

PROF. RAJESH KUMAR

Professor, Department of Mechanical Engineering
Delhi Technological University, Bawana Road, Delhi-110042
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DOB: 01/01/1975



EXPERIENCE: 24 years of teaching and research

EMPLOYMENT TILL DATE:

- **PROFESSOR** (Delhi Technological University, New Delhi)-15th June 2015 to till date
- **ASSOCIATE PROFESSOR** (Delhi Technological University, New Delhi)-15th June 2012 to 14th June 2015.
- **READER** (MITS, Gwalior): 10th August 2010 to 11th June 2012.
- **LECTURER** (Amity School of Engg. and Tech., New Delhi): 1st August 2000 to 31st July 2010.

SPECIALIZATION: Refrigeration & Air- conditioning, Fluid Mechanics, Thermodynamics, Heat transfer, solar energy, hydrogen energy, Micro and Nano scale heat transfer, computational fluid dynamics

ACADEMIC QUALIFICATIONS: B.Tech.(Mech. Engg.), M.E.(Thermal Engg.), Ph.D. (Thermal Engg.)

RESEARCH PUBLICATIONS:

Published in International Journal = 54

International Conference = 30

ORCID ID=0000-0002-9839-6001

RESEARCH PAPERS PUBLISHED IN: INTERNATIONAL JOURNALS

1. Faizan Khalid, **Rajesh Kumar** “Thermodynamic assessment of a new PTC operated polygeneration system for fresh water, cooling, electricity and hydrogen production for a residential community” **International Journal of Hydrogen Energy (2023)** (Elsevier, SCIE indexed) (<https://doi.org/10.1016/j.ijhydene.2023.03.176>)
2. Prabhat Ranjan, **Rajesh Kumar** and R.S. Walia “Morphological microstructural and mechanical study of FGM coatings prepared using HVOF technique” **Journal of Mechanical Science and Technology. (2023).** (springer, SCIE indexed).

3. Prabhat Ranjan, **Rajesh Kumar** and R.S. Walia “Determination of Mechanical and Tribological Properties of Five Layered FGM Coatings prepared using HVOF Technique” *Journal of the National Science Foundation of Sri Lanka*. (2023). (SCIE indexed)
4. Mayank Singhal, **Rajesh Kumar**, R Walia, S. K Pandey,. (2023). Experimental Investigation and Thermophysics Analysis of Joule Thomson Cooler Applicable to Infrared Imaging. *Defence Science Journal*, 73(4), 457-467. <https://doi.org/10.14429/dsj.73.18686>
5. Kaushalendra Kumar Singh, **Rajesh Kumar** “Energy, Exergy, Environmental and Economic Analyses of Natural Refrigerants for Cascade Refrigeration” *Arabian Journal for Science and Engineering*. (Accepted, March 2022) (Springer, SCIE indexed) (<https://doi.org/10.1007/s13369-022-06804-7>)
6. Mohd Asjad Siddiqui, Abdul Khaliq, **Rajesh Kumar** “Thermodynamic and comparative analysis of ERC and ARC integrated wet-ethanol fueled HCCI engine for cogeneration of power and cooling *ASME- Journal of Thermal Science and Engineering Applications* (ASME, SCIE indexed) (APRIL 2022, Vol. 14 / 041003-1)
7. Faizan Khalid, **Rajesh Kumar** “Development and assessment of a new solar-based trigeneration system using hydrogen for vehicular application in a self-sustained community” *International Journal of Hydrogen Energy* (Accepted 1 April 2022) (Elsevier, SCIE indexed) (<https://doi.org/10.1016/j.ijhydene.2022.04.008>)
8. Sachin Rana, Mohammad Zunaid , **Rajesh Kumar** “Enhancement of thermal energy storage in a phase change material heat exchanger having elliptical and circular tubes with & without fins, *Journal of Energy Storage* (Elsevier) , 56 (2022) 105856.
9. Sachin Rana, Mohammad Zunaid, **Rajesh Kumar** “CFD approach for the enhancement of thermal energy storage in phase change material charged heat exchanger,” *Case Studies in Thermal Engineering* ,(Elsevier) 33, (2022), 101921
10. Abdul Khaliq, Bandar A. Almohammadi, Mathkar A. Alharthi, **Rajesh Kumar**, Mohd Asjad Siddiqui “Investigation of a combined refrigeration and air conditioning system based on two-phase ejector driven by exhaust gases of natural gas fueled homogeneous charge compression ignition engine” *ASME- JOURNAL OF ENERGY RESOURCES TECHNOLOGY* (ASME, SCIE indexed) (DECEMBER 2021, Vol. 143 / 120911-1)
11. Mohd Asjad Siddiqui, Abdul Khaliq, **Rajesh Kumar** “Proposal and analysis of a novel cooling-power cogeneration system driven by the exhaust gas heat of HCCI engine fuelled by wet-ethanol” *Energy*, Volume 232, October 2021,(Elsevier, SCIE indexed)
12. Faizan Khalid, **Rajesh Kumar** and Farrukh Khalid “Feasibility study of a new solar based trigeneration system for fresh water, cooling and electricity production” *International Journal of Energy Research* (Accepted, July 2021) (John Wiley & Sons, SCIE indexed)

13. Kaushalendra Kumar Singh, **Rajesh Kumar**, Anjana Gupta. “Multi-objective optimization of thermodynamic and economic performances of natural refrigerants for cascade refrigeration” *Arabian Journal for Science and Engineering*. (**Accepted, June 2021**) (**Springer, SCIE indexed**)
14. Kaushalendra Kumar Singh, Rajesh Kumar, Anjana Gupta “Comparative Exergetic, Economic and Exergoeconomic analysis of a hybrid cascade refrigeration system using ammonia-propane, propane-propylene and isobutane-propane refrigerant pairs”, *Int. J. Exergy*, Vol. 36, Nos. 2/3/4, 2021, **Exergy – an international Journal(Inderscience, SCIE indexed)** .
15. Abdul Khaliq, Mathkar A Alharthi, Saeed Alqaed, Esmail Mokheimer, **Rajesh Kumar** “Analysis and Assessment of Tower Solar Collector Driven Trigenation System” **Journal of Solar Energy Engineering**,142(5), 051003-10 , OCTOBER 2020, **Transactions of the ASME**.
16. Devendra Kumar Gupta, **Rajesh Kumar**, Naveen Kumar, “Performance analysis of PTC field based ejector organic Rankine cycle integrated with a triple pressure level vapor absorption system (EORTPAS)”, *Engineering Science and Technology, an International Journal (ELSEVIER, SCIE indexed)*, [Volume 23, Issue 1](#), February 2020, Pages 82-91.
17. Kaushalendra Kumar Singh, **Rajesh Kumar**, Anjana Gupta,” Comparative energy, exergy and economic analysis of a cascade refrigeration system incorporated with flash tank (HTC) and a flash intercooler with indirect subcooler (LTC) using natural refrigerant couples, **Sustainable Energy Technologies and Assessments(Elsevier)**, Volume 39, 2020, 100716, <https://doi.org/10.1016/j.seta.2020.100716>.
18. Sanjay Sundriyal, Jitender Yadav, R.S. Walia , Vipin, and **Rajesh Kumar**, “Thermophysical-Based Modeling of Material Removal in Powder Mixed Near-Dry Electric Discharge Machining” **Journal of Materials Engineering and Performance(2020), springer. 1059-9495**.
19. Gaurav Krishnayatra, Sulekh Tokas, **Rajesh Kumar**,” Numerical heat transfer analysis & predicting thermal performance of fins for a novel heat exchanger using machine learning” **Case Studies in Thermal Engineering(Elsevier)** vol. 21 (2020) 100706.
20. Abdul Khaliq, **Rajesh Kumar**, Esmail M.A. Mokheimer, “Investigation on a solar thermal power and ejector-absorption refrigeration system based on first and second law analyses”, **Energy 164 (2018) 1030-1043**.
21. Abdul Khaliq, Esmail M.A. Mokheimer and **Rajesh Kumar**, “Energy and exergy analyses of a solar powered multi-effect cooling cycle”, *Int. J. Exergy*, 27(4), 2018

22. U. Sahoo, R. Kumar, S.K. Singh, A.K. Tripathi, “Energy, exergy, economic analysis and optimization of polygeneration hybrid solar-biomass system”, **Applied Thermal Engineering** 145 (2018) 685–692
23. U. Sahoo, R. Kumar, P C Pant, R. Chaudhary “Resource assessment for hybrid solar-biomass power plant and its thermodynamic evaluation in India” **Solar Energy**, **139(2016)**, **47-57**
24. U. Sahoo, R. Kumar, P.C. Pant, R. Chaudhary “Development of an innovative polygeneration process in hybrid solar-biomass system for combined power, cooling and desalination” **Applied Thermal Engineering** **120 (2017) 560–567**
25. U. Sahoo, R. Kumar, P C Pant, R. Chaudhary “Scope and sustainability of hybrid solar–biomass power plant with cooling, desalination in polygeneration process in India” **Renewable and sustainable energy reviews**,**51(2015)**, **304-316**.
26. Devendra Kumar Gupta, Rajesh Kumar, Naveen Kumar “Thermodynamic Evaluation of PTC Based Organic Rankine Cycle for Power & Cooling” **European Journal of Engineering Research and Science**, **2(1)**, **2017**, **1-7**.
27. Devendra Kumar Gupta, Rajesh Kumar, Naveen Kumar "First and Second Law Analysis of Solar Operated Combined Rankine and Ejector Refrigeration Cycle" **International Journal of Applied Solar Energy**, Vol. 50, No.2. 2014, pp. 113-121.
28. S K Agrawal, Rajesh Kumar, Abdul khaliq, P jayaswal "Energy and exergy analysis of a novel solar assisted cogeneration cycle for simultaneous heating and triple effect cooling applications" **Int. J. of Exergy**,vol **18**, no.**3(2015)**, pp-**275-296**.
29. U.Sahoo, R. Kumar, P. C. Pant, S. K. Singh and P. Saxena., Evaluation of Solar Thermal Technologies and Applications in India. Advances in Energy Research. Volume 21, Nova Publisher, Hauppauge NY 11788-3619, U.S.A. (Book Id: 6822 & Chapter Id: 31782).
30. Rajesh Kumar, Abdul Khaliq, P.B. Sharma(2013) “Energy and exergy analyses of a new waste heat driven cogeneration cycle for simultaneous cooling and heating applications” **ASHRAE Transactions** , pp**288-301**
31. Abdul Khaliq, Rajesh Kumar, Ibrahim Dincer and Farrukh Khalid (2013)‘Energy and exergy analyses of a new triple-staged refrigeration cycle using solar heat source’ **ASME Transaction, J. Sol. Energy Eng.** **136(1)** ,doi:**10.1115/1.4024126**.
32. SK Agrawal, R Kumar, A Khaliq (2013) ‘First and second law investigation of a new solar assisted thermodynamic cycle for triple effect refrigeration’ **International Journal of Energy Research**, **Article first published online: 21 MAR 2013,DOI: 10.1002/er.3015**.
33. Abdul Khaliq, Basant Agrawal and Rajesh Kumar (2012) ‘First and second law investigation of waste heat based combined power and ejector–absorption refrigeration cycle” **Int Journal of Refrigeration**, **35** , pp.**88-97** .

34. Rajesh Kumar and Abdul Khaliq,(2011) “Exergy Analysis of Waste Heat Recovery Based Ejector Vapor Compression Refrigeration system” **Int. J Energy Institute, 84(4),192-199 (Switzerland).**
35. Khaliq, A., and Kumar, R. (2009) “Exergy analysis of an Industrial Waste Heat Recovery Based Combined Compression Absorption Refrigeration Cycle,” In Refrigeration :Theory, Technology and Applications, Nova Science Publishers, Inc., ISBN: 978-1-61668-930-8.
36. Khaliq, A., Kumar, R., and Dincer, I., (2009) “Performance Analysis of an Industrial Waste Heat Recovery Based Trigenation System,” **Int. J. of Energy Research, 33, pp.737-744.**
37. Abdul Khaliq, Rajesh Kumar and I. Dincer (2009) ‘Exergy analysis of an industrial waste heat recovery based cogeneration cycle for combined power generation and refrigeration system’ **Trans. of ASME-Journal of Energy Resource Technology, JUNE 2009, Vol. 131, pp. 1-7 (USA).**
38. Abdul Khaliq and Rajesh Kumar (2008) ‘Thermodynamic performance assessment of gas turbine trigeneration system for combined heat cold and power production’ Trans. of ASME- Journal of Engineering for Gas Turbines and Power, Vol.130, pp.1-4 (USA).
39. Abdul Khaliq and Rajesh Kumar (2008) ‘Exergy analysis of double effect vapor absorption refrigeration system’ International Journal of Energy Research, Vol.32, pp.161-174 (UK).
40. Abdul Khaliq and Rajesh Kumar (2007) ‘Exergetic analysis of solar powered absorption refrigeration system using LiBr-H₂O and NH₃-H₂O as working fluids’, International Journal of Exergy, Vol. 4, No. 1, pp. 38-53 (Switzerland).
41. Abdul Khaliq and Rajesh Kumar (2005) ‘Finite-time heat-transfer analysis and ecological optimization of an endoreversible and regenerated gas turbine power cycle’, Applied Energy – An International Journal, Vol. 81, pp. 73-84 (Netherland).
42. U. Sahoo, S.K. Singh, R.Kumar, P.C.Pant, I.Barbate. “Performance study of an inclined Flat Plate type Solar Water Distillation System”. Renewable: wind, water and solar 2016;3:2-5.
43. U.Sahoo, S.K.Singh, R.Kumar, P. Kumar. “Mathematical Modelling of Portable Solar Water Heating System”. Journal of Technology Innovations in Renewable Energy 2015;4: 91-95.
44. U.Sahoo, S.K.Singh, R.Kumar, P.Kumar, “Experimental study of Portable Solar Water heating system”. International Journal of Renewable Energy Development 2015;7:107-112.
45. Ravindra Kannojiya and **Rajesh Kumar**, Performance Evaluation of Absorption Refrigeration Systems Using Intelligent Optimization Techniques: A Review, International Journal of Mechanical and Production Engineering Research and Development (IJMPERD) ISSN (P): 2249–6890; ISSN (E): 2249–8001 Vol. 9, Issue 5, Oct 2019, 961–972 (**Published**) (**Scopus Indexed Journal**)
46. Ravindra Kannojiya and **Rajesh Kumar**, Thermo-economic Evaluation & Intelligent Optimization of Solar-thermal Driven Single-Effect LiBr-H₂O Absorption Refrigeration System, Publisher TJPRC. (**Accepted**) (**Scopus Indexed Journal**)

47. Ravindra Kannojiya and **Rajesh Kumar**, Intelligent Optimization of Solar Operated Double-Effect LiBr-H₂O Absorption Refrigeration System, Publisher IJMPERD, TJPRC. (**Accepted**) (**Scopus Indexed Journal**)
48. **Sunil Kumar Sinha**, Naveen Kumar, (2019) Utilization of Blends of Biodiesel and Higher Alcohols in Small Capacity Diesel Engine, DOI: 10.4271/2019-01-0580(Publisher: SAE Technical Paper 2019-01-0580, Scopus indexed)
49. **Sunil Kumar Sinha**, Naveen Kumar, Rajesh Kumar (2019) Characterization of the Physicochemical Property of Blend of Butanol and Octanol with Biodiesel, DOI:10.35940/ijitee.L3083.1081219. (Publisher: IJITEE, Scopus indexed)
50. **Sunil Kumar Sinha**, Naveen Kumar, Rajesh Kumar (2019) Performance emission of n-octanol- biodiesel blend in diesel engine, DOI:.35940/ijrte.D7406.118419 (Publisher: IJRTE, Scopus indexed)
51. Vijay Shekhar Sharma, **Rajesh Kumar**, “Cellulose as Thermal Insulation and Its Comparative study with EPS Insulation”. Solid State Technology, PennWell Publishing Co. (SCOPUS JOURNAL, 2020)
52. *Gaurav Krishnayatra*, Sulekh Tokas, **Rajesh Kumar**, “Numerical heat transfer analysis & predicting thermal performance of fins for a novel heat exchanger using machine learning”. *Case Studies in Thermal Engineering, Elsevier (SCIE)*, 2020.
53. *Gaurav Krishnayatra*, Sulekh Tokas, **Rajesh Kumar**, Mohd. Zunaïd, “Parametric study of natural convection showing effects of geometry, number and orientation of fins on a finned tube system: a numerical approach”, *Journal of Thermal Engineering (ESCI)*, Yildiz University Press
54. *Gaurav Krishnayatra*, **Rajesh Kumar** ,: "Convective Heat Transfer Analysis of Longitudinal Fins on Horizontal Hollow Cylinder ", International Journal of Mechanical and Production Engineering (IJMPE), 7 (11), 32-37, 2019

RESEARCH PAPERS PUBLISHED IN: INTERNATIONAL CONFERENCES:

1. Kaushalendra Kumar Singh, **Rajesh Kumar**, Anjana Gupta. Multi-objective optimization of an ammonia based multi-stage vapour compression refrigeration system with flash intercooler cum sub-cooler. *Paper presented at: 3rd International conference on Computational and Experimental Methods in Mechanical Engineering; 2021 Feb 11-13; Greater Noida, India.*
2. Kaushalendra Kumar Singh, **Rajesh Kumar**, Anjana Gupta. Multi-objective optimization of cascade refrigeration system using NH₃-CO₂ and NH₃-N₂O refrigerant pairs. *Paper presented at: 3rd International conference on Computational and*

Experimental Methods in Mechanical Engineering; 2021 Feb 11-13; Greater Noida, India.

3. Mohd Asjad Siddiqui, Abdul Khaliq, **Rajesh Kumar**. Thermodynamic analysis of exhaust waste heat recovery from turbocharged HCCI engine fueled by wet-ethanol using an Absorption Refrigeration Cycle (ARC), *Paper presented at: 1st International conference on Technology Innovation in Mechanical Engineering; 2021 May 10-11; Bhopal, India.*

4. Mohd Asjad Siddiqui, Abdul Khaliq, **Rajesh Kumar**. Thermodynamic investigations of a turbocharged homogeneous charge compression ignition (HCCI) engine running on wet-ethanol, *Paper presented at: 1st International conference on Technology Innovation in Mechanical Engineering; 2021 May 10-11; Bhopal, India.*

5. Gaurav Krishnayatra, Sulekh Tokas, **Rajesh Kumar**, and Mohd. Zunaid, “ 3 Dimensional CFD analysis of Laminar Flow Natural Convection of Hollow Cylinder with Annular Fins”, **Proceedings of 5th World Congress of Mechanical Chemical & Materials Engg. (SCOPUS)**, 2019

RESEARCH GUIDANCE

Details of Ph.D students			
S.No.	Name	Title of thesis	status
1	Surendra Agrawal	ENERGY AND EXERGY ANALYSIS OF SOLAR THERMAL DRIVEN MULTIPLE OUTPUT THERMODYNAMIC CYCLE	Awarded in RGPV Bhopal(2017)
2	Umakant Sahoo	DESIGN AND OPTIMIZATION OF POLYGENERATION PROCESS IN HYBRID SOLAR THERMAL POWER PLANT FOR COOLING & DESALINATION"	Awarded in DTU Delhi(2017)
3	Devendra Kumar Gupta	THERMODYNAMIC ANALYSIS OF SOLAR OPERATED COMBINED POWER AND EJECTOR REFRIGERATION CYCLE USING ECOFRIENDLY REFRIGERANTS	Awarded in DTU, Delhi (2018)
4	R. Kannoja	PERFORMANCE ANALYSIS OF SOLAR-THERMAL DRIVEN ADVANCED REFRIGERATION SYSTEMS USING INTELLIGENT TECHNIQUES	Awarded in DTU, Delhi (2020)
5	Sunil Kumar Sinha	Study on use of Renewable Fuels in a Compression Ignition Engine	Awarded in DTU Delhi(2020)
6	Kaushlendra Kumar Singh	PERFORMANCE ANALYSIS AND MULTI OBJECTIVE OPTIMIZATION OF MULTI STAGE VAPOUR COMPRESSION REFRIGERATION SYSTEMS	Awarded in DTU (2021)
7	Mohd Asjad Siddiqui	ENERGY AND EXERGY RECOVERY FROM WET-ETHANOL FUELLED HCCI ENGINE FOR PERFORMANCE ENHANCEMENT AND AIR CONDITIONING	Awarded in DTU (2022)
8	SACHIN RANA	CFD MODELLING FOR SHAPE OPTIMIZATION OF PHASE CHANGE MATERIAL (PCM) HEAT EXCHANGER IN DOMESTIC SOLAR WATER HEATING SYSTEM	Awarded in DTU (2023)
9	Faizan Khalid	Thermodynamic analysis of solar based polygeneration system for a residential community	Awarded in DTU (2023)
10	Mayank Singhal	INVESTIGATION OF THERMOPHYSICAL ASPECTS OF INFRARED DETECTOR CRYOCHAMBER WITH CRYOCOOLING	Will be submitting soon (in 2024)
11	Prabhat Ranjan	THERMAL ANALYSIS AND CHARACTERIZATION OF FGM COATING USING HVOF FOR CYLINDER LINER OF I.C. ENGINE	Will be submitting soon(in 2024)
12	JAYESH KUMAR	THERMODYNAMIC MODELING AND EXPERIMENTAL	Will be

		INVESTIGATION OF PCM BASED LHTES SYSTEM WITH EMBEDDED HEAT PIPES FOR THERMAL CHARGING PERFORMANCE ENHANCEMENT	submitting soon (in 2024)
13	Yogendra Singh	DESIGN AND EXPERIMENTAL INVESTIGATION OF AN INNOVATIVE SOLAR DRYER-CUM-SPACE HEATING SYSTEM USING THERMAL ENERGY STORAGE	Registered in DTU Delhi (2018)
13	Abhishek Kumar	Performance analysis of conical solar still by incorporating energy metrics and efficiency analysis"	Registered in DTU Delhi (2018)
14	Vijay Shekhar	Performance Investigation of Cellulose Fiber in Building Structure for Enhancement of Thermal Insulation	Registered in DTU Delhi (2021)
15	Richa gupta		Registered in DTU Delhi (2021)
16	Amit kumar sahu	Numerical and Experimental Assessment of Microchannel Heat Sink by BeO/Water-based Ethylene Glycol Nanofluid	Registered in DTU Delhi (2021)
17	Pradeep Bernwal		Registered in DTU Delhi (2023)

Details of M.Tech. students			
S.No.	Name	Title of thesis	status
1	Rohit Goyal	Thermodynamic analysis of waste heat based operated steam ejector refrigeration system	Completed(2014)
2	Rahul Singh	Thermodynamic analysis of diesel engine exhaust heat operated NH ₃ -H ₂ O refrigeration system	completed(2014)
3	Mahendra Pandey	Exergy analysis of Power plant	completed(2014)
4	Santosh Kumar	Design and Simulation of Portable Solar Distillation System and Domestic hot water in Co-generation Process	completed(2015)
5	Saurabh	Thermodynamic analysis of Air conditioning system using waste heat of steel plant	completed(2015)
6	Mayank Kumar	CFD analysis of two phase flow inside a horizontal tube	completed(2015)
7	Chandra Shekharsom	Thermodynamic analysis of power generation using waste heat of cement and steel plant	completed(2016)
8	Sajal Gupta	Evaluation of Energy and Exergy Performance of a Cryogenic Air Separation Plant for generating Liquid Oxygen : A Case Study	completed(2016)
9	KanavVij	Designing of Mechanism for Multi-Axis Sun Tracking System	completed(2016)

10	Sachin	MODELLING OF TRIPLE PRESSURE-REHEAT AND SUPPLEMENTARY FIRED COMBINED CYCLE POWER PLANT USING GT PRO	completed(2016)
11	Abhishek	Analysis of Wind Turbine Power Generation For Different Turbine Rotors	completed(2016)
12	Ashish Yadav	Designing of A Solar Concentrator Based Mechanical Process Heat Applications In Hospitality Industry	completed(2017)
13	Vivek Hans	Estimation of Power Generation Capacity of Non Woody Biomass and Coal Biomass Mixed Fuel Samples and Their Energy Values	completed(2017)
14	Vikas Kumar Tomar	Feasibility Study of Concentrated Solar Thermal Steam Cooking System: An Application In DTU Hostel	completed(2017)
15	Piyush Raj	Investigating The Scaling Effects On Blade Structural Characteristics Of Wind Turbine Using Cfd Simulation	Completed (2018)
16.	Jitendra Yadav	Thermo-Physical Modelling Of Powder Mixed Near Dry Edm Process	Completed (2018)
17.	Amit Sheoran	Analytical Simulation And Fabrication Of Compressed Air Driven Engine Using four-stroke SI Engine	Completed (2018)
18	Saurabh Anand (2K17/THE/14)	Comparative analysis of Thermodynamics performance of Cascade Refrigeration system for refrigerant Couple R23/R290 and R23/R600A	Completed (2019)
19	Gaurav Krishnayatra	Thermal Hydraulic Modelling of Intermediate Heat Exchanger used in Liquid Metal Cooled Nuclear Reactor	Completed (2020)
20	Vijay Shekhar Sharma	Fabrication of cellulose fibre for thermal insulation using paper waste	Completed (2020)
21	Pankaj Kumar	Experimental Study on wire mesh based flat plate collector	Completed (2022)
22	AKITA SUKHDAVE (2K19/THE/01)	COMPARATIVE ENERGY AND EXERGY ANALYSIS OF ORC-VCR AND MODIFIED ORC-VCR CYCLE USINGDIFFERENT WORKING FLUIDS	Completed (2022)
23	Mahendra Kumar Arya(2K20/THE/25)	Energy and Exergy Analysis of Ground Source Heat Extraction Technology in India	Completed (2022)
24	AYUSH SARASWAT (2K20/THE/06)	Performance analysis of solar chimney power plant (SCPP) : A CFD approach	Completed (2022)
25	HARSH VERMA (2K20/THE/11)	Thermodynamic assessment of s-CO ₂ Brayton cycle integrated with cascaded LiBr-H ₂ O and Trans-CO ₂ Vapour Absorption Refrigeration for waste heat recovery of Gas turbine Engine	Completed (2022)

INVITED LECTURES AND CHAIRMANSHIPS AT NATIONAL OR INTERNATIONAL CONFERENCE/ SEMINARS

S. No.	Title of Lecture/ Academic Session	Title of Conference/ Seminar with date (s)etc	Organized by	Whether International/ National/State
1	Thermodynamics of Multi-effect vapor absorption refrigeration system	International workshop on HVAC&R, 24-28 March 2023	AMU- Aligarh	International
2	Advanced Energy Technologies for Sustainable Development (Keynote speaker)	International Conference on Advancements in Interdisciplinary Research (AIR-2022)-Smart and Sustainable Society-6-7 May 2022	MNNIT- Allahabad	International
3	Development and challenges of HCCI Engine along with Performance Enhancement and Air Conditioning	ALTERNATIVE ENERGY SOURCES FOR SUSTAINABLE DEVELOPMENT(January 3 – 14, 2022,)	Delhi Technological University	
4	HYBRID SOLAR AND BIOMASS SYSTEM FOR POWER, COOLING & DESALINATION	Technology Innovations in Mechanical Engineering 2021(TIME-2021)(Key note speaker)	Sagar Institute of Science and Technology Gandhi Nagar Bhopal Bhopal (755), India, April 12-13, 2021	International
5	Renewable energy: a review	Two weeks short term course on “Thermodynamics and its applications to solar energy systems design” 9-18 March, 2019	MITS, Gwalior	National
6.	Recent applications of solar energy-Key note speaker	Recent advancement in mechanical engineering	Delhi college of technology and management, Palwal (Haryana)	National
7.	Fluid dynamics and CFD	Advances in chemical Engineering	MITS, Gwalior	National
8.	Modelling of thermal systems	Modeling and Simulation of Dynamical Systems and Optimization (June 9 –June 13, 2014)	Delhi Technological University(TEQIP-II)	National
9	Applications of solar energy for power generation	Renewable Energy and Alternative Fuels(REAFF-2014)”	Delhi Technological University (TEQIP-II)	National

Reviewer: Active reviewer of many reputed Journals of ASME, Elsevier, Springer, Taylor and Francis, Inderscience etc.

CONFERENCE AND FDP ORGANIZED:

1. Joint organizing secretary of STME-2013 (INTERNATIONAL CONFERENCE)
2. Co-Coordinator of “Modeling and Simulation of Dynamical Systems and Optimization (MSDSO-2014)” June 9 – June 13, 2014
3. Co-Coordinator of “Renewable Energy and Alternative Fuels (REAF-2014) June 16 – June 20, 2014
4. Co-Coordinator of “Precision Manufacturing: Technology for Better Tomorrow (PMTBT-14) “July 14 – July 18, 2014.

SUBJECTS TAUGHT:

1. Advanced Fluid Mechanics (PG)
2. Fluid Mechanics (UG)
3. Heat & Mass Transfer (UG)
4. Refrigeration and Air-Conditioning (UG)
5. Thermodynamics (UG)
6. Energy conservation and efficiency (PG)
7. Solar energy (PG)
8. Power plant Engineering (UG & PG)
9. Engineering Mechanics (UG)
10. Engineering Graphics (UG)

OTHER INFORMATION

- **Life time member of Solar Energy Society of India**
- **Fellow of The Institution of Engineers (INDIA)**

(Prof. Rajesh Kumar)
Professor
Mech Engg Dept
DTU, Delhi