

CURRICULAM VITAE



Dr. Sunil Chamoli

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Department of Mechanical Engineering

GBPEIT, Pauri Garhwal, Uttarakhand, India

Objective: To make a distinguished mark in the field of thermal systems.

Current Status: Working as Assistant Professor in the Mechanical Engineering Department at Govind Ballabh Pant Institute of Engineering & Technology, Pauri-Garhwal, Uttarakhand, India.

Field of Interest: Heat Transfer, CFD, Multi objective optimization techniques, heat storage, two phase heat transfer.

Google scholar: https://scholar.google.com/citations?hl=en&user=_IwM1ckAAAAJ

Patent

Patent No.202111025564 A, A TRIPLE BLADE VORTEX GENERATOR INSERT FOR HEAT EXCHANGER on 18.06.2021

Book Chapter Publications

- Anshul Kunwar, Manoj Kumar, **Sunil Chamoli**. Thermo-Hydraulic Performance and Heat Storage of a Packed Bed Solar Energy Storage System Having Large-Sized Perforated Cylinders. Advances in Energy Research, Vol. 1 pp 199-207. (*Publisher Springer*)

Research Publications in Peer-reviewed International Journals:

Year – 2022

- P Samruaisin, M Pimsarn, C Thianpong, K Ruengpayungsak, P Eiamsa-ard, **S Chamoli**, S Eiamsa-ard. Performance of a heat exchanger with compound inclined circular-rings and twisted tapes. Case Studies in Thermal Engineering 37 (2022), 102285.

- V.Chuwattanakul, K.Wongcharee, M.Pimsarn, S.Chokphoemphun, **S.Chamoli**, S.Eiamsa-ard. Effect of conical air distributors on drying of peppercorns in a fluidized bed dryer: Prediction using an artificial neural network. *Case Studies in Thermal Engineering* 36 (2022) 102188.
- Rahul Bahuguna, **Sunil Chamoli**, Yogesh Barthwal, Sumit Rana, Ashutosh Gupta, Vijay Singh Bisht. Economic analysis of artificially roughened solar air heater with v-shaped ribs. *Acta Innovations* DOI: <https://doi.org/10.32933/ActaInnovations.44.2>
- Rahul Bahuguna, K. K. S. Mer, Manoj Kumar, **Sunil Chamoli**. Thermal performance of a circular tube embedded with TBVG inserts: an experimental study. *Journal of Thermal Analysis and Calorimetry*, DOI: <https://doi.org/10.1007/s10973-022-11352-1>.
- R Kumar, M Kumar, AK Patil, **S Chamoli**. Study of a perforated hollow cylinder and twisted tape inserts as a compound device in a circular tube for heat transfer enhancement. *Kerntechnik* 2022; aop. <https://doi.org/10.1515/kern-2021-1030>.

Year – 2021

- **Sunil Chamoli**, X Zhuang, PK Pant, P Yu. Heat transfer in a turbulent flow tube integrated with tori as vortex generator inserts. *Applied Thermal Engineering* 194, 117062, 2021.
- R Bahuguna, KKS Mer, M Kumar, **Sunil Chamoli**. Entropy generation analysis in a tube heat exchanger integrated with triple blade vortex generator inserts. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 1-19, 2021.
- Suvanjan Bhattacharyya, Devendra Kumar Vishwakarma, Varun Goel, **Sunil Chamoli**, Alibek Issakhov, Josua P Meyer. Thermodynamics and heat transfer study of a circular tube embedded with novel perforated angular-cut alternate segmental baffles. *Journal of Thermal Analysis and Calorimetry*, 1-21, 2021.
- R Bahuguna, KKS Mer, M Kumar, **Sunil Chamoli**. Thermohydraulic performance and second law analysis of a tube embedded with multiple helical tape inserts. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 1-23, 2021.
- N Kumar, S Tejyan, **Sunil Chamoli**, PK Pant. A Discrete Linear Stability Analysis of Two-dimensional Laminar Flow Past a Square Cylinder. *WSEAS Transactions on Fluid Mechanics* 16, 109-119, 2021.

Year – 2020

- Suvanjan Bhattacharyya, Manabendra Pathak, Mohsen Sharifpur, **Sunil Chamoli**, Daniel R. E. Ewim. Heat transfer and exergy analysis of solar air heater tube with helical corrugation

and perforated circular disc inserts. **Journal of Thermal Analysis and Calorimetry** <https://doi.org/10.1007/s10973-020-10215-x>.

- Chidanand K. Mangrulkar, Ashwinkumar S.Dhoble, Jijo Derick Abraham, **Sunil Chamoli**. Experimental and numerical investigations for effect of longitudinal splitter plate configuration for thermal-hydraulic performance of staggered tube bank. *International Journal of Heat and Mass Transfer* 161 (2020) 120280.
- Ankit Singh Rana, Amit Joshi, **Sunil Chamoli**, Chandraveer Singh Kanawat, Pawan Kumar Pant. Optimization of WEDM process parameters for machining Al 2219 alloy. **Materials Today: Proceedings** <https://doi.org/10.1016/j.matpr.2020.02.540>. (Publisher Elsevier)
- Ankit Choudhary, Manoj Kumar, Anil Kumar Patil, **Sunil Chamoli**. Enhanced thermal and fluid flow performance of cross flow tube bank with perforated splitter plate. **Experimental Heat Transfer** <https://doi.org/10.1080/08916152.2020.1749190> (Publisher Taylor and Francis)
- Suvanjan Bhattacharyya, Ali Cemal Benim, Manabendra Pathak, **Sunil Chamoli**. Thermohydraulic characteristics of inline and staggered angular cut baffle inserts in the turbulent flow regime. **Journal of Thermal Analysis and Calorimetry** 140 (2020) 1519–1536. (Publisher Springer)

Year – 2019

- Chidanand K Mangrulkar, Ashwinkumar S Dhoble, Pawan Kumar Pant, Nitin Kumar, Ashutosh Gupta, Sunil Chamoli. Thermal performance escalation of cross flow heat exchanger using in-line elliptical tubes. **Experimental Heat Transfer** <https://doi.org/10.1080/08916152.2019.1704946> . (Publisher Taylor and Francis)
- Alok Kumar, Satyendra Singh, **Sunil Chamoli**, Manoj Kumar. Experimental investigation on thermo-hydraulic performance of heat exchanger tube with solid and perforated circular disk along with twisted tape insert. **Heat Transfer Engineering** 40 (2019) 616-626. (Publisher Taylor and Francis)
- Chidanand K.Mangrulkar, Ashwinkumar S.Dhoble, **Sunil Chamoli**, Ashutosh Gupta, Vipin B.Gawande. Recent advancement in heat transfer and fluid flow characteristics in cross flow heat exchangers. **Renewable and Sustainable Energy Reviews** 113 (2019) 109220. (Publisher Elsevier)
- Rajesh Maithani, **Sunil Chamoli**, Anil Kumar, Ashutosh Gupta. Solar air heater duct roughened with wavy delta winglets: correlations development and parametric optimization.

Heat and Mass Transfer DOI <https://doi.org/10.1007/s00231-019-02651-9> (*Publisher Springer*)

- **Sunil Chamoli**, Ruixin Lu, Hao Chen, Yongpan Cheng, Peng Yu. Numerical optimization of design parameters for a modified double-layer microchannel heat sink. **International Journal of Heat and Mass Transfer** 138 (2019) 373 - 389. (*Publisher Elsevier*)
- Anshul Kunwar, Manoj Kumar, Ashutosh Gupta, Chidanand K. Mangrulkar, **Sunil Chamoli**. Experimental investigation of a packed-bed thermal energy storage system fitted with perforated cylindrical elements. **Heat and Mass Transfer** 55 (2019) 2723-2737. (*Publisher Springer*)
- **Sunil Chamoli**, Tingting Tang, Peng Yu, Ruixin Lu. Effect of shape modification on heat transfer and drag for fluid flow past a cam-shaped cylinder. **International Journal of Heat and Mass Transfer** 131 (2019) 1147–1163. (*Publisher Elsevier*)

Year – 2018

- **Sunil Chamoli**, Ruixin Lu, Jin Xie, Peng Yu. Numerical study on flow structure and heat transfer in a circular tube integrated with novel anchor shaped inserts. **Applied Thermal Engineering**, 135, 2018, 304-324. (*Publisher Elsevier*)
- Alok Kumar, Satyendra Singh, **Sunil Chamoli**, Manoj Kumar. Experimental Investigation on Thermo-Hydraulic Performance of Heat Exchanger Tube with Solid and Perforated Circular Disk Along with Twisted Tape Insert. **Heat Transfer Engineering**. doi/abs/10.1080/01457632.2018.1436618. (*Publisher Taylor and Francis*)
- Piyush Agrawal, Abhishek Gautam, Anshul Kunwar, Manoj Kumar, **Sunil Chamoli**. Performance assessment of heat transfer and friction characteristics of packed bed heat storage system embedded with internal grooved cylinders. **Solar Energy**, 161, 2018, 148 - 158. (*Publisher Elsevier*)
- Amit Bartwal, Abhishek Gautam, Manoj Kumar, Chidanand K. Mangrulkar, **Sunil Chamoli**. Thermal performance intensification of a circular heat exchanger tube integrated with compound circular ring - metal wire net inserts. **Chemical Engineering and Processing: Process Intensification**, 124, 2018, 50-70. (*Publisher Elsevier*).
- **Sunil Chamoli**, Ruixin Lu, Dehao Xu, Peng Yu. Thermal performance improvement of a solar air heater fitted with winglet vortex generators. **Solar Energy**, 159, 2018, 966 – 983. (*Publisher Elsevier*).

- Sumit Kumar Singh, Manoj Kumar, Alok Kumar, Abhishek Gautam, **Sunil Chamoli**. Thermal and friction characteristics of a circular tube fitted with perforated hollow circular cylinder inserts. **Applied Thermal Engineering**, 130, 2018, 230 - 241.(*Publisher Elsevier*).

Year – 2017

- **Sunil Chamoli**, Peng Yu, Ruixin Lu. Thermal characteristic of a turbulent flow through a circular tube fitted with perforated vortex generator inserts.**Applied Thermal Engineering**,121, 2017, 1117–1134.(*Publisher Elsevier*).
- Rajesh Maithani, Anshuman Silori, Jitesh Rana, **Sunil Chamoli**. Numerical analysis of heat transfer and fluid flow of a wavy delta winglets in a rectangular duct. *Thermal Science and Engineering Progress*, 2, 2017, 15 – 25. (*Publisher Elsevier*).
- **Sunil Chamoli**, Peng Yu, Shimin Yu, Multi-objective shape optimization of a heat exchanger tube fitted with compound inserts, **Applied Thermal Engineering**,117, 2017, 708 – 724.(*Publisher Elsevier*).
- J.S. Sawhney, Rajesh Maithani, **Sunil Chamoli**, Experimental investigation of heat transfer and friction factor characteristics of solar air heater using wavy delta winglets,**Applied Thermal Engineering**,117, 2017, 740 – 751.(*Publisher Elsevier*).
- Abhishek Gautam, **Sunil Chamoli**, Alok Kumar, Satyender Singh, A review on technical improvements, economic feasibility and world scenario of solar water heating system, **Renewable and Sustainable Energy Reviews**, 68, 2017, 541- 562.(*Publisher Elsevier*).
- Jitesh Rana, Anshuman Silori, Rajesh Maithani, **Sunil Chamoli**, CFD analysis of a v-rib with gap roughened solar air heater, *Thermal Science - International Scientific Journal*, DOI<https://doi.org/10.2298/TSCI160831010R>.

Year – 2016

- Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Satyender Singh, Experimental investigation on thermal performance and fluid flow characteristics in circular cylindrical tube with circular perforated ring Inserts, **Experimental Thermal and Fluid Science**, 79, 2016, 168-174. (*Publisher Elsevier*).
- **Sunil Chamoli**, Peng Yu, Alok Kumar, Multi-response optimization of geometric and flow parameters in a heat exchanger tube with perforated disk inserts by Taguchi grey relational analysis, **Applied Thermal Engineering**, 103, 2016, 1339- 1350. (*Publisher Elsevier*).

- Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Comparative study for thermal hydraulic performance of circular tube with inserts, **Alexandria Engineering Journal**, 55, 2016, 343-349. (Publisher Elsevier).
- Vijaypal Singh, **Sunil Chamoli**, Manoj Kumar, Alok Kumar, Heat transfer and fluid flow characteristics of heat exchanger tube with multiple twisted tapes and solid rings inserts, **Chemical Engineering and Processing: Process Intensification**, 102, 2016, 156-168. (Publisher Elsevier).
- Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Experimental investigation on thermal performance and fluid flow characteristics in heat exchanger tube with solid hollow circular disk inserts, **Applied Thermal Engineering**, 100, 2016, 227-236. (Publisher Elsevier).
- Vipin B. Gawande, A. S. Dhoble, D. B. Zodpe, **Sunil Chamoli**, A review of CFD methodology used in literature for predicting thermohydraulic performance of a roughened solar air heater, **Renewable and Sustainable Energy Reviews**, 54, 2016, 550-605. (Publisher Elsevier).
- Vipin B. Gawande, A. S. Dhoble, D. B. Zodpe, **Sunil Chamoli**, Analytical approach for evaluation of thermo hydraulic performance of roughened solar air heater, **Case Studies in Thermal Engineering**, 8, (2016), 19-31. (Publisher Elsevier)
- Vipin B. Gawande, A. S. Dhoble, D. B. Zodpe, **Sunil Chamoli**, Experimental and CFD investigation of convection heat transfer in solar air heater with reverse L-shaped ribs, **Solar Energy**, 131, 2016, 275-295. (Publisher Elsevier).
- Prashant Kumar, Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Experimental Investigation of Heat Transfer Enhancement and Fluid Flow Characteristics in a Protruded Surface Heat Exchanger Tube, **Experimental Thermal and Fluid Science**, 71, 2016, 42-51. (Publisher Elsevier).
- Vipin B. Gawande, A. S. Dhoble, D. B. Zodpe, **Sunil Chamoli**, Experimental and CFD-based thermal performance prediction of solar air heater provided with chamfered square ribs artificial roughness, **Journal of Brazilian Society of Mechanical Science and Engineering**, 38, 2016, 643 – 663. (Publisher Spinger).
- Vipin B. Gawande, A. S. Dhoble, D. B. Zodpe, **Sunil Chamoli**, Experimental and CFD-based thermal performance prediction of solar air heater provided with right-angle triangular rib as artificial roughness, **Journal of Brazilian Society of Mechanical Science and Engineering**, 38, 2016, 551- 579. (Publisher Spinger).

Year- 2015

- **Sunil Chamoli**, Preference selection index approach for optimization of V downperforated baffled roughened rectangular channel, **Energy**,93,Part-2, 2015, 1418- 1425.(*Publisher Elsevier*).
- **Sunil Chamoli**, N.S Thakur, Thermal behavior in rectangular channel duct fitted with V shaped perforated baffles, **Heat Transfer Engineering**, 36, 2015, 471- 479. (*Publisher Taylor and Francis*).
- **Sunil Chamoli**, A Taguchi approach for optimization of flow and geometrical parameters in a rectangular channel roughened with V down perforated baffles, **Case Studies in Thermal Engineering**, 5, (2015), 59- 69. (*Publisher Elsevier*)
- **Sunil Chamoli**, Hybrid FAHP-FTOPSIS approach for performance evaluation of the V down perforated baffle roughened rectangular channel, **Energy**, 84, 2015, 432- 442. (*Publisher Elsevier*)
- **Sunil Chamoli**, ANN and RSM approach for modeling and optimization of designing parameters for a V down perforated baffle roughened rectangular channel, **Alexendria Engineering Journal**, 54, 2015, 429-446. (*Publisher Elsevier*)

Year- 2014

- **Sunil Chamoli**, N.S Thakur, Exergetic performance evaluation of V down roughened solar air heater duct, **Journal of Thermal Analysis and Calorimetry**, 117, 2014, 909-923.(*Publisher Springer*).
- **Sunil Chamoli**, N.S Thakur, Numerical based heat transfer and friction factor correlations of rectangular ducts roughened with transverse perforated baffles, **Walalaik Journal of Science and Technology**, 11, 2014, 107-127.
- **Sunil Chamoli**, N.S Thakur, Correlations for solar air heater duct with V- shaped perforated baffles as roughness elements on absorber plate, **International Journal of Sustainable Energy**, Vol. 35, No. 1, 1–20, 2016. (*Publisher Taylor and Francis*).
- **Sunil Chamoli**, N.S Thakur, Effect of Roughness Height Ratio in V down Perforated Baffle Roughness on Thermo hydraulic Performance of Solar Air Heater: An Experimental Study, **International Journal of Ambient Energy**, 36, 2015, 242 - 247. (*Publisher Taylor and Francis*).

- **Sunil Chamoli**, N.S Thakur, Performance study of solar air heater duct having absorber plate with V down perforated baffles, **Songklanakarinn Journal of Science and Technology**, 36, 2014, 201-208. (*Publisher Prince of Songkla University*).

Year- 2013

- **Sunil Chamoli**, N.S Thakur, Heat transfer enhancement in solar air heater with V-shaped perforated baffles, **Journal of Renewable and Sustainable Energy**, 5, 023122 (2013). (*Publisher AIP*).
- **Sunil Chamoli**, N.S Thakur, Performance evaluation of solar air heater having V- down perforated baffles on the absorber plate, **Journal of Renewable and Sustainable Energy**, 5, 063107 (2013). (*Publisher AIP*).
- **Sunil Chamoli**, Exergy analysis of a flat plate solar collector, **Journal of Energy in South Africa**, 24, 2013, 08-13. (*Publisher South African Department of Education for University*).

Year- 2012

- **Sunil Chamoli**, Ranchan Chauhan, N.S Thakur, J.S Saini, A review of the performance of double pass solar air heater, **Renewable and Sustainable Energy Reviews**, 16, 2012, 481-492. (*Publisher Elsevier*).
- **Sunil Chamoli**, N.S Thakur, J.S Saini, A review of the turbulence promoters used in solar thermal systems, **Renewable and Sustainable Energy Reviews**, 16, 2012, 3154-3175. (*Publisher Elsevier*).

Research papers conferences

International conferences

1. **Sunil Chamoli**, Ruixin Lu, Peng Yu, Numerical study on thermo-hydraulic performance improvement of solar air heater duct with winglet vortex generators, International green energy conference, Xian, China, 31 July – 3 Aug, 2017.
2. Prashant Kumar, Manoj Kumar, **Sunil Chamoli**, Thermal and thermo hydraulic behavior of a protruded circular tube, Proceedings of 5th IAENG Conference, WCE2016, 29 June to 1 July 2016, 1122-1126, London, U.K.
3. Jitesh Rana, Anshuman Silori, Rajesh Maithani, **Sunil Chamoli**, Thermohydraulic performance of an artificially roughened solar air heater duct, International conference on emerging

developments in engineering and technology, Shivalik College of Engineering, Dehradun (Uttarakhand) on November 11-12, 2016.

4. Anshuman Silori, Jitesh Rana, Rajesh Maithani, **Sunil Chamoli**, A CFD analysis of wavy delta winglets as vortex generators in a solar air heater duct, International conference on advance trends in engineering, technology and research, Bal Krishna Institute of Technology, Kota (Rajasthan) on June30-July 1, 2016.
5. Jitesh Rana, Anshuman Silori, Rajesh Maithani, **Sunil Chamoli**, Thermal performance prediction of artificially roughened duct using CFD analysis, International conference on advance trends in engineering, technology and research, Bal Krishna Institute of Technology, Kota (Rajasthan) on June30-July 1, 2016.
6. Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Satyendra Singh, Thermo-hydraulic performance assesment of heat exchanger tube with perforated hollow circular disk insert, International conference on emerging developments in engineering & technology – 2016, Shivalik College of Engineering, Dehradun (Uttarakhand) on November 11-12, 2016.
7. Alok Kumar, Manoj Kumar, **Sunil Chamoli**, Rajesh Maithani, Experimental investigation on thermo-hydraulic performance of heat exchanger tube with perforated hollow circular disk insert, Proceedings of 23rd National and 1st International ISHMT-ASTFE Heat and Mass Tranfer, Paper No. IHMTC2015-1017, ISRO Trivandrum, 2015.
8. **Sunil Chamoli**, N.S Thakur, Heat transfer and fluid flow analysis of perforated baffled roughened solar air heater using CFD simulation, ICMIE- 2013, 17th March 2013, Pune, India.
9. Ranchan Chauhan, N.S. Thakur, **Sunil Chamoli**. (2011), Tilt angle optimization for grid interactive solar photovoltaic array, International conference on power and energy engineering, 29-31th July 2011, Bangkok.

National conferences

1. Rajesh Maithani, **Sunil Chamoli**, Thermohydraulic performance analysis due to relative roughness pitch in a V-rib with symmetrical gaps roughened duct of a solar air heater, National conference on recent innovations in science and engineering, Career point university, Hamirpur (HP), March 04-05, 2016.
2. Rajesh Maithani, **Sunil Chamoli**, Anil Kumar, Thermohydraulic performance analysis due to relative roughness pitch in V-ribs with symmetrical roughened duct of solar air heater, National Conference on Recent Innovation in Science and Engineering-2016, Career point University, Hamirpur, March 04-05, 2016.

3. **Sunil Chamoli**, N.S Thakur, Thermohydraulic performance of V down perforated baffled roughened solar air heater, National conference on recent advances in renewable energy and environment sciences, Shoolini University, H.P, India, 8-9th June 2013.
4. Alok Kumar, **Sunil Chamoli**, Manoj Kumar, Thermohydraulic performance comparison of heat exchanger tube with inserts, National conference on recent Developments in Non Conventional Energy Systems, 22- 23rd December, 2014, DIT University, Dehradun.
5. Ashish Kumar Sharma, **Sunil Chamoli**, N.S Thakur, CFD based analysis of V shaped artificially roughened solar air heater, Proceedings of National conference and emerging trends in energy (ETEE-2012), DIT, Dehradun, UK (India), 23-24 March 2012.

FDP, Workshops, STC Attended

1. Attend workshop on “*MATLAB for Engineering Applications*” at NIT Hamirpur on March 22nd, 2012.
2. Attend “*National Science Day Programme on February 28th, 2013*” at Centre for Energy and Environment NIT Hamirpur.
3. Attend Workshop on “*Power Generation from Renewable Energy Sources*” at Centre for Energy and Environment NIT Hamirpur on 23-24th March, 2013.
4. Attend Workshop on “*Low Carbon Climate Resilient construction for Building Professionals*” at NIT Hamirpur on 11- 12th May, 2013.

Expert lectures

Delivered Expert Lecture on “Advances in solar thermal systems” in National Workshop on Technological Developments in Engineering Systems and Industries at Career Point University, Hamirpur (H.P.), 26th -27th April 2013.

Member of editorial board

SCIREA Journal of Energy — Open Access Journal

Academic Achievement

Ph D Thesis ongoing:	02
M. Tech Thesis Supervised:	13

Research Projects:

Sponsored Money: 3.41 (Lakh) (Completed January 2015 to January 2016)

Sponsored Agency: DIT University

Sponsored Money: 3.0 (Lakh) (Completed September 2019 to January 2021)

Sponsored Agency: TEQIP - III

Academics Degree:

S. No	Exam/Course/Degree	Board/University	Result
1.	Post-Doc	SUSTC, Shenzhen, China	-
2.	PhD	N.I.T, Hamirpur	2013
3.	M. Tech	UKTECH	First Class, 2010
4.	B. Tech	UPTU	First Class, 2006

Personal Details

Fathers Name: M.R Chamoli

Date of Birth: 3rd, August, 1984

Marital Status: Married

Hobbies: Listening music, watching movies, exploring new places

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(Dr. Sunil Chamoli)