

## Profile Page



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### Research Interests :

Solar Thermal Engineering

### Other Profile Links :

#### Google Scholar Link :

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#### Personal Web Link :

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### Journal Publications :

Year	Journal	Publication
2023	Applied Thermal Engineering	Sharma A., Deng C., Kim S.C., Chauhan R. "Investigation and optimization of solidification performance of concentric tube type latent heat storage unit with herringbone wavy fin designs"
2022	Renewable Energy, 2022, 181, pp. 653–665	Salman, M., Chauhan, R., Poongavanam, G.K., Park, M.H., Kim, S.C. Utilizing jet impingement on protrusion/dimple heated plate to improve the performance of double pass solar heat collector
2022	Journal of Energy Storage, 2022, 48, 104013	Sharma, A., Pitchumani, R., Chauhan, R. Solar air heating systems with latent heat storage - A review of state-of-the-art
2022	Sustainable Energy Technologies and Assessments, 2022, 51, 101935	Sharma, A., Chauhan, R. Integrated and separate collector storage type low-temperature solar water heating systems with latent heat storage: A review
2021	Renewable Energy, 2021, 169, pp. 618–628	Salman, M., Park, M.H., Chauhan, R., Kim, S.C. Experimental analysis of single loop solar heat collector with jet impingement over indented dimples

2021	Sustainable Energy Technologies and Assessments, 2021, 45, 101119	Bhardwaj, A.K., Kumar, R., Kumar, S., Goel, B., Chauhan, R. Energy and exergy analyses of drying medicinal herb in a novel forced convection solar dryer integrated with SHSM and PCM
2021	Case Studies in Thermal Engineering, 2021, 26, 101185	Sharma, A., Kallio?lu, M.A., Awasthi, A., ...Fekete, G., Singh, T. Correlation formulation for optimum tilt angle for maximizing the solar radiation on solar collector in the Western Himalayan region
2021	Renewable Energy, 2021, 179, pp. 918–928	Salman, M., Chauhan, R., Kim, S.C. Exergy analysis of solar heat collector with air jet impingement on dimple-shape-roughened absorber surface
2020	International Journal of Thermal Sciences 147: 106130	Chauhan R., Singh T., Patnaik A., Thakur NS., Kim SC., Fekete G. Experimental investigation and multi objective optimization of thermal-hydraulic performance in a solar heat collector
2020	Materials Today: Proceedings, 2020, 44, pp. 4357–4363	Sharma, A., Chauhan, R., Ali Kallioglu, M., Chinnasamy, V., Singh, T. A review of phase change materials (PCMs) for thermal storage in solar air heating systems
2020	Materials Today: Proceedings, 2020, 44, pp. 4421–4424	Ali Kallioglu, M., Sharma, A., Chinnasamy, V., Chauhan, R., Singh, T. Optimum insulation thickness assessment of different insulation materials for mid-latitude steppe and desert climate (BSH) region of India
2020	Journal of Materials Research and Technology, 2020, 9(4), pp. 7583–7591	Singh, T., Tejyan, S., Patnaik, A., Chauhan, R., Fekete, G. Optimal design of needlepunched nonwoven fiber reinforced epoxy composites using improved preference selection index approach
2020	Thermal Science and Engineering Progress, 2020, 20, 100713	Bhardwaj, A.K., Kumar, R., Chauhan, R., Kumar, S. Experimental investigation and performance evaluation of a novel solar dryer integrated with a combination of SHS and PCM for drying chilli in the Himalayan region
2019	Solar Energy 177:395-407	Bhardwaj AK, Kumar R, Chauhan R. Experimental investigation of the performance of a novel solar dryer for drying medicinal plants in Western Himalayan region
2019	Renewable Energy 138:955-963	Chauhan R, Kim SC. Effective efficiency distribution characteristics in protruded/dimpled-arc plate solar thermal collector
2019	Applied Thermal Engineering. 2019; 154:217-227	Chauhan R, Kim SC. Thermo-hydraulic characterization and design optimization of dimpled/protruded absorbers in solar heat collectors
2019	Materials Research Express. 2019; 6:035703	Singh T, Rathi MK, Patnaik A, Chauhan R, Ali S, Fekete G. Application of waste tyre rubber particles in non-asbestos organic brake friction composite materials
2019	Heat and Mass transfer 56: 913-930	Kumar R., Nadda R., Rana A., Chauhan R., Chandel SS. Performance investigation of a solar thermal collector provided with air jets impingement on multi V-shaped protrusion ribs absorber plate
2019	Thermal Science 23; 751-761	Bhardwaj AK., Kumar A., Maithani R., Kumar A., Kumar S., Chauhan R. Experimental study on heat transfer and fluid-flow enhancement of a spherical shape obstacle solar air passage
2018	Renewable and Sustainable Energy Reviews 82:3179-3190	Chauhan R, Singh T, Thakur NS, Kumar N, Kumar R, Kumar A. Heat transfer augmentation in solar thermal collectors using impinging air jets: A comprehensive review
2018	Journal of King Saud University – Engineering Sciences 30; 355-362	Chauhan R, Thakur NS, Singh T, Sethi M. Exergy based modeling and optimization of solar thermal collector provided with impinging air jets
2018	Polymer Composites. 2018; 39:E1109-E1117	Singh T, Chauhan R, Patnaik A, Nain R, Gangil B, Kumar A. Parametric study and optimization of multi walled carbon nanotube filled friction composite materials using Taguchi method
2018	Polymer Composites. 2018; 39:1655-1662	Singh T, Patnaik A, Chauhan R, Chauhan P. Selection of brake friction materials using hybrid Analytical Hierarchy Process and Vise Kriterijumska Optimizacija Kompromisno Resenje Approach

2018	Polymer Composites. 2018; 39:1575-1581	Singh T, Patnaik A, Chauhan R, Chauhan P, Kumar N. Physio-mechanical and tribological properties of nanoclay filled friction composite materials using Taguchi Design of Experiment approach
2018	International Journal of Mechanical and Production Engineering Research and Development. 2018; 8:697-702	Khargotra R, Dhingra S, Chauhan R, Batra D., Bhardwaj M. Efficiency evaluation and comparison of different turbulator shapes in solar water heating collector system
2018	Thermal Science. 2018; 22:183-191	Kumar R, Chauhan R, Sethi M, Kumar A. Experimental investigation on overall thermal performance of fluid flow in a rectangular channel with discrete v-pattern baffle
2018	Renewable and Sustainable Energy Reviews. 2018; 81:447-463	Kumar R, Kumar A, Chauhan R, Maithani R. Comparative study of effect of various blockage arrangements on thermal hydraulic performance in a roughened air passage
2018	Polymer Composites. 2018 (Article in Press)	Singh T, Patnaik A, Fekete G, Chauhan R, Gangil B. Application of hybrid analytical hierarchy process and complex proportional assessment approach for optimal design of brake friction materials
2018	Alexandria Engineering Journal. 2018; 57:3419-3428	Nadda R, Kumar R, Singh T, Chauhan R, Patnaik A, Gangil B. Experimental investigation and optimization of cobalt bonded tungsten carbide composite by hybrid AHP-TOPSIS approach
2017	Energy 134:360-368	Chauhan R, Singh T, Tiwari A, Patnaik A, Thakur NS. Hybrid Entropy TOPSIS approach for energy performance prioritization in a rectangular channel employing impinging air jets
2017	Applied Thermal Engineering 116:100-109	Chauhan R, Singh T, Kumar N, Patnaik A, Thakur NS. Experimental investigation and optimization of impinging jet solar thermal collector by Taguchi method
2017	Experimental Thermal and Fluid Science 84:266-278	Kumar A, Chauhan R, Kumar R, Singh T, Sethi M, Kumar A, Sharma A. Developing heat transfer and pressure loss in an air passage with multi discrete V-blockages
2017	Renewable Energy 106:310-320	Sharma A, Chauhan R, Singh T, Kumar A, Kumar R, Kumar A, Sethi M. Optimizing discrete V obstacle parameters using a novel Entropy-VIKOR approach in a solar air flow channel
2017	Heat and Mass Transfer. 2017; 53:3593-3612	Kumar A, Kumar R, Maithani R, Chauhan R, Kumar S, Nadda R. An experimental study of heat transfer enhancement in an air channel with broken multi type V-baffles
2017	Experimental Heat Transfer. 2017; 30:393-426	Kumar A, Kumar R, Chauhan R, Sethi M, Kumari A, Verma N, Nadda R. Single phase thermal and hydraulic performance analysis of a V-pattern dimpled obstacles air passage
2017	Case Studies in Thermal Engineering. 2017; 10:302-314	Bhardwaj AK, Chauhan R, Kumar R, Sethi M, Rana A. Experimental investigation of an indirect solar dryer integrated with phase change material for drying valeriana jatamansi (medicinal herb)
2017	Heat and Mass Transfer. 2017; 53:1289-1304	Kumar R, Kumar A, Sharma A, Chauhan R, Sethi M. Experimental study of heat transfer enhancement in a rectangular duct distributed by multi V-perforated baffle of different relative baffle width
2017	Renewable Energy. 2017; 101:856-872	Kumar R, Sethi M, Chauhan R, Kumar A. Experimental study of enhancement of heat transfer and pressure drop in a solar air channel with discretized broken V-pattern baffle
2017	Experimental Thermal and Fluid Science. 2017; 81:56-75	Kumar R, Chauhan R, Sethi M, Kumar A. Experimental study and correlation development for Nusselt number and friction factor for discretized broken V-pattern baffle solar air channel
2017	Wear. 2017; 386:157-164	Singh T, Tiwari A, Patnaik A, Chauhan R, Ali S. Influence of wollastonite shape and amount on tribo-performance of non-asbestos organic brake friction composites

2017	Renewable Energy. 2017; 109:461-479	Kumar A, Kumar R, Maithani R, Chauhan R, Sethi M, Kumari A, Kumar S, Kumar S. Correlation development for Nusselt number and friction factor of a multiple type V-pattern dimpled obstacles solar air passage
2016	Advanced Science Letters 22:3928-3932	Chauhan R, Singh T, Thakur NS. Investigation of the thermal performance of solar thermal collector provided with impinging air jets
2016	Renewable Energy 99:118-126	Chauhan R, Singh T, Thakur NS, Patnaik A. Optimization of parameters in solar thermal collector provided with impinging air jets based upon preference selection index method
2016	Advanced Science Letters. 2016; 22:3958-3960	Singh T, Patnaik A, Chauhan R, Kumar N, Chauhan P. Dry sliding wear assessment of organic-inorganic fibre reinforced friction composites materials using design of experiments approach
2016	Case Studies in Thermal Engineering. 2016; 8:187-197	Kumar R, Kumar A, Chauhan R, Sethi M. Heat transfer enhancement in solar air channel with broken multiple V-type baffle
2016	Advances in Mechanical Engineering. 2016; 8:1-12	Kumar R, Chauhan R, Sethi M, Sharma A, Kumar A. Experimental Investigation of effect of flow attack angle on thermohydraulic performance of air flow in a rectangular channel with discrete V-pattern baffle on the heated plate
2016	Material and Design. 2016; 89:1335-1342	Singh T, Patnaik A, Chauhan R. Optimized selection of cement kiln dust filled brake pad formulation for best tribo-performance properties using Grey Relation Analysis approach
2015	Wear. 2015; 324-325:10-16	Singh T, Patnaik A, Gangil B, Chauhan R. Optimization of tribo-performance of brake friction materials: Effect of nano filler
2014	Energy 68:1-7	Chauhan R, Thakur NS. Investigation of the thermohydraulic performance of impinging jet solar air heater
2013	Experimental Thermal and Fluid Science 44:760-767	Chauhan R, Thakur NS. Heat transfer and friction factor correlations for impinging jet solar air heater
2012	Journal of Renewable and Sustainable Energy 4:043121	Chauhan R, Thakur NS. Heat transfer and friction characteristics of impinging jet solar air heater
2012	Applied Mechanics and Materials. 2012; 110-116:4554-4558	Chauhan R, Thakur NS, Chamoli S. Tilt angle optimization of grid interactive solar photovoltaic array
2012	Renewable and Sustainable Energy Reviews. 2012; 16:481-492	Chamoli S, Chauhan R, Thakur NS, Saini JS. A review on the performance of double pass solar air heater

## Conference Publications :

Year	Conference	Publication
2020	International Conference on Advances in Materials Processing and Manufacturing Applications (iCADMA-2020) held on November 5 – 6, 2020.	Kallio?lu M. A., Sharma A., Chinnasamy V., Chauhan R., Singh T. Optimum insulation thickness assessment of different insulation materials for mid-latitude steppe and desert climate (BSH) region of India.
2020	International Conference on Advances in Materials Processing and Manufacturing Applications (iCADMA-2020) held on November 5 – 6, 2020.	Sharma A., Chauhan R., Kallio?lu M. A., Chinnasamy V., Singh T. A review of phase change materials (PCMs) for thermal storage in solar air heating systems.
2020	1st International Conference on Recent Trends in Developments of Thermo-fluids and Renewable Energy (TFRE-2020) held on November 26 – 28, 2020	Sharma A., Chauhan R., Singh J. Investigation of Thermo-Hydraulic Performance for Different Arrangements of Ribs in Rectangular Solar Air Channel.
2019	7th International conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering, IIT Ropar (Pb)	Sharma A., Singh J., Chauhan R. Investigation of thermo-hydraulic performance for different arrangement of turbulent geometries in rectangular fluid flow channel.

2018	AIP Conference Proceedings. 2018; 1953:130029	Khargotra R, Dhingra S, Chauhan R, Singh T. Performance investigation and comparison of different turbulator shapes in solar water heating collector system
2018	AIP Conference Proceedings. 2018; 1953:190082	Rathi MK, Singh T, Chauhan R. Dynamic mechanical analysis of waste tyre rubber filled brake friction composite materials
2016	MATEC Web of Conferences. 2016; 57:05003	3. Singh T, Jyoti K, Patnaik A, Chauhan R, Kumar N. Application of silver nanoparticles synthesized from Raphanus Sativus for catalytic degradation of organic dyes

### Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI		Development of Green Campus under Development of Solar Cities Programme	Ministry of New and Renewable Energy (MNRE, GOI)	30.03.2016	24.11.2017	5.00 Lakhs	Completed	Dr. Raj Kumar and Dr. Bhaskar Goel

### Events Organized :

Category	Type	Title	Venue	From	To	Designation
Workshop	National	Fluid Mechanics	Sir Visvesvaraya Hall, Shoolini University	20-05-14	30-05-14	Coordinator
STC	National	IC Engine Fuels and Combustion Technologies (ICEFCT-19)	IT Building, Dr B.R. Ambedkar, NIT Jalandhar	19/03/2019	24/03/2019	Coordinator

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Sanjeev Kumar (22809002)	Performance investigation of hybrid solar utilization system	On-going	2022	Dr. Rajeev Kukreja
Puneet Sharma (22509006)	Design and development of energy efficient solar cooker	On-going	2022	Dr. Nitin Sharma
Rajneesh Kumar (21809010)	Performance Investigation of Solar Thermal Utilization System	On-going	2021	Dr Saurabh Kango
Ashutosh Sharma (19509003)	Design and development of energy efficient solar heat exchanger	On-going	2019	--- NA ---
Ashok Bhardwaj (14PHDME01)	Design Development and Investigation of an Indirect Solar Dryer for Medicinal Herbs of Himalayan Region	Completed	2014 - 2020	Dr. Raj Kumar

### PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Sukesh Ghosh (20209210)	Thermal analysis of solar energy utilization system	ongoing	2022	
Kartik Kashyap (19909206)	Techno-economic analysis of small hydropower plant in Himachal Pradesh, India	Completed	2022	
Jagmeet Singh (18209008)	Investigation of thermohydraulic performance of artificially roughened solar air collector	Completed	2021	

### Admin. Responsibilities :

Position Held	Organization	From	To
Warden (MBH-Mess)	Dr B R Ambedkar NIT Jalandhar	15/08/2019	Till Date
Deputy Chief Warden	Dr B R Ambedkar NIT Jalandhar	14/01/2021	till date
Assistant Training and Placement Officer / Assistant Placement Officer / Co-coordinator Placement	Dr B R Ambedkar NIT Jalandhar	01.03.2019	21.08.2022

### Award and Honours :

Title	Activity	Given by	Year
Certificate of Excellence	Workshop Coordinator	Indian Institute of Technology Kharagpur	2014