

International Conference on Thermal Sciences and Sustainable Energy (ICTSE-2026)

January 23-24, 2026

Organized By

Department of Mechanical Engineering,
National Institute of Technology Warangal

Detailed Program Schedule

Day 1 - 23/01/2026

Keynote Session 1 (Ambedkar Learning Centre)

Keynote 1: 10:40 – 11:15

Speaker: Prof. Alexandre Presas Batlló, Director, CDIF-UPC, Spain

Title: Innovation and trends in Pumped Storage Operation: The project STOR-HY

Keynote 2: 11:15 – 11:50

Speaker: Dr. S.V. Ramana Murty, Director, Gas Turbine Research Establishment, Bengaluru, India

Title: Advanced Technologies for Aero Gas Turbine Engines

Keynote 3: 11:50 – 12:25

Speaker: Prof. P S Lee, NUS Singapore

Title: Beyond the Thermodynamic Wall: Heat Transfer Limits and Liquid Cooling Architectures for AI Infrastructure

Lunch Break (12:30 to 14:00)

Session 1 Time - 14:00 – 15:00 (Seminar Hall Complex)

Bose hall

T1 (Thermal Sciences)

Topics: Heat Transfer Enhancement Techniques and devices

Session Chairs - Dr. B Suresh, GTRE, DRDO

Dr. Satyanarayan Patel, IIT Indore,

SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	T501	Process parameter optimization of Al ₂ O ₃ /distilled water-based nanofluid for higher thermal conductivity and stability using the Taguchi-Grey method.	Jagdish B. Pawar*
2	14:12–14:24	T504	Numerical Simulation and Optimization of Wavy Grooved Cylindrical Pin Fin Heat Sink	Abhijith Raj B*, Gijoy S, Rejin S, Praveen A, Jyothish Abraham
3	14:24–14:36	T506	Thermal Performance Factor of Heat Transfer Augmentation for Air Flow Inside a Smooth Circular Duct Facing Series of Vertically Heated Circular Discs Configuration at Right Angle Using CFD Analysis	Bamaniya Jayesh Pravinbhai*, Dr. Mayur D Kevat and Dr. Amit R Patel
4	14:36–14:48	T508	Numerical investigation of heat transfer in a 2d sudden expansion channel with partially heated bottom wall.	V Murugashri*, Rahul P, Nithesh S V, Seranthian Ramanathan
5	14:48–15:00	T509	Numerical study on jet impingement cooling on a vertically oriented rotating disc with localised heating	Dinesh D.*, Akhil Sivasdas, Deepu M.

Homi Bhaba hall				
T2 (Thermal Sciences)				
Topics: Refrigeration and Air conditioning				
Session Chairs – Prof. V Vinayaka Ram, BITS Hyderabad Campus, Prof. K Kiran Kumar, NITW				
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	T902	Numerical Investigation Of Green Filamentous Algae Natural Fiber As A Sustainable Insulating Material For Refrigerator Units	Muhammed Shahnad M*, Gijoy S, Anver Sadath A, Jijith P K
2	14:12–14:24	T907	Advanced Refrigeration Control and Optimization: AI and IoT- Based Smart Refrigeration Energy-Efficient Defrosting Strategies	Anand K, Swetha N*, Santhiya M
3	14:24–14:36	T909	Solar Powered Evaporative Air Cooler with Clay Pot-Based Cooling Medium	Gautham Narayan*, Gijoy S, Praveen A, Lasithan L.G
4	14:36–14:48	T912	Performance Modelling and Experimental Validation of a R134a based Ejector in Refrigeration System	Nyjal Benedict*, Anandakrishnan N, M Mohandas, M Srinivas
5	14:48–15:00	T913	Flow characteristics of Mixed Refrigerant in an Expansion Capillary Used in Joule Thomson Refrigerators	Rajeev Kumar Mandal*, G. Rajasekaran and S. S. Harish Kruthiventi
6	15:00–15:12	T914	Experimental Analysis of Vapour Compression Refrigeration System Using Bi2O3 Nano Lubricant	V.Dhana Raju *, A.Aruna Kumari, K.Appa Rao, M.B.S.Sreekara Reddy, K.Sai Babu
Ramanujan hall				
E1 (Energy and Sustainability)				
Topics: Solar Energy Equipment and Processes				
Session Chairs - Dr. Ravi Kumar, NIT Patna Prof. V P Chandramohan, NITW				
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	E702	CFD and 4E comparison of Air and Spray Cooling of Photovoltaic Panels using Eulerian-Lagrangian two-phase approach	Sushmitha Mohan*, Kottayat Nidhul
2	14:12–14:24	E703	Statistical Analysis of CSP Plant Design for Water-Scarce Regions Using Taguchi S/N Method and ANOVA Approach	Mudar Youssef Taha1*, Ravi K. Peetala1
3	14:24–14:36	E705	Performance and Sustainability Metrics of Solar Drying Systems: A Case Study of Bitter Gourd with and Without Thermal Energy Storage.	Desai Sathya Narayana Rao*, V.P. Chandra Mohan
4	14:36–14:48	E706	Performance Comparison Between Pentagonal and Right-angle Triangle Ribbed Solar Air Collectors by Varying Both Rib Pitch and Height	Shekher Sheelam*, V.P. Chandra Mohan
5	14:48–15:00	E730	A Comprehensive Review: Managing Waste Solar Panels for a Sustainable Future.	Shrutakirti A. Mahajan*, Hansa Jeswani
Raman Hall				
E2 (Energy and Sustainability)				
Topics: Waste to energy				
Session Chairs - Dr. R. Parameshwaran, BITS Hyderabad Campus Prof. M Jerold, NITW				
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	E805	Performance Analysis Of TPMS-Enhanced Thermoelectric Generator For Waste Heat Recovery System	Roopan R*, Pranesh M, S Balamurugan
2	14:12–14:24	E806	LNG Cold Energy Recovery through ORC for Power Generation and Cold Storage Applications	Hemant Pratap Singh*, Nishant Modi, Satyanarayanan Seshadri
3	14:24–14:36	E809	Catalytic Valorization of Petroleum-Derived Oily Sludge using a Fixed Bed Pyrolyzer	Ajay Pawar*, Santanu De
4	14:36–14:48	E812	Performance Enhancement of Graphite Felt Anode by Coating Coconut Shell Biochar and Magnetite Nanoparticles in Microbial Fuel Cells	Shaista Shabbi*, Harshith Pisupati*, Rahul Yadav, Prashant S. Kulkarni

5	14:48–15:00	E814	Development and Characterization of Biodegradable Films from Talipot Palm Starch for Sustainable Packaging Applications	Kailas V* , Mohan B Nair, Rejin S , Gijoy S, Lasithan L
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Khurana hall

F1 (Fluid Sciences)

Topics: **Biofluidics, Compressible fluid flow**

Session Chairs - Dr Harikrishnan S, CUSAT

Prof. V Rajesh Khana Raju, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	F201	Analysis of Magneto-Hemodynamic pulsatile blood flow through porous arteries with different stenosis geometry	Sarathkumar D* , R. Padma
2	14:12–14:24	F202	Numerical Analysis of MHD Nanofluid Blood flow through a Diseased Artery	Nathiya M* , R. Padma
3	14:24–14:36	F204	ADM-Based Analysis of MHD Jeffery-Hamel Blood Flow With DTM Comparison	N. Keerthana* , B. Dhanushri, R. Padma
4	14:36–14:48	F205	Design Optimization and Performance Evaluation of Centrifugal Left Ventricle Assisted Device for Physiological Blood Flow	Akil Namitha Perumal* , Micha Premkumar, Rohit Rupish Ramesh* , Seralathan Sivamani
5	14:48–15:00	F301	Investigation on Characteristics of Subsonic-Supersonic Shear Layers in a Co-flowing Rocket Nozzle	Abhilash Narayan, Akhil Sivadas* , Bijukumar KS, Deepu M

Chandrashekhar hall

F2 (Fluid Sciences)

Topics: **Multiphase Flows**

Session Chairs - Dr. K.N.V. Adinarayana, AERB

Prof. Karthik Balasubramanian, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:00–14:12	F702	Numerical Study of Turbulence influence along with particle shape and size distribution in Pelton injector	Rahul Vishwakarma, Chandra Shekhar Pant*
2	14:12–14:24	F901	Subcritical and Supercritical CO2 Phase Interfacial Instability Analysis.	Tabish Wahidi* , Sultan Alshehery and Shankar Kodate
3	14:24–14:36	F902	A Novel Approach for Modelling Gas-solid Fluidization in a Fluidized Bed Gasifier.	Shahul V Hameed* , Sumer B Dirbude
4	14:36–14:48	F906	Numerical Analysis of Bubble Dynamics in Ship Wake Signatures	Ashwin V Suresh* , Rishikesh S A* , Ashish Alex Sam
5	14:48–15:00	F909	Machine learning-based optimization of agricultural spray dynamics: minimizing drift and enhancing deposition.	Abhijith Krishnan, Arun B Prasad, Jeevan Jacob Alex, Sooraj Subash, Aravind Raju* , Akash K A and Manish M
6	14:00–14:12	F801	Design and Development of a Low-cost Portable Contact Angle Measurement Device.	Ranjith S Kumar, Robin David, Athul B* , Nidhin Lal M, Kannan A, Abey Joseph*

Keynote Sessions 2 (Seminar Hall Complex - Boss Hall)	
Keynote 4: 15:05 – 15:40	
Speaker: Prof. Prakash C Ghosh, IIT Bombay	
Title: Rising of green H2 as an energy carrier from the niche to the mass market	

Session 2 – 23/01/2026 Time - 16:00 – 17:40 (Seminar Hall Complex)				
Bose hall				
T3 (Thermal Sciences)				
Topics: Heat Transfer Enhancement Techniques and devices				
Session Chairs – Dr A S Krishnan, Coimbatore Institute of Technology			Prof. H P rani, NITW	
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00-16:12	T511	Investigating the criticality of a fin base for effective cooling of a solar PV module	Shubham Kumar*, P M V Subbarao
2	16:12-16:24	T516	Flow and heat transfer characteristics of an impinging jet array with varying surrounding jet inclination angles	Abdoul-enziz Imamou, S Harikrishnan*, A Harish
3	16:24-16:36	T517	Diatom-Inspired Fin Geometries for Enhanced Convective Heat Transfer in Heat Sinks	Arjun M B*, Nithin Pradeep*, Sidharth M R*, Vignesh Girish, Gijoy .S, Jyothish Abraham
4	16:36-16:48	T518	Temperature management in large-scale planetary vertical mixers for solid propellant manufacturing	Sai Teja Tumu*, Jayaraju Thirumani and G Ramesh Babu
5	16:48-17:00	T519	Performance and Flow Analysis of Concave-Convex Heat Exchangers with Staggered Circular Welding Spot Patterns	Ramesh Kumar*
6	17:00-17:12	T520	Advanced Heat Transfer Methods for Enhanced Thermal Management in Contemporary Engineering Systems	Shreeyash Mhatre*, Abhishek Shinde, Vikas Jadhav, Avinash Somatkar, Atharv Lohakare
7	17:12-17:24	T523	Comparative investigation of steady and pulsed air jet impingement for improving heat transfer rate through various parameters	Shaikh Sohel. Mohd Khalil*, Mahammd salman Warimani, Rai Sujeet Nath Sahai, Khizar Ahmed Pathan
8	17:24-17:36	T524	Investigation of Torridity Capabilities from Steady and Pulsed Air Jet Impingement.	Shaikh Sohel. Mohd Khalil*, Mohd Salman Warimani, Khizar Ahmed Pathan, Ashutosh Digamber Yetalkar
9	17:36-17:48	T525	Role of Separator in Jet Impingement Cooling System	Manikanta Bandlamudi*, Siva Krishna Karnati and Lakshmi Sirisha Maganti
Homi Bhaba hall				
T4 (Thermal Sciences)				
Topics: Combustion, IC engines				
Session Chairs – Dr.Jagdish Babusing Pawar, SJCEM, Palghar			Prof. G. Naga Srinivasulu, NITW	
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00-16:12	T202	Effect of Heat Release on Longitudinal Acoustic Modes in a Bluff Body Combustor	M. Srinivasa Rao*, R. Narasimha Rao
2	16:12-16:24	T203	Numerical investigation of impact of H2 enrichment on CH4 swirl flames: Flow-field, flame structure and NOx emissions	Ganivada Prasanth*, Amrit B Sahu
3	16:24-16:36	T204	Enhancing Biogas Combustion Stability in Sandia Burner: Insights from OpenFOAM Simulations with Hydrogen Addition	Harish Abubaker*, Saleel Ismail
4	16:36-16:48	T205	Thermodynamic Simulation of Spirulina Biodiesel Blends in a Single Cylinder DI Diesel Engine using Diesel-RK across Compression Ratio	B. Varun Kumar, M. Karuppaiah Rajkumar,

				S.Rajkumar, Harish J H* , Rathish saravanan
5	16:48- 17:00	T703	The Impact of Diethyl Ether as a Biofuel Additive on the Performance and Emissions of a Diesel Engine Fueled with Karanja Oil	Vetrivel Kumar Kandasamy, Bothiraj Thandiyappan, Silambarasan Rajendran, Karthikeyan S*
6	17:00- 17:12	T704	Optimization-of-Engine-Performance and-Emission Reduction in-Single Cylinder-Di Diesel-Engine by-using Selective-Catalytic Reduction-Technology	Vetrivel Kumar Kandasamy, Bothiraj Thandiyappan, Silambarasan Rajendran, Dharanitharan M*
7	17:12- 17:24	T706	Experimental investigations of Performance and Emission Characteristics of a diesel engine fueled with Jatropa Methyl Ester using Nano Additives	Vetrivel Kumar Kandasamy, S Geetha, Silambarasan Rajendran, Maahesh M*
8	17:24- 17:36	T708	Advances in Diesel Engine Optimization Using Biodiesel Blends: Performance, Emission Control, and AI/ML Driven Approach:A Review	Ramavath Suman* , A. Aruna Kumari
9	17:36- 17:48	T709	Investigating emission characteristics and combustion performance of a CRDI engine utilizing novel biodiesel derived from Animal tallow and butanol blends	Ajmeera Naresh* , Ravi Kumar Puli
10	17:48- 18:00	T716	Evaluation of Biodiesel from Rubber Seed Oil and Performance Test	Vetrivel Kumar Kandasamy, S Joseph Dominic Vijayakumar, Tamil Selvan M , Mohammed Jaffar Hussian J*

Ramanujan hall

E3 (Energy and Sustainability)

Solar Energy, Equipment and Processes

Session Chairs –Dr. Md. Qaisar Raza, NIT Patna

Dr. Subhadip Roy, CVRDE, DRDO

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00– 16:12	E709	4E Assessment of a Solar Still with Inbuilt Condenser and Ultrasonic Fogger for Enhanced Potable Water Production.	Nagendra prasad Pandey* , Ravindra Gupta and Yogesh Sahu
2	16:12– 16:24	E710	Performance Assessment, Exergy Evaluation, and Sustainability Analysis of a Triple-Slope Solar Still Operating Under the Subtropical Climate of Prayagraj.	Rahul Patel* , Rahul Dev, Ajaya Bharti
3	16:24– 16:36	E711	Investigation on water depth in phase change material and pulsating heat pipe-based hybrid solar still productivity enhancement.	Jay R. Patel, Parth Gaud* , Y. Naresh
4	16:36– 16:48	E714	Numerical Investigation of Rim Angle Influence on Optical Performance of Parabolic Dish Concentrators.	Muhammed Musthafa Chonari* , Sendhil Kumar Natarajan
5	16:48– 17:00	E715	Influence of Vapor Pressure on the Performance of Double Slope Solar Still.	N.Srinivasa Rajneesh* , Dr.S.Nawazish Mehdi, Dr.B.Hadya
6	17:00– 17:12	E716	A Study of Solar Chimney for Underpass Tunnel.	Rahul Dev* , Madhu Sudan, Suraj Gupta, Riya Garg, Yashav Bharti, and Sumit Kumar
7	17:12– 17:24	E717	Performance Enhancement of Solar Desalination Using Multistage Air Gap Photothermal Membrane Desalination.	Pavan Kumar Shakya* , Jishnu Bhattacharya
8	17:24– 17:36	E718	Receiver Size Optimization in Central Receiver Tower using Particle Swarm Optimization.	Manish Raj* , Jishnu Bhattacharya

Raman hall				
E4 (Energy and Sustainability)				
Fuel cell, Wind turbines, Nuclear Energy				
Session Chairs - Dr. Aneesh A. M., Bits Pilani			Prof. Murali Mohan Seepana, NITW	
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00-16:12	E304	Development And Performance Evaluation Of Microbial Fuel Cells For Sustainable Electricity Production	Gopi Vasudeven* , Avinash Sivam, Ganta Venkata Satya Sai Sireesha, Islavath Baburao, Pulukunta Lokanadha Reddy, and Sendhil Kumar Natarajan
2	16:12-16:24	E601	Experimental Evaluation of Passive Containment Cooling Concept Towards Nuclear Safety	K N V Adinarayana* , Seik Mansoor Ali
3	16:24-16:36	E901	Effect of Solidity on performance characteristics and wake structure of Helical Vertical Axis Wind Turbine	D Unnikrishnan* , Ratna K Velamati, Rakul A Ravi, K Srirangan, Akram Mohammad, Tharun Suresh, Sai Karthik J
4	16:36-16:48	E902	Digital Manufacturing through Dynamic Simulation for Sustainable Upgradation of Wind Turbine Blade Manufacturing Facilities	Malladi Krishna Prasad* , Gamini Suresh, V Vasu
5	16:48-17:00	E906	CFD-Based Investigations of Airfoil Aerodynamics for Offshore Wind Turbine Applications	Renju Raj* , Beena Mary John
6	17:00-17:12	E815	Enhanced biogas production using Achyranthes aspera derived biogenic Fe–Zn–Mn oxide nanocomposites: effects on vermicomposting efficiency and Cicer arietinum growth	Swati Kumari, Abhay Kumar, Shikha Singh, Harish Hirani, Praveen Kumar Srivastava*
7	17:12-17:24	E213	Nano-Magnetite Enhanced Phase Change Microbeads for Energy Storage Applications	Adarsh Arya* , Pathireddy Vishwak Reddy* , Sriharsha Rathna Vardhan Paruchuri* , Aryan Rae* , Prof. R. Parameshwaran, Prof. V. Vinayaka Ram
Khurana hall				
F3 (Fluid Sciences)				
Aerodynamics				
Session Chairs – Dr. Sangamesh C Godi, B. M. S CE, Bengaluru			Prof. Ravi Kumar Peetala, NITW	
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00 – 16:12	F101	Design and Aerodynamic Characterization of a Camber Based Aerofoil for Race Car Rear Wings Using Thin Aerofoil Theory and CFD Techniques	Sharath Ramesh* , P B Nagaraj, Gururaj Lalgı
2	16:12 – 16:24	F102	Comparative CFD Analysis of Aerodynamic Parameters for Reentry Capsules Across the Full Spectrum of Flight Regimes	Anay Deshpande* , Atharv Jadhav* , Hemangi Kulkarni* , Manasi Shete
3	16:24 – 16:36	F103	Design and Implementation of an Altitude-Based Parachute Recovery System for Drones	Hisham Mohammed Asim Khan* , Abdul Samee, Chebrolu Preethi, Yagya Dutta Dwivedi
4	16:36 – 16:48	F104	Investigation Of Boundary Layer Control At Low Reynolds Number Using Passive Devices	N Sri Tejaswini* , Syeda Fatima Ziaularifeen, Harsh Tiwari, Yagya Dutta Dwivedi
5	16:48 – 17:00	F105	Aerodynamic Analysis on Different Delta Wing Configurations	Desaboina Archana, Phanindra Pathuri* , Anirudh S, Y.D. Dwivedi
6	17:00 – 17:12	F108	Design and Analysis of Blended Wing Body	Sai Abhimanyu Yenamandra* , Aushetti Manas, Sri Priaanka Yeddanapudi* , Yagya Dutta Dwivedi

7	17:12 – 17:24	F114	Numerical Comparative Study of Flow over a Cylinder with Splitter Plates using CFD	Bhimu Daddimani, Arumuga Perumal D* , Somashekara Rao Todeti
8	17:24- 17:36	F404	Heatline visualization and stationary bifurcation analysis of mixed convection in a rectangular enclosure with anti-parallel motion of walls	Mrittika Das* , Hari Ponnamma Rani
Chandrashekhar hall				
M1 (Interdisciplinary)				
AI/ML for thermohydraulic systems				
Session Chairs - Dr. Pankaj P. Gohil, SVET, Surat			Prof. Shivraman, NITW	
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	16:00-16:12	M101	A machine learning based analysis of latent heat storage systems using air as heat transfer fluid and paraffin as phase change material.	Lanka Sandeep Raj* , Sane Sreenivasulu, Bandaru Durga Prasad
2	16:12-16:24	M102	Stability aware AI model for predicting thermal properties of nanofluids	R Rakesh Pillai, Faheem Muhammad* , JS Sreelekshmi, Hanna Mariyam Harise, E K Suhaib*
3	16:24-16:36	M301	Computational Analysis of Thrust Characteristics and Longevity in Micro Scale Hybrid Electric Thrusters.	Vadlamani Ananth Vamsi* , Panchireddi Tejash Krishna* , P.P.S Keerthi
4	16:36-16:48	M501	Mechanical, Morphological, Thermal, Kinetic and Flammability studies of compatibilized micro/nano filled ternary PP/PS/HDPE polymer blends.	C Surej Rajan* , Lity Alen Varghese, Shiny Joseph, Soney C George
5	16:48-17:00	M510	Analytical solutions for functionally graded nanobeams.	Gajula Supriya* , Umesh Basappa
6	17:00-17:12	M517	Barriers, Opportunities, and Technological Trends in Metal Additive Manufacturing: Insights from the Vidarbha Region of India	Surendrakumar S. Nagpure* , Minhaj Ahemad Rehman

Day 2 - 24/01/2026

Keynote Sessions 3 (Seminar Hall Complex - Boss Hall)

Keynote 5: 9:30 – 10:10

Speaker: Prof. Tanmay Basak, IIT Madras

Title: Finite Element Implementation on Invisible Energy Flow: Heat functions and Boundary Conditions

Keynote 4: 10:10 – 10:50

Speaker: Prof. P. Sankar Ganesh, BITS Pilani Hyderabad

Title: Deciphering the Trade-Off between Thermal Regimes and Biogas Productivity under High Organic-Loaded Anaerobic Digester

Session 3 – Time - 11:15 – 13:00 (Seminar Hall Complex)

Bose hall

T5 (Thermal Sciences)

Thermal Management of EV components

Session Chairs - Shri. Tumu Sai Teja, SDSC SHAR, ISRO

Prof. S Srinivasa Rao, NITW

SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15–11:27	T101	Comprehensive review on Thermal Management of Electric Vehicle Battery Cells	Neeraj Raj P*, P B Nagaraj, Ashok kumar K, Sumukh S Rao*, Sajja Sri Gowtham*
2	11:27–11:39	T104	Thermal Management of Li-ion Battery using a Phase Change Material (PCM) for Electric Vehicles	Indrajit Bag*, Arup Kundu, Nilkanta Barman, Sudip Simlandi
3	11:39–11:51	T105	Battery Thermal Management System Using Oscillating Heat Pipes in Electric Vehicles	Sebastin Jerry J*, Suresh Kumar R, Jayanthi N, Mukesh A, Arjun M, Naagendra U
4	11:51–12:03	T106	CFD Analysis of Hollow Triangular Spoiler Integration for Improved Temperature Uniformity in Air-Cooled Battery Packs	Illandula Venu*, Kumar Sourav, Nagireddy Praveena Devi
5	12:03–12:15	T107	Review of Battery Thermal Management Techniques in Electric Vehicles	Anand K, Manjuswetha S V*, Mohamed Vaseem J, Mouleeshwaran P.
6	12:15–12:27	T108	Thermal Modeling of a Cylindrical Lithium-Ion Battery with Nano-Enhanced PCM	Rajasekhar Bandela*, Farooq Shaik
7	12:27–12:39	T109	Numerical Investigation on Cooling Characteristics of an Induction Motor	Bikram Barik*, Asish Tripathy, Prokash Chandra Roy, Nilkanta Barman
8	12:39–12:51	T114	Thermal Runaway Propagation in EV Battery Pack Delay by Using Three Air Cooled Channel	Zaid Javed*, Fatima Hana

Homi Bhaba hall

T6 (Thermal Sciences)

Electronics and electrical equipment Cooling, Micro and nanoscale heat transfer

Session Chairs - Dr. Syed M Hussaini, NSAKCET, Hyderabad

Dr. Shaikh S M K, HTIT, Sambhajinagar

SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15–11:27	T301	Impact of Inclination on Thermal Performance of Heat Sink	Junaid Uddin Syed*, Jaya Krishna Devanuri, SM Hussani
2	11:27–11:39	T302	Electronic Cooling of a Raspberry Pi using an Experimental - Numerical Approach	Keshav Raj*, Anant Kumar Rai, Chinige Sampath Kumar
3	11:39–11:51	T303	Numerical Study on the Effect of Variable Server Fan Speed on the Data Center Flow Field	Rajan Jaswal*, P.M.V. Subbarao
4	11:51–12:03	T305	Evaluation of Performance and Emissions Analysis of Methanol-Diesel Blends in a CRDI Dual Fuel Diesel Engine	Ganesh Vantepaka*, Boda Hadya, Kunturu Srinivasulu, T. Pavan Kumar

5	12:03–12:15	T306	Fin design and airflow confinement effects on automotive LED headlamp cooling	Brajesh Nagar, Aditya Gaur, Mohit Singhal and Satyanarayan Patel*
6	12:15–12:27	T801	Pulse-Electrodeposited Ni–CNT Hybrid Coatings on Copper for Stable, High-Flux Pool Boiling Enhancement	M. Selvamuthukumar* , Sanjay Kumar Gupta, Ajoy Kumar Nandy, Karthik Blasubramanian
7	12:27–12:39	T803	Enhancement of Heat Transfer in Microchannel Heat Exchanger with Micro Chambers using Multi Wall Carbon Nanotube Nanofluids	Kuruva Krishna Murthy* , Dangeti Sarath Chandra*, P. Aparna3
8	12:39–12:51	T804	Numerical Study of Heat Transfer in Micro Fin: A Case Study for Constant Perimeter, Area, and Size using Finite Element Method	R.Yuvaraj* , D.Senthilkumar
9	12:51–13:03	T602	Investigation of capillary-fed boiling with aqueous solutions of surfactant and alcohols	Rabindra Baitha, Md. Qaisar Raza* , Amar Kumar, Kumar Shanu Rajan, and Ravi Kumar

Ramanujan hall

E5 (Energy and Sustainability)

Solar Energy Equipment and Processes, Waste to energy

Session Chairs - Dr. Unnikrishnan D, Amrita School of Engineering

Prof. Anjana PA, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15–11:27	E719	PCM-Assisted Air-Gap Photothermal Membrane Desalination for Enhanced Distillate Flux.	Deepti Sachan* , Pavan Kumar Shakya, Jishnu Bhattacharya
2	11:27–11:39	E724	Design and Development of Active Green House Solar Dryer For Potential Food Products	Vasud M. Vaghani, Jeet K. Patel, Vikram P. Rathod* , Vimal K. Patel
3	11:39–11:51	E726	Effect of Metal Foam and Nanofluid Integration on Thermal Performance of a Solar Flat Plate Collector: A Numerical Study.	Syed Mustafkhadri* , Banjara Kotresha, Kishan Naik and Kishorkumar
4	11:51–12:03	E727	Numerical Study of Local Heat Transfer in a Solar Air Heater with Staggered Rectangular Fin-Integrated in Rectangular Duct	Guguloth Harish* , Satyanand Abraham
5	12:03–12:15	E728	Indoor experimental performance assessment of a monocrystalline PV panel under controlled solar irradiance and tilt angle	Sourabh Jain, Aneesh A.M.*
6	12:15–12:27	E731	Energy Performance Characterization and RSM-Driven Optimization of a Direct Expansion Solar-Assisted Heat Pump with a Novel Hybrid Collector-Evaporator.	Rahul Ashok Patil* , Vaibhav Deshmukh
7	12:27–12:39	E804	Techno-Economic Design Optimization and Environmental Analysis of Hybrid Renewable Energy Systems-A case study of NIT Patna Health Centre	Ravi Kumar* , Md. Qaisar Raza
8	12:39–12:51	E810	Evaluation of Influencing Variables of Industry 4.0 Driven Green Manufacturing Practices: A Comprehensive Review in the Vidarbha Region.	Aditya Khandare* Minhaj Ahemad A. Rehman
9	12:51–13:03	E818	A Smart Multi-Temperature Peltier Water Dispenser with Dual-Block Heat Exchange, Touchless Dispensing, and Wastewater Recovery.	Jyothilakshmi R, Hemanthkumar K. J, B. Sadashive Gowda, K R Nandeesh, Umang Kumar Prasad* , Ashmit Kumar Saw, Nithin V

Raman hall				
E6 (Energy and Sustainability)				
Biofuels and Biomass, Energy Storage Systems				
Session Chairs - Dr. Nagendra Prasad Pandey, Parul university Prof. Hari Krishna Chilukoti, NITW				
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15–11:27	E107	Assessment of Performance, Combustion, and Emission Characteristics of Sustainable Jatropa–Butanol Ternary Blends in a Diesel Engine	Nagesh Babu Vemula*, Farooq Shaik, Radha Krishna Gopidesi
2	11:27–11:39	E108	Impact Assessment of biogas Plant in India	Rahul Kumar Rajak*, Gaurav Dwivedi, Prashant Baredar
3	11:39–11:51	E110	From Field to Flywheel: Performance Analysis of a Bagasse Biogas-Powered Dual-Fuel Engine	Hemanthkumar K J*, B. Sadashive Gowda, Jyothilakshmi R
4	11:51–12:03	E111	Evaluation of Tyre Pyrolysis Oil-Diesel Blends as Alternative Fuels for Sustainable HCCI Engine Applications	Dilip S. Borkar*, Sushant S. Satputaley, Santosh P. Alone and Nikhil A. Bhavé
5	12:03–12:15	E207	Charging and Discharging Behaviours of a PCM-based Energy Storage Device: A Numerical Study	Sarama Malik* Nilkanta Barman, Sudip Simlandi
6	12:15–12:27	E209	Comparative Review of Tube Arrangements in PCM-Based Shell and Tube Thermal Energy Storage System	Dharmarapu Laxmi Prasanna*, D. Jaya Krishna
7	12:27–12:39	E007	Design Optimization and CFD Analysis of Vertical Axis Hydrokinetic Turbines for Enhanced Power Generation in Low-Head Water Streams	Shwetha G*, Shwetha sreelakshmi G*, Naveen Kumar B K, Apoorva G C, Vaishnavi M Sattigeri
Khurana hall				
F4 (Fluid Sciences)				
Fluid structure interaction, Hydro machinery, Turbulent Flows				
Session Chairs - Dr. Tabish Wahidi, Xitadel CAE Technologies Prof. Prasanth Anand K L, NITW				
SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15 – 11:27	F601	Effect of Corner Radius on Aerodynamic Characteristics of a 2D Square Cylinder	Dhaval A Suthar*, Dhaval T Solanki* and Dharmendra S Sharma
2	11:27 – 11:39	F603	Starting Flow and Its Sustenance Due to a Flapping Plate in a Quiescent Fluid	Abikrishnaa Parimelalagan*, Snehaunshu Chowdhury, Majid Hassan Khan
3	11:39 – 11:51	F704	Blade profile optimization using control points through theta angle and its rotational effects on the Pump As Turbine (PAT) impeller	Bhukya Naveen Kumar*, Anant Kumar Rai
4	11:51 – 12:03	F707	Computational Assessment of Hydrokinetic Turbines Using Augmentation Technique for Sustainable Power Generation in Low-Velocity Canals	Pankaj P. Gohil*
5	12:03 – 12:15	F001	CFD Simulation of Helium and Steam Distribution in THAI HM-1 Test for Turbulence Model Evaluation in Large-Volume Species Transport Studies	Tushar A. Ghoradkar*, Rupak Kumar Raman, R. S. Rao, Utkarsh S. C., Sanjeev Gupta
6	12:15 – 12:27	F002	Effect of Tube Arrangements on Pressure Drop across Tube Bundles	Sam Solomon D P*, Krishnan A S* and Balamurali V

7	12:27 – 12:39	F003	Optimization of winglet designs for drag reduction	G Jagadesh, Dandu Yashaswini Yadav* , Mohammed Abdul Rahman and Yagya Dutta Dwivedi
8	12:39 – 12:51	F004	Development of a Governing Equation for Wells Turbines with Passive Flow Control Under Oscillating Flow	Krishnan K, Suganthan P, Madurya Kalichamy* , Jaya Shree V * ,
9	12:51- 13:03	F005	Computational Fluid Dynamics Analysis of Turbulent Flows in Industrial Piping Systems	Atharv Lohakare* , Vikas Jadhav, Om Kale, Avinash Somarkar , Tushar Bagade
10	13:03- 13:15	F008	Numerical Investigation of Turbulent Flow Transition in the Presence of Radiating Fluid	Shashikant Cholake* , Sangamesh Godi, Rahul Yadav

Chandrashekhar hall

M2 (Interdisciplinary)

Heat and fluid flow in advanced manufacturing techniques, Relevant topics

Session Chairs - **Dr Surej Rajan C, AJCET**

Prof. P Bangarubabu, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	11:15 – 11:27	M202	Thermal Stress Dynamics during a Pulse Laser Joining of Dissimilar Materials: Steel and Brass.	Asish Tripathy* , Himadri Chattopadhyay, Nilkanta Barman
2	11:27 – 11:39	M203	Environmental Policies for air quality regulation and assessing regional air pollution trends: A case study of Central India region.	Sakshi Sarathe* , Prashant Baredar, Gaurav Dwivedi
3	11:39 – 11:51	M511	Mechanical stress and Analysis in Rotor of Interior Permanent Magnet Synchronous Motor.	Ramesh Kumar* , Poonam Kumari, Ratheesh P, Atul Thakur, Akhilendra Singh, Ashwani Assam,
4	11:51 – 12:03	M512	AI-Powered Predictive Maintenance for Energy-Intensive Manufacturing Sectors.	Shreeyash Mhatre, Abhishek Shinde, Atharv Lohakare , Avinash Somatkar , Atharva Shinde*
5	12:03 – 12:15	M513	Human - Machine Collaboration Frameworks for Next-Generation Smart Factories	Vikas Jadhav* , Avinash Somatkar, Om Kale, Atharva Shinde, Tushar Bagade
6	12:15 – 12:27	M516	Design of multi-cellular wing structure for weight reduction.	Arugula Sai Krishna Goud* , mustafa raza aarif khan, neha kengerla, yagya dutta dwivedi
7	12:27 – 12:39	M518	Post-Harvest Drying Technologies in Transition: Benchmarking Efficiency, Cost-Effectiveness and Usability.	Rukaiya Beevi M* , Brathikan VM and Krisnan K
8	12:39 – 12:51	M520	Design and Fabrication of an Energy-Efficient Ultrasonic Radar Prototype for Missile Defense Simulation.	Pooja Kharade* , Sarthak Salunke* , Shreyash Raut* , Rutuja Mule* , Dinesh Kumar Bajaj.

Session 4 – Time - 14:30 – 16:00 (Seminar Hall Complex)**Bose hall****T7 (Thermal Sciences)****Thermal Management of EV components****Session Chairs - Dr. K.N.V. Adinarayana, AERB****Prof. P. V. Suresh, NITW**

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:30-14:42	T116	Numerical Investigations on Immersion Cooling Strategies for Battery Thermal Management	Matte Rashmi Matte* , Chinige Sampath Kumar
2	14:42-14:54	T119	Self-Tuned Oscillating Flow Control for Real-Time Thermal Management in Electric Vehicle Batteries	Nandini Chitteti* , K. Neha* , Yagya Dutta Dwivedi
3	14:54-15:06	T120	Next-Generation Thermal Management Strategies for High-Power Lithium-Ion Battery Systems- A Review	Mohsin IAR Sheikh, Sumantu S Salokhe, Samrudh R Nayak* , Disha S Shendure, Rugved K Gurav, Rohan U Patil
4	15:06-15:18	T121	A Numerical Analysis Of Liquid-Based Battery Thermal Management System For Electric Vehicles With Wavy Fin Designs Of Micro Channel Cold Plate	Pranushaa Aruri * , Karthik Balasubramanian and Vishal Warule
5	15:18-15:30	T122	Numerical investigation of heat transfer in a LiFePO4 Battery cooling system using novel hybrid nanofluids	Ranjeet D Ghavate* , K.V. Sharma, T V V L N Rao
6	15:30-15:42	T123	Influence of Electrolyte Thickness and Material Selection on Thermo-Mechanical Stress in All-Solid-State Batteries	Javid Mulani* , Ravi Kumar Peetala
7	15:42-15:54	T513	Analytical and Numerical Evaluation of Heat Sink Designs for Enhanced Thermal Management in Electronics	Gudepu Sridevi* , Farooq Shaik

Homi Bhaba hall**T8 (Thermal Sciences)****IC engines****Session Chairs - Dr. Arumuga Perumal D, NIT Karnataka****Prof. G. Amba Prasad Rao, NITW**

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:30-14:42	T710	Parametric study of hydrogen-diesel dual-fuel engine: The synergistic effects of hydrogen injection duration and pilot diesel injection timing	Anabayan Krishnamoorthy* , Nataraj Ganesan
2	14:42-14:54	T711	Combustion, Performance, and Emissions Analysis in an Enriched CNG Diesel Dual-Fuel Engine Operating Under Different Injection Pressures	Sai Leela Vanapalli * , Ravi Kumar Puli
3	14:54-15:06	T712	Experimental Investigation of Performance, Emissions, and Combustion Attributes of a Hydrogen-Enriched Ternary-Fuelled Diesel Engine at Variable Injection Pressures	Sai Leela Vanapalli* , Ravi Kumar Puli
4	15:06-15:18	T713	Influence of Injection Strategy on Dual-Fuel Diesel Engine Performance with Hydrogen and CNG under Varying Load Conditions	Balaji chouhan* , Ravi kumar Puli
5	15:18-15:30	T717	Transient analysis of engine cooling system	Subhadip Roy* , N Ganesh
6	15:30-15:42	T908	Computational Fluid Dynamics Study of Airflow, Heat Transfer, and CO ₂ , Buildup in Refrigerated Containers for Vaccine Logistics	Nenavath Sunkesh Naik* , Dr. Kiran Kumar.Kupireddi

Ramanujan hall**T9 (Thermal Sciences)****Relevant Topics****Session Chairs – Dr. S. Ramanathan, Kumaraguru College of Tech.****Prof. G. Naga Srinivasulu, NITW**

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
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1	14:30-14:42	T001	Performance, Lubrication and Wear Mechanism in Reciprocating Air Compressor.	Syed Azmaan Ali Madni* , P B Nagaraj, Lokesha K, Prajwal K H* , Rohit Kumar*
2	14:42-14:54	T003	CFD Analysis of Air Intake Distortion in Jet Engines.	Shaik Samrin* , Shaik Shoaib Akther, Amgoth Jyosthna, P. TEjesh, Yagya Dutta Dwivedi
3	14:54-15:06	T004	Thermal Analysis of Disc Brake Rotors Using Heat Pipe Cooling and Profile Enhancement Techniques.	Md Salahuddin* , Ravi Kumar Puli, Balaji Chouhan
4	15:06-15:18	T005	Computational analysis of heat transfer mitigation of a hypersonic ballistic vehicle by forward-facing cavity cylindrical and parabolic geometries.	Jahnavi J* , Sudarshan B
5	15:18-15:30	T006	Soft Computing-Assisted Validation of Coaxial Thermal Probe for Heat Flux Detection.	Manoja Kumar Mishra* , Biranchi Narayana Das, Santosh Kumar Hotta and Anil Kumar Rout
6	15:30-15:42	T007	Waste Heat Recovery Using Novel 3D Lattice Structure.	Ashok Kumar* , N. Gnanasekaran
7	15:42-15:54	T008	Analysis of Activation Energy for Thermal Degradation of Various Plastic Wastes Using Thermogravimetric Techniques.	K.P.A. Fahmi* , A. Shaija, and N. Baranwal
8	15:54-16:06	T012	Rotating Magnetoconvection of Inclined Planar Layer: Linear Stability Analysis	Anjali S. Chauhan* , Krishnendu Nayak, Hari Ponnammma Rani
9	16:06-16:18	T013	Linear Stability Analysis of Horizontally Rotating Magnetoconvection	Anjali Hulamani* , Krishnendu Nayak, Hari Ponnammma Rani

Raman hall

Online 1

Relevant Topics

Session Chairs - Dr Kuruva Krishna Murthy, VNRVJIET

Prof. Prasanth Anand KL, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:30-14:42	E005	Environmental Sustainability in MSMEs: A Review of Green Manufacturing Techniques in western India	Amisha Harish Malviya* , Minhaj Ahemad Rehman
2	14:42-14:54	E011	Green Synthesis And Characterization Of Zinc Oxide Nanoparticles Using Neem Leaf Extract	Rajeswari Velaga* , Basanth kumar palai, Chiranjeeva Rao Seela
3	14:54-15:06	E212	A Comprehensive Review of Cooling Systems for Lithium-Ion Batteries in Electric Vehicles	Kundlik B. Kshirsagar* , R.K. Kavade, Dilip S. Choudhari
4	15:06-15:18	E214	Performance Of Solar Dehydration System With Novel Heat Retention Element	Arun Kumar P M* , Balaji N, Sarvayeswaran L, Shree Ram G S
5	15:18-15:30	E301	Advancements and Challenges in Hydrogen Fuel Cell Production Technologies: A review	Sahadev Jadhav* , Sagar B. Manedeshmukh, Aditi A. Patil, Sonali S. Basu
6	15:30-15:42	E302	Optimization of Ascorbic Acid Concentration in Direct Liquid Fuel Cells for Enhanced Electrochemical Performance	Ashish P. Umamkar* , Rajkumar Chadge, Jayant Giri, Naveen Shriwastava

Khurana hall

Online 2

Relevant Topics

Session Chairs - Dr Sam Solomon, Coimbatore Institute of Technology

Prof. Ravi Kumar Peetala, NITW

Sl No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:30-14:42	T503	Convective Heat Transfer of Pure and Doped ZnO Nanofluids in a Heat Exchangers and Tribological Applications-A Review	T. Siva Krishna* , L.S.V Prasad, K. P. V. Krishna Varma
2	14:42-14:54	T521	Transient Heat Transfer Analysis of Conductive – Convective – Radiative Fins Attached to β – Type Stirling Engine	Ishita Rai* , Rajeev Kumar

3	14:54-15:06	T014	Refinery Thermic Fluid Heat Transfers Fluids Oil contamination failure and its mitigation.	Kaushik Sengupta* Dilip Kr Singh, Sudhanshu Singh, Arpan Kr Mondal, and Sneha Singh
4	15:06-15:18	T802	Numerical Investigation of Aspect Ratio Effects on the Thermo-Hydraulic Performance of Solid-Porous Compound Wavy Microchannel Heat Sinks	Ajoy Kumar Nandy* , Sanjay Kumar Gupta, Karthik Balasubramanian
5	15:18-15:30	E701	Development of a Dual-Axis Solar Tracking System Integrated with Maximum Power Point Tracking Charge Controller	Debashree Debadatta Behera* , Ramesh Chandra Mohanty, Shiv Sankar Das, Bijaya Bijeta Nayak, Dillip Kumar Mohanta
6	15:30-15:42	E905	Smart Wind Turbine with IoT-Based Yaw Control and Real-Time Speed Monitoring	Chiranjeeva Rao Seela* , Bade Venkata Suresh and T. S. Kishore

Chandrashekhar hall

Online 3

Relevant Topics

Session Chairs - Prof. R Raghavendra, NITW

Prof. Tamarai Selvan, NITW

SI No.	Time	Paper ID	Paper Title	Authors (* - presenting author)
1	14:30-14:42	F122	Parametric Analysis Of NACA 6412 Airfoil Using Machine Learning	B. Venkata Sai Raghu Vamsi* , T. Narasimha Suri, Malladi R. Ch. Sastry
2	14:42-14:54	F502	Investigation of acid corrosion in a tri-sector RAPH using computational fluid dynamics	Manas Ranjan Padhi* , Prakash Ghose, Amar Kumar Das, Taraprasad Mohapatra
3	14:54-15:06	M104	Analysis of Sloshing in Rectangular Tank using Machine Learning Algorithms	Jacob Varghese Karingottu* , Premchand V P
4	15:06-15:18	M105	Artificial Intelligence for Space Autonomy: Opportunities and Challenges in Future Missions	Sai Prashant Bhosale* , Sanjivani Sunil Sawant, Siddharth Pandi, Dinesh Kumar Bajaj
5	15:18-15:30	M204	Application of N2 gas Foam Inerting for Hydrocarbon storage tank	Dilip Kumar Singh* , Anar Mehdiyev, Kaushik Sengupta, Dr. Arpan Kr Mondal , Sudhanshu Singh
6	15:30-15:42	M508	Weight optimization of traditional Differential gearbox for EV use	Digvijay Gabahne* , Mohammad Saifullah Khan
7	15:42-15:54	M107	AI Enhanced Digital Twin for Real Time Diagnostics and Control of Li-ion and Redox Flow Battery Systems Unified Multi Physics Multi Domain Framework.	S Hemavathi*
8	15:54-16:06	M205	Controlled Revival and Diagnostic Requalification of Severely Imbalanced Lithium Iron Phosphate Battery Packs for Electric Vehicles.	S Hemavathi*
9	15:06-16:18	T308	Hybrid Immersion Cooling and AI Driven Thermal Energy Management for Li Ion Battery Packs in Renewable Storage	S Hemavathi*

Valedictory Session 16:20 – 17:00