Dr. Karunesh Kant

Post-Doctoral Researcher
Department of Mechanical Engineering
Eindhoven University of Technology
Eindhoven, P.O. Box 513, 5600 MB • Netherlands

Skype ID- **live:pre14-002**
(Tel)+31-625561439 • +91-7985098896
Email-k1091kant@gmail.com,
k.kant@tue.nl
Citizenship: India
Gender: Male
Date of Birth: April-10-1991

Present address
De Lampendriessen 31-851,
5612 AH Eindhoven
The Netherlands

ABOUT ME

Karunesh Kant received his bachelor's degree from Uttar Pradesh Technical University in Mechanical Engineering and master's from National Institute of Technology Srinagar, Jammu & Kashmir in Mechanical System Design. He had completed his Ph.D. in Renewable Energy from Rajiv Gandhi Institute of Petroleum Technology Jais Amethi (An Institute of National Importance Established under the Act of Parliament). Currently, he is working as a postdoctoral researcher in Energy Technology Group, Department of Mechanical Engineering, Eindhoven University of Technology, 5612 AZ, Eindhoven, Netherlands. He was awarded Bhaskara Advance Solar Energy Fellowship by IUSSTF and Department of Science and Technology Government of India for the research internship at Virginia Tech Research Center, Arlington, USA during his doctoral study. His research interest is materials characterization solar energy, thermal energy storage, phase change materials, thermochemical materials, nanocomposite phase change materials and computational fluid dynamic (CFD) study of various thermal systems. He has published 14 research articles in various international journals with SCI indexed and some of the research articles are under consideration. He has also published 10 book chapters in internationally reputed books. He has presented several papers and poster at the conference of national and international repute.

RESEARCH EXPERIENCE/INTERNATIONAL TRAINING/INTERNSHIP

Sep-2018 to present	Postdoctoral researcher, Department of Mechanical Engineering, Eindhoven University of Technology, Netherlands
Sep-2017 to Dec-2017	Visiting researcher, Advanced Materials and Technologies Laboratory, Department of Mechanical Engineering | Virginia Tech, 900 North Glebe Road | Arlington, VA 22203, United State of America

EDUCATION

Ph.D. in Renewable Energy (Solar Thermal)	Rajiv Gandhi Institute of Petroleum Technology, Jais, Amethi, India- 229304 (An Institute of National Importance)	July-2018 (Submitted), Jun-2019 (Defended)	8.40/10 CGPA
M. Tech. In Mechanical System Design	National Institute of Technology Srinagar, Jammu& Kashmir, India	July – 2014	8.61/10 CGPA
B. Tech. in Mechanical Engineering	Uttar Pradesh Technical University Lucknow, India	July – 2012	74.10/100 %
Intermediate	Board of High School and Intermediate Education Uttar Pradesh, Allahabad	June 2008	75.60/100 %
High School	Board of High School and Intermediate Education Uttar Pradesh, Allahabad	June 2006	65.83/100 %

RESEARCH INTERESTS

- Solar Energy
- Thermochemical energy storage
- Heat and mass transfer, fluid flow,
- Phase Change Materials
- Energy Conversion and storage
- Thermal energy storage
- Mathematical modeling
- Numerical Simulation

SKILLS

Experimental	Computational
• Differential Scanning Calorimeter (DSC) • Design of Various thermal Systems • Solar Thermal Systems • Heat transfer Analysis of various Solar Thermal Systems • Design of Photovoltaic Thermal systems.	• COMSOL, • MATLAB, • ANSYS, • AutoCAD, • Solid Works, • Origin

AWARDS/HONORS/ SCHOLARSHIPS/CERTIFICATES

2017	Bhaskara Advance Solar Energy Fellowship	Indo-US Science and Technology Forum and Department of Science and Technology Govt. of India
2016	Best poster award	7th World Renewable Energy Technology Congress International Conference & Expo, 21st —23rd August 2016, at New Delhi
2014	Institute fellowship for Ph.D.	Rajiv Gandhi Institute of Petroleum Technology, Jais U.P. India
2013	Qualified GATE	-------
2012	Qualified GATE Institute fellowship for M. Tech.	---------- Ministry of Human Resource and Development Govt. of India (MHRD)

WORKSHOPS PARTICIPATION

2015	Recent trend in solar and Wind energy	Department of Mechanical Engineering, Maulana Azad National Institute of Technology Bhopal.
2014	Applications of Rheology in Petrochemical Industry	Department of Petroleum Engineering Rajiv Gandhi Institute of Petroleum Technology Rae Bareli.
2012	Advanced Computer Numerical Control	*Department of Mechanical Engineering* National Institute of Technology Srinagar

MEMBER OF SCIENTIFIC SOCIETY

- Solar Energy Society of India (Life time)
- International Solar Energy Society (Annual)

- International Association of Advanced Materials (Life time)

PUBLICATIONS

A. REFEREED JOURNAL ARTICLES

[1]. K. Kant, R. Pitchumani, A. Shukla, A. Sharma; Analysis and design of air ventilated building integrated photovoltaic (BIPV) system incorporating phase change materials, Energy Conversion and Management 196, 149-164 (2019). *https://doi.org/10.1016/j.enconman.2019.05.073*

[2]. K. Kant, A. Shukla, A. Sharma, P. H. Biwole; Melting and solidification behavior of phase change materials with cyclic heating and cooling, Journal of Energy Storage 15, 274–282 (2018). *https://doi.org/10.1016/j.est.2017.12.005*

[3]. K. Kant, A. Shukla, A. Sharma; Heat transfer studies of building brick containing phase change materials, Solar Energy 155, 1233–1242 (2017). *https://doi.org/10.1016/j.solener.2017.07.072*

[4]. K. Kant, A. Shukla, A. Sharma; Advancement in phase change materials for thermal energy storage applications, Solar energy materials and solar cells 172, 82–92, (2017). *https://doi.org/10.1016/j.solmat.2017.07.023*

[5]. K. Kant, A. Shukla, A. Sharma, P. H. Biwole; Heat Transfer Study of Phase Change Materials with Graphene Nano Particle for thermal energy storage, Solar Energy 146, 453–463, (2017). *https://doi.org/10.1016/j.solener.2017.03.013*

[6]. A. Shukla, K. Kant, A. Sharma; Solar still with latent heat energy storage: A review, Innovative Food Science and Emerging Technology 41, 34-46 (2017). *https://doi.org/10.1016/j.ifset.2017.01.004*

[7]. A. Shukla, K. Kant, A. Sharma, P. H. Biwole; Cooling methodologies of photovoltaic module for enhancing electrical efficiency: A review, Solar energy materials and solar cells 160, 275–286 (2016). *https://doi.org/10.1016/j.solmat.2016.10.047*

[8]. K. Kant, A. Shukla, A. Sharma, P. H. Biwole; Heat transfer studies of photovoltaic panel coupled with phase change material, Solar Energy 140, 151–161 (2016). *https://doi.org/10.1016/j.solener.2016.11.006*

[9]. K. Kant, A. Shukla, A. Sharma; Ternary mixture of fatty acids as phase change materials for thermal energy storage applications, Energy Reports 2, 274–279 (2016). *https://doi.org/10.1016/j.egyr.2016.10.002*

[10]. A. Shukla, A. Sharma, K. Kant; Solar greenhouse with thermal energy storage: A review, Current Sustainable/Renewable Energy Reports 3, 58–66 (2016). *https://doi.org/10.1007/s40518-016-0056-y*

[11]. K. Kant, A. Shukla, A. Sharma, P. H. Biwole; Thermal response of

polycrystalline silicon photovoltaic panels: Numerical simulation and experimental study, Solar Energy 134, 147-155 (2016). https://doi.org/10.1016/j.solener.2016.05.002

[12]. K. Kant, A. Shukla, A. Sharma; Performance evaluation of fatty acids as phase change material for thermal energy storage, Journal of Energy Storage 6, 153–162(2016). https://doi.org/10.1016/j.est.2016.04.002

[13]. K. Kant, A. Shukla, A. Sharma, A. Kumar, A. Jain; Thermal Energy storage based solar drying systems: A review, Innovative Food Science and Emerging Technology 34, 86–99 (2016). https://doi.org/10.1016/j.ifset.2016.01.007

[14]. K. Kant, A. Qayoum; Numerical investigations of fluid flow and heat transfer in a ribbed heated duct with variable aspect ratios, Recent Trends in Fluid Mechanics 3, 23–37(2016).

B. BOOK CHAPTERS

[1]. K. Kant, A. Shukla, A. Sharma; Use of building integrated photovoltaic (BIPV): A significant step toward green buildings, In: Shukla A, Sharma A, editors. Energy Security and Sustainability: 1st ed., CRC Press, 55–92, (2016). https://www.taylorfrancis.com/books/e/9781315368047/chapters/10.1201/9781315368047-11

[2]. K. Kant, A. Sharma, A. Shukla; Numerical techniques for performance evaluation of solar drying systems, In: Prakash, O., Kumar, A., editors. Solar Drying Technology, 1st ed., Springer Singapore, pp. 381-402 (2017). https://doi.org/10.1007/978-981-10-3833-4_12

[3]. K. Kant, A. Shukla, A. Sharma; Building integrated photovoltaic (BIPV): Building envelope material and power generator in green buildings, In Shukla A, Sharma A, editors. Sustainability Through Energy-efficient Buildings: 1st ed., CRC Press, pp. 109-129, (2018). https://www.taylorfrancis.com/books/e/9781315159065/chapters/10.1201/9781315159065-6

[4]. K. Kant, A. Shukla, A. Sharma; Heating ventilation and air-conditioning (HVAC) systems for energy-efficient buildings, In: Shukla A., Sharma A., editors. Sustainability Through Energy-efficient Buildings: 1st ed., CRC Press 165-180, (2018). https://www.taylorfrancis.com/books/e/9781315159065/chapters/10.1201/9781315159065-9

[5]. K. Kant, A. Shukla, A. Sharma; Advances in simulation studies for developing energy-efficient buildings, In: Shukla A., Sharma A., editors. Sustainability Through Energy-efficient Buildings: 1st ed., CRC Press, pp. 209-233, (2018). https://www.taylorfrancis.com/books/e/9781315159065/chapters/10.1201/9781315159065-11

[6]. Sharma, K. Kant, A. Shukla; Perspective of Solar energy in India, In: Sharma A., Shukla A., editors. Low Carbon Energy Supply: 1st ed., Springer pp 17-35 (2018). *https://doi.org/10.1007/978-981-10-7326-7_2*

[7]. Anand, K. Kant, A. Shukla, A. Sharma; Latent heat storage for solar still applications, In: Kumar, A., Prakash, O., editors. Solar Desalination Technology, 1st ed., Springer Singapore, pp. 293-323, (2019). https://doi.org/10.1007/978-981-13-6887-5_14

[8]. K. Kant, A. Shukla, A. Sharma; Characterization techniques of phase change materials: methods and equipment, In: Shukla A., Sharma A., Biwole P.H., editors. Latent Heat-Based Thermal Energy Storage Systems, Materials, Applications, and the Energy Market: 1st ed., Apple Academic Press USA (2020). *http://www.appleacademicpress.com/latent-heat-based-thermal-energy-storage-systems-materials-applications-and-the-energy-market/9781771888585*

[9]. K. Kant, A. Shukla, A. Sharma; Phase change materials for temperature regulation of photovoltaic cells, In: Shukla A., Sharma A., Biwole P.H., editors. Latent Heat-Based Thermal Energy Storage Systems, Materials, Applications, and the Energy Market: 1st ed., Apple Academic Press USA, (2020). *http://www.appleacademicpress.com/latent-heat-based-thermal-energy-storage-systems-materials-applications-and-the-energy-market/9781771888585*

[10]. A. Shukla, K. Kant, A. Sharma; Heat transfer studies of PCMs to optimize the cost efficiency for different applications, In: Shukla A., Sharma A., Biwole P.H., editors. Latent Heat-Based Thermal Energy Storage Systems, Materials, Applications, and the Energy Market: 1st ed., Apple Academic Press USA, (2020). *http://www.appleacademicpress.com/latent-heat-based-thermal-energy-storage-systems-materials-applications-and-the-energy-market/9781771888585*

C. CONFERENCE PUBLICATIONS

[1]. Thermal regulation of photovoltaic panel, *8th World Renewable Energy Technology Congress International Conference & Expo,* 21st —23rd August 2017, at New Delhi

[2]. Thermal Conductivity Enhancement of Paraffin Wax with Graphene Nano-particles, *National Conference on Solar Thermal Energy Technologies, 2016, IIT Jodhpur*

[3]. Renewable Energy: A gateway to the new perspective for India, *7th World Renewable Energy Technology Congress International Conference & Expo*, 21st —23rd August 2016, at New Delhi

[4]. Thermal regulation of Photovoltaic panels using Phase-change Materials, *International Photovoltaic Solar Energy Conference (Solar Asia - 2015), Pune University*

[5]. Temperature regulation of buildings with the application of phase change

materials, *National Conference on Science for Society: An Interdisciplinary Approach, 2015 BBAU Lucknow.*

[6]. Applications of phase change materials for thermal energy storage, *National Conference on Science for Society: An Interdisciplinary Approach, 2015 BBAU Lucknow.*

[7]. Influence of repeated ribs on the thermal performance for flow in a heated duct of variable aspect ratio, *Proceedings of 5th International Conference on Fluid Mechanics and Fluid Power (FMFP 2014), at IIT KANPUR*