Verma**, Sivasakthivel Thangavel, Rahul Tarodiya and Rajesh Kumar, “Optimization of PV Electrolyzer for Hydrogen Production “, *Renewable Energy Systems- Scrivener Publishing LLC (2022), ISBN: 9781119803515.*

Patent:

Published (India), Application No.202211036216 A, Publication Date: 08/07/2022; Title: SMART TOILET MANAGEMENT SYSTEM.

Seminar/Workshop/Training Programme Organised

- National Symposium on Sustainable Waste Management (SWM) 03rd August 2019, Organized by Department of Energy, Tezpur University under the aegis of International Society of Waste Management, Air and Water (ISWMAW) Consortium of Researchers in

International Collaboration (CRIC) (**Secretary**)

- Faculty Development Programme on Advances in Renewable Energy Technologies and Systems, 19-24 February, 2018, Sponsored by AICTE-NEQIP, New Delhi, Organized by Department of Energy in collaboration with Teaching Learning Centre, Tezpur University. (**Coordinator**)
- **Coordinated** to Sign MoU with CSIR-Central Building Research Institute, Roorkee, Uttarakhand

Seminar/Workshop/Training Programme attended

- Attended webinar session on “Desiccant Based Dehumidification and Cooling System” organized by Department of Mechanical Engineering, MIC College of Technology, June 08, 2020.
- Participation in live webinar on “Vibration Analysis of Machines” organized by Surendra Institute of Engineering and Management, West Bengal, June 15, 2020.
- Attended Faculty Development Program on “Disruptive Technologies in Mechanical Engineering” organized by Department of Mechanical Engineering, Sreenidhi institute of Science & technology, Hyderabad, 08th – 13th June 2020.
- Participated in online workshop on “Academic integrity with Turnitin” organized by Central library, Tezpur University, June 03, 2020.
- Participate in the Interdisciplinary refresher Course on “Teacher Education” organized by Department of Education, Tezpur University, in collaboration with Teaching Learning Centre (TLC) during 06 – 20 September 2019.
- Participated one week Faculty Development Program on “Advances in Renewable energy Technologies and Systems” Organized by Department of Energy, Tezpur University, 19-24 February 2018.
- Participated Faculty Development Program on “Recent Advancements in Electrical Engineering” organized by Department of Electrical Engineering, Tezpur University, 29th Jan – 2nd Feb 2018.
- Attended one-month Faculty Induction Program, organized by Teaching Learning Centre (TLC), Tezpur University, November 23 – December 22, 2017.
- Attended workshop on “Numerical methods in manufacturing / materials processing” organized by Department of Mechanical & Industrial Engineering and Department of Mathematics under QIP programme, March 30, 2013.

Scholarships/Fellowships etc.

- ✓ Graduate Aptitude Test in Engineering, India (2008 & 2012)
- ✓ Govt. of India (MHRD) Scholarship for doing M. TECH at NIT Kururkshetra (2 years)
- ✓ Govt. of India (MHRD) PhD fellowship for doing PhD at IIT Roorkee (4 years)

Professional Responsibility at Tezpur University

- ✓ Member of Board of Studies of the Department of Energy, Tezpur University (05-10-2017 to till now)
- ✓ Coordinator, Examination Committee, SoE, Tezpur University (28-08-2017 to Till now)
- ✓ Member, installation of Ground source Heat Pump (GSHP) system in Tezpur University (2019).
- ✓ Member of Tezpur University Entrance Exam Committee (22-05-2017 to 12-09-2017)
- ✓ Faculty Coordinator, M.Tech Project (2018)
- ✓ Member of DAC, Department of Energy, Tezpur University (25-04-2017 to Till now)
- ✓ Faculty in-charge of industrial visit to Lakuwa Thermal Power Plant, Sivasagar, Assam on 25-05-2017.
- ✓ University Representative, Tezpur University Entrance Examination – Delhi (2018), Diphu (2019).
- ✓ First Polling officer, Tezpur University Student Council Election (TUSC) 2019.
- ✓ Member of 27th Indian Convention of Food Scientist and Technologists (ICFoST) conference organized by Department of Food Engineering & Technology, Tezpur University, 2019.
- ✓ Marshal: Tezpur University convocation (2018, 2019)