

19th Global Congress on Manufacturing and Management (GCMM2025)

10 – 12 December 2025

Program Schedule

DATE	TIME	PROGRAM	VENUE
	DAY 1 (Forenoon)		
10-12-2025	10.00 AM - 11.00 AM	INAGURAL FUNCTION	Channa Reddy Auditorium Dr. MGR Block
	11.00 AM - 11.30 AM	Photo Session & High Tea	MB Portico
	KEY NOTE SESSION 1 11.30 AM - 12.10 PM	Title: Current Trends in Generative AI, Smart Manufacturing Technologies and their Impact on the Future of Manufacturing Engineering Education <i>Prof. Prasad Yarlagadda</i> University of Southern Queensland, Australia	Channa Reddy Auditorium Dr.MGR Block
	KEY NOTE SESSION 2 12.15 PM - 12.55 PM	Title: Sustainable Manufacturing, Ethics & Challenges for a True Circular Economy confirm <i>Prof. Andre Batako,</i> Liverpool John Moores University, UK	Channa Reddy Auditorium Dr.MGR Block
	1.00 PM to 1.50 PM	Lunch Break	CS Hall

	DAY 1 (Afternoon)		
	KEY NOTE SESSION 3 2.00 PM - 2.30 PM	Title: Steps towards Digital Twin for laser- based additive manufacturing <i>Prof. Danijela Rostohar</i> Coventry University, UK	Rajaji Hall, Dr. MGR Block
10-12-2025	KEY NOTE SESSION 4 02.35 PM - 03.05 PM	Title: Advances in Additive Manufacturing– Journey From 2d To 6d <i>Prof. Kaushik Kumar,</i> BITS Mesra. India	Rajaji Hall, Dr. MGR Block
	KEY NOTE SESSION 5 03.10 PM - 03.40 PM	Title: Manufacturing and Materials 4.0: Digital Modeling, ML &, Gen AI – Accelerating Hydrogen Transportation and Storage for Net Zero Resilient Infrastructure <i>Prof. Arivazhagan Anbalagan</i> Coventry University, UK	Rajaji Hall, Dr. MGR Block
	3.45 PM – 4.00 PM	Tea Break	Outside Rajaji Hall-Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 1 (PAPER PRESENTATIONS)	Rajaji Hall, Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 2 (PAPER PRESENTATIONS)	MB210, Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 3 (PAPER PRESENTATIONS)	CDMM304
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 4 (PAPER PRESENTATIONS)	CDMM303

DAY – 2			
	KEY NOTE SESSION 6 09.30 AM - 10.00 AM	Title: A Global Framework for Modern Mechatronic Systems Design <i>Prof. Jose Machado</i> University of Minho, Portugal	Rajaji Hall, Dr. MGR Block
11-12-2025	KEY NOTE SESSION 7 10.05 AM -10.35 AM	Title: Agentic Automation model to Manufacturing, Modeling and Management with Fusion Adaptive Multi-reasoning System <i>Prof. Suthep Butdee</i> RMUTK, Thailand	Rajaji Hall-Dr. MGR Block
	KEY NOTE SESSION 8 10.40 AM -11.10 AM	Title: Smart and Resilient Manufacturing: Integrated Modelling and Risk Assessment through Intelligent and Simulation-Based Methods <i>Prof. Anna Burduk</i> WUST, Poland	Rajaji Hall-Dr. MGR Block
	11.15 AM to 11.30 AM	Tea Break	Outside Rajaji Hall-Dr. MGR Block
	11.30 AM-01.00 PM	TECHNICAL SESSION – 5 (PAPER PRESENTATIONS)	Rajaji Hall, Dr. MGR Block
	11.30 AM-01.00 PM	TECHNICAL SESSION – 6 (PAPER PRESENTATIONS)	CDMM304
	11.30 AM-01.00 PM	TECHNICAL SESSION – 7 (PAPER PRESENTATIONS)	CDMM303
	1.00 PM to 1. 50 PM	Lunch Break	CS Hall
	KEY NOTE SESSION 9 2.00 PM - 2.30 PM	Title: Integrating Machine Learning with Six Sigma in Industrial Processes: Improving Project Outcomes <i>Prof. Katarzyna Antosz</i> Rzeszów University of Technology, Rzeszów, Poland	Rajaji Hall-Dr. MGR Block

	KEY NOTE SESSION 10 2.35 PM - 3.05 PM	Title: Emerging Pathways in Advanced Materials & Manufacturing for Sustainable and Safe Hydrogen Storage & Distribution <i>Prof. P. Ashwath</i> University of Cumbria, UK	Rajaji Hall-Dr. MGR Block
	KEY NOTE SESSION 11 3.10 PM - 3.40 PM	Title: Understanding Engineering Durability: Insights into Material and Structural Failure <i>Prof. Shahrum Abdullah</i> Universiti Kebangsaan Malaysia	Rajaji Hall-Dr. MGR Block
	3.45 PM – 4.00 PM	Tea Break	Outside Rajaji Hall-Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 8 (PAPER PRESENTATIONS)	Rajaji Hall, Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 9 (PAPER PRESENTATIONS)	MB210, Dr. MGR Block
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 10 (PAPER PRESENTATIONS)	CDMM304
	4.00 PM – 5.30 PM	TECHNICAL SESSION – 11 (PAPER PRESENTATIONS)	CDMM303

12-12-2025		DAY - 3	
	KEY NOTE SESSION 12 09.30 AM - 10.00 AM	Title: Industry 5.0: Where Innovation Meets Collaboration <i>Prof. Justyna TROJANOWSKA</i> Poznan University of Technology, Poland	Rajaji Hall-Dr. MGR Block
	KEY NOTE SESSION 13 10.05 AM -10.35 AM	Title: From Fibers to Function: Electrospun Materials for Clean Energy and Environmental Applications <i>Prof. Lea Cristina Macaraig</i> Ateneo de Manila University, Philippines	Rajaji Hall-Dr. MGR Block

	KEY NOTE SESSION 14 10.40 AM -11.10 AM	Title: Thermal Performance Optimization of Mosquito Hotend through Heat Sink Geometry Modification in FDM 3D Printing <i>Prof. Bambang Arip Dwiyanoro</i> Institut Teknologi Sepuluh, Indonesia	Rajaji Hall-Dr. MGR Block
	11.15 AM to 11.30 AM	Tea Break	Outside Rajaji Hall-Dr. MGR Block
	11.30 AM - 1.00 PM	TECHNICAL SESSION – 12 (PAPER PRESENTATIONS)	Rajaji Hall, Dr. MGR Block
	11.30 AM - 1.00 PM	TECHNICAL SESSION – 13 (PAPER PRESENTATIONS)	MB210, Dr. MGR Block
	11.30 AM - 1.00 PM	TECHNICAL SESSION – 14 (PAPER PRESENTATIONS)	CDMM304
	11.30 AM - 1.00 PM	TECHNICAL SESSION – 15 (PAPER PRESENTATIONS)	CDMM303
	1.00 PM to 1. 50 PM	Lunch Break	CS Hall
	2.00 PM - 3.30 PM	TECHNICAL SESSION – 16 (PAPER PRESENTATIONS)	Rajaji Hall, Dr. MGR Block
	2.00 PM - 3.30 PM	TECHNICAL SESSION – 17 (PAPER PRESENTATIONS)	CDMM303
	04.00 PM – 4.45 PM	Valedictory	Ambedkar Auditorium, Technology Tower

19th Global Congress on Manufacturing and Management (GCMM2025)

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Technical Session Schedule

KEYNOTE SESSION 1

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair: Prof. R Vasudevan

Time: 11.30 AM - 12.10 PM

Title: Current Trends in Generative AI, Smart Manufacturing Technologies and their Impact on the Future of Manufacturing Engineering Education

Prof. Prasad Yarlagadda

University of Southern Queensland, Australia

KEYNOTE SESSION 2

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair: Prof. R Vasudevan

Time: 12.15 PM - 12.55 PM

Title: Sustainable Manufacturing, Ethics & Challenges for a True Circular Economy confirm

Prof. Andre Batako,

Liverpool John Moores University, UK

KEYNOTE SESSION 3

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair: Dr. T. C. Manjunath

Time: 2.00 PM - 2.30 PM

Title: Steps towards Digital Twin for laser- based additive manufacturing

Prof. Danijela Rostohar

Coventry University, UK

KEYNOTE SESSION 4

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair: Dr. T. C. Manjunath

Time: 02.35 PM - 03.05 PM

Title: Advances in Additive Manufacturing – Journey From 2D to 6D

Prof. Kaushik Kumar,
BITS Mesra. India.

KEYNOTE SESSION 5

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair: Dr. T. C. Manjunath

Time: 03.10 PM - 03.40 PM

Title: Manufacturing and Materials 4.0: Digital Modeling, ML &, Gen AI – Accelerating Hydrogen Transportation and Storage for Net Zero Resilient Infrastructure

Prof. Arivazhagan Anbalagan
Coventry University, UK

TECHNICAL SESSION – 1

(PAPER PRESENTATIONS)

Venue: Rajaji Hall, Dr. MGR Block

Date: 10-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	132	Autonomous Real-Time Sorting of Non-Ferrous Scrap Using Hyperspectral Imaging and Pneumatic Ejection	Sanjay T, Shreyash Ghule, Mudra Bansod, Ramakrishnan R, Sathish G P, R Vasudevan	16:00
2	45	Development of a Low-Cost, Power-Efficient Smart Farming Framework using LoRa and IoT	N Atthikumaran, K K Suvain, K Mohanraj, K Babu, R Vinoth, D Prabakaran, R Girimurugan	16:10
3	49	Development and Evaluation of a Predictive Maintenance System Integrating AI, IoT, and Big Data in Industrial Applications	Beulah David, M.Sukanya, M.Masilamani, R.Madhuramya, Sreevidhya S, Priyadharshini T.R	16:20
4	50	Optimization of Electric Vehicle Charging Using a Hybrid Energy Storage System and Photovoltaic Integration Based on the Ant Colony Algorithm	E.Shiva Prasad, Naresh Kumar K, G.Sathya, A. Anto Spiritus Kingsly, R. Vijaya Kumar Reddy, Sekar K	16:30
5	53	Ultrasonic Non-Destructive Evaluation of Polymer Matrix Composites Using Deep Learning for Defect Detection	Indradeep Kumar, Pandyaraj V, Vigneswaran CM, S.Nooray Sashmi, P. Ragupathi	16:40
6	55	Leveraging Blockchain and IoT for Advanced Supply Chain Management in the Avocado Sector	Komala C R, Balakrishnan S, Ajay Singh Yadav, S.Nooray Sashmi, Sivakumar Karthikeyan	16:50
7	59	Evolution of Blockchain Research in Health Data Management: A Scientometric Approach Using OpenAlex Data	Munisha Devi, P.Thamarai, S.D. Nandakumar, S.Rama, A.Suresh, P.Deepa	17:00
8	60	Evaluation of Kaolin Alternatives for Ceramic Tile Production with Substitution Using Locally Available Clays	N. Venkateswaran, Ushasree Jagaragallu, Deepak G.B, Jayalakshmi E, G. V. Krishna Pradeep	17:10
9	131	RGB-D Vision-Based Robotic System for Real-Time Shape and Color Detection in Non-Ferrous Scrap Sorting	Sanjay T, D Dhanesh, Siddhi Salaskar, Ansh Malaye, Sathish G P, Ramakrishnan R, Vasudevan R	17:20

TECHNICAL SESSION – 2

(PAPER PRESENTATIONS)

Venue: MB210, Dr. MGR Block

Date: 10-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	62	Mechanical Performance Evaluation of Automotive Components Made from Jute Fiber and Hybrid Sustainable Materials	Raffi Mohammed, P. Suresh Kumar, Vijayakumar B, Nellore Manoj Kumar, P. Malini Anand Raj	16:00
2	67	Development of PLA-Hemp Hybrid Threads for Sustainable Composite Manufacturing	S.Thirugnanam, S.Vinodh, Tarun Kumar Kottedda, P. Malini Anand Raj, A. Kistan, Bhavya Lingampalli	16:10
3	73	Evaluation of Mechanical Behavior in Aluminum Composites Reinforced with Carbon Nanotubes and Metallic Powders	T.Vinod Kumar, A. Parvathi Priya, Vijayakumar B, P. Ravichandran, Tarun Kumar Kottedda, Manas Ranjan Sahoo	16:20
4	91	Machine Learning–Based Risk Classification of Space Debris Conjunction Events	Kalyanaraman, Saurav Ansuman, Adarsh Bhardwaj, Advait Bhole	16:30
5	96	Development and Analysis of Deep Eutectic Phase Change Materials for Ultra-Low Temperature Thermal Energy Storage in Pharmaceutical Transport	R.Ashok Gandhi	16:40
6	97	Evaluation of Coconut Oil-Derived Biodiesel Esters as Diesel Additives for Engine Performance and Fuel Efficiency	Radhey Shyam Meena, Rincy Susan Raju, A. Vijayalakshmi	16:50
7	98	Performance Enhancement of Hybrid Electric Vehicle Battery Power Systems Using an H_{∞} Robust Control Strategy	M. R. Kamesh, K. Lakshmi Khandan, Sivakumar Balu, P.Sebastian Vindro Jude, R. Sethuraman, Manivelmuralidaran Velumani	17:00
8	107	Development of FCC-Based Geopolymer-Inspired Concrete with Polyethylene Glycol for Improved Durability and Mechanical Performance	Ushasree Jagaragallu, P Shashank, Manu Vijay, Vishal Pandurang Kumbhar, S.Dhivya	17:10
9	111	Performance Evaluation of Energy Storage Solutions for High-Renewable Penetration in Distribution Grids	A. Rajendra Prasad	17:20

TECHNICAL SESSION – 3

(PAPER PRESENTATIONS)

Venue: CDMM304

Date: 10-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	123	Development and Mechanical characterisation of multi-walled carbon nanotubes and hydroxyapatite reinforced ADC12 aluminium alloy hybrid metal matrix composite	Senthil Kumaran Selvaraj, Atharyan Giridharan, Tharaniraam Chandra Sakthimurugan	16:00
2	125	Development of Bio-Compatible Inks for Breath Sensors and Analyzers	Arun Subramanian, Senthil Kumar S, Raghuraman D R S, Padmanabhan K	16:10
3	128	Optimization of Electric Vehicle Charging in Parking Lots Using Monte Carlo Simulation with Genetic and Ant Colony Algorithms	Vetrikani. R	16:20
4	134	Smart Grids and Electric Vehicle Integration Simulation of Recharging Impacts on Medium Voltage Distribution Systems	Dr Palanikumar Subramanian	16:30
5	1	The Current State of Digital Manufacturing in Central European SMEs: SMERF Diagnosis Results in the Context of Maturity Models and Recent Studies	Mariusz Cholewa, Mateusz Molasy, Maria Rosienkiewicz, Joanna Helman	16:40
6	9	Reducing Carbon Emissions in Shoe Manufacturing through Digital Twin-Enabled Project Management †	Mohan Reddy Devireddy, Arivazhagan Anbalagan, Shone George, Marcos Kauffman, Tengfei Long	16:50
7	62	Mechanical Performance Evaluation of Automotive Components Made from Jute Fiber and Hybrid Sustainable Materials	Raffi Mohammed, P. Suresh Kumar, Vijayakumar B, Nellore Manoj Kumar	17:00
8	43	Comprehensive Design, Development, and Implementation of a 4-Axis Selective Compliance Assembly Robot Arm (SCARA) for Automated High-Precision Pick-and-Place Operations of Integrated Circuit Components onto Printed Circuit Boards in Advanced Electronic Manufacturing	Dr T C Manjunath, Dr R Balakrishna	17:10
9	115	Analysis of Swarm Robot Behavior Using Reinforcement Learning	Joshuva Arockia Dhanraj, T. V. V. Satyanarayana	17:20

TECHNICAL SESSION – 4

(PAPER PRESENTATIONS)

Venue: CDMM303

Date: 10-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	18	From PC to AI Through Digital Twins - A glance into the Race for Technological Ideology	Sergey Sychev, Andre Batako, Katarzyna Antosz, Thanh Trung Nguyen, Anthony Xavior, Suthep Butdee	16:00
2	51	Implementation of a Pilot Monitoring System for Adhesive Tape Production within Industry 4.0	Francis Luther King.M, N Manikandan, B. Rajabharathi, T Vijay Muni, V R Srinivasan	16:10
3	56	Development of a LoRaWAN-Based Low-Power Meteorological Station for Agro-Environmental Monitoring	Mohammad Arif, J.Samson Isaac, S.Nooray Sashmi, A.Vijayaraj, P.Karthikeyan, Prabu Selvam	16:20
4	63	Design and Implementation of a Digital Twin-Based Virtual Commissioning System for Industrial Processes	Raffi Mohammed, Babu. Kandavalli, Sumanth Ratna. Kandavalli, Shreyas B V, Joshuva Arockia Dhanraj, Prabu Selvam	16:30
5	110	Evaluating the Impact of IoT on Performance Indicators in Auto Parts Assembly under Industry 4.0	A Chandrashekhar, V Jai Ganesh, Sivakumar Balu, M. Ravi Kumar, Bhavesh Pithadiya, S.Dhivya	16:40
6	133	Real-Time Communication Between PLC and Mobile Devices for Industrial Process Monitoring in Industry 4.0	V P Kalaiyarasi	16:50
7	2	Assessing Manufacturing SMEs' Readiness for Circular and Sustainable Production: Insights from the SMERF Project	Maria Rosienkiewicz, Joanna Helman, Mateusz Molasy, Mariusz Cholewa	17:00
8	85	An investigation on the molten salt high-temperature corrosion of GTA and SMA welded super heater pipes in 70 MW CFBC boilers	S. Senthur Prabu, A. Aravind, R V Dhanushwaran, S K Praveen, Ashit Khichi	17:10
9	11	An Investigation on the Influence of Single and Multiple-channel Electrodes on Machining Performance in Fast EDM Drilling	Kamonpong Jamkamon, Pichai Janmanee, Teerachart Soratana, Charn Thanadngarn, Sirapob Toyting, Suppawat Chuvaree	17:20

KEYNOTE SESSION 6

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Andre Batako

Time: 09.30 AM - 10.00 AM

Title: A Global Framework for Modern Mechatronic Systems Design

Prof. Jose Machado
University of Minho, Portugal

KEYNOTE SESSION 7

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Andre Batako

Time: 10.05 AM -10.35 AM

Title: Agentic Automation model to Manufacturing, Modeling and Management with Fusion Adaptive Multi-Reasoning System

Prof. Suthep Butdee
RMUTK, Thailand

KEYNOTE SESSION 8

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Andre Batako

Time: 10.40 AM -11.10 AM

Title: Smart and Resilient Manufacturing: Integrated Modelling and Risk Assessment through Intelligent and Simulation-Based Methods

Prof. Anna Burduk
WUST, Poland

TECHNICAL SESSION – 5

(PAPER PRESENTATIONS)

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair:

Time: 11.30 AM-01.00 PM

Sl. No	ID	Title	Authors	Start
1	17	Data-Driven Behavioral Modeling for Performance Monitoring in Continuous Production Lines: A Use-Case Approach	Luis Freitas, Filipe Pereira, Nuno Leal, Anna Burduk, Suthep Butdee, M. Anthony Xavier, José Machado	11:30
2	4	Forecasting conveyor belt failure density using inspection data from a surface limestone mine	Parthkumar Parmar, Leszek Jurdziak, Aleksandra Rzeszowska, Anthony Xavier M, Phatchani Srikhumsuk, Anna Burduk	11:40
3	6	Analysis of Expansion Behavior of Ready-To-Eat Food Plastic Packaging under Steam Pressure in Domestic Microwave Oven	Waraporn Klinbun, Phadungsak Rattanadecho, Poom Jatunitanon, Jirapol Klinbun	11:50
4	118	Development of a Digital Twin for Robotic Inspection Using Computer Vision and Machine Learning	P.V.Pramila, K R Senthil Kumar, K.Venkatesh Babu, A. Kistan, Bhavya Lingampalli	12:00
5	12	Flow Field Simulation Analysis of Hydrogen Embrittlement Failure on Welded Zones in 304L/316L SS	Sai Charan Madugula, Arivazhagan Anbalagan, Oliver Curnick, John E Graves, Danijela Rohostar, Margret Anuncia S, Anthony Miachel Xavier, Rajkumar Soundarapandian, Jeyapandirarajan Paulchamy, Mythili Thirugnanam	12:10
6	129	Application of NEAT Neuroevolutionary Neural Networks in Decision-Making for Very Small Size Soccer Robots	Dr. R. Ganesan	12:20
7	14	A Study on 3D Printed CFRP-Metal Sandwich Structures for Hydrogen Transportation and Storage in Aerospace and Automotive Systems	Mebin Varghese, Arivazhagan Anbalagan, Shone George, Marcos Kauffman	12:30
8	119	Task Sequencing and Scheduling of Autonomous Mobile Robots in Flexible Manufacturing Systems Using Metaheuristic Optimization	P.V.Pramila, S.Nagarani, S.Noaray Sashmi, A.Vijaya Mahendra Varman, M.P. Natarajan	12:40
9	103	Development of an Autonomous Vehicle Prototype with Position Estimation Using Extended Kalman Filter for Indoor Navigation	Sivakumar Balu, Supriya, Harikeerthan M K, Anandkumar s Malipatil, Sathiyamoorthy Margabandu, S. Dhiva	12:50

TECHNICAL SESSION – 6

(PAPER PRESENTATIONS)

Venue: CDMM304

Date: 11-12-2025

Session Chair:

Time: 11.30 AM-01.00 PM

Sl. No	ID	Title	Authors	Start
1	19	Solving Minimum Covering Circle/ Dome Problem Using Four or More Boundary Points of the Given Cluster	Baskar A, Anthony Xavier M, Anna Buduk, Suthep Butdee	11:30
2	24	Electrical Discharge Coating Variables Multi-Criteria Optimization Utilizing TOPSIS Method on the Wear Behaviour of WS ₂ -Cu Coating on AA7075 Alloy [†]	N. Senthilkumar, G. Perumal, K. Shanmuga Elango, S. Thirumalvalavan, S. Selvarasu	11:40
3	25	OPTIMIZATION OF SURFACE ROUGHNESS IN END MILLING OF CF/SIC COMPOSITES USING POLYCRYSTALLINE DIAMOND TOOLS	Krishnaraj V, Deepak Saran M, Jeevanya S, Kavin K, Shanmugam S	11:50
4	74	Analysis of IoT System Efficiency Using MQTT Protocol in Industrial Robotics with Robotic Arms, Sensors, and Actuators	Vinodpuri Rampuri Gosavi, Priyanka Abhang, S Cloudin, Sivakumar Balu, G.Yedukondalu,	12:00
5	27	Design and Analysis of a Square-Shaped Nozzle for FDM 3D Printing	Anil Raj, Thejaraju R, Ivan Sunit Rout, S M Darshan, Abhinandhan N	12:10
6	28	Laser-Based Surface Modification and Parameter Optimization of WE43 Magnesium Alloy for Enhanced Performance of Bio-implant	Pratheesh Kumar M R, Saravanakumar K, Pradeep Kumar J, Rajamani R	12:20
7	29	Enhancing Microchannel Precision in Al/TiB ₂ Nanocomposites through Nd:YAG Laser Micromachining	Pratheesh Kumar M R, Saravanakumar K, Pradeep Kumar J, Arun Prakash R	12:30
8	30	SUSTAINABLE ANALYSIS OF TENSILE AND IZOD IMPACT STRENGTH VARIATION IN 3D-PRINTED ABS COMPONENTS UNDER DIVERSE PROCESS PARAMETERS	Aniket B. Kolekar, Amol S. Mali	12:40
9	113	Autonomous Robot Navigation Using Deep Reinforcement Learning for Obstacle Avoidance and Path Optimization	E. Afreen Banu, Raziya Sultana Sharief, S.Nooray Sashmi, A.Vijaya Mahendra Varman	12:50

TECHNICAL SESSION – 7

(PAPER PRESENTATIONS)

Venue: CDMM303

Date: 11-12-2025

Session Chair:

Time: 11.30 AM-01.00 PM

Sl. No	ID	Title	Authors	Start
1	31	On the study of high-velocity impact behaviour of metals using SHPB	V B S Rajendra Prasad, Md.Ismail	11:30
2	32	Investigations of frequency of vibration with variation in core thickness of a rubber cored metal sandwich beams	VBS Rajendra Prasad, Md.Ismail	11:40
3	33	Study of Modified and Improved Carbon Phenolic and Carbon Elastomeric Ablative Composites	Deepika Shaw, Sanjiv Kumar Tiwari, Kaushik Kumar, Sudipta Kishore Pradhan	11:50
4	35	Biomanufacturing of cadmium telluride nanoparticles using the filamentous fungus Neurospora crassa in an inverse fluidized bed bioreactor for potential optoelectronic and biofunctional applications	Ajay Kumar Chhantyal, Yogendra Rathore, Megha Rasaily, Atharva Kulkarni, Ranjan Tamuli, Kannan Pakshirajan	12:00
5	36	In-Situ TiB ₂ Reinforced Al 6061 Alloy for Enhanced Mechanical Performance	Anshu Anand, Sanjiv Kumar Tiwari, Sandeep Tiwari, Anup Rajak, Ritesh Kumar Singh, Kaushik Kumar	12:10
6	37	Blockchain-based Smart Contract in Three-Echelon Perishable Food Supply Chain	Malleswari Karanam, Krishnanand Lanka	12:20
7	38	Utilizing Iron Ore Tailings in Cementitious Composites: Potential, Challenges, and Future Prospects	M. Preetham Siddhartha Reddy, N. Ravisankar, J. Saravanan, R. Sheela	12:30
8	39	On the Origin of Quantum Nature in Atoms: A Missing Story	Ghanshyam Jadhav	12:40
9	40	Innovative Green Roof Materials for India: Synergizing Nature-Based Solutions and Sustainable Manufacturing for Climate-Responsive Cities	Vishnu Thyagaraj, Mithun Hanumesh, Mohan Muniyappa, A. Saravanakumar	12:50

KEYNOTE SESSION 9

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Kaushik Kumar

Time: 2.00 PM - 2.30 PM

Title: Integrating Machine Learning with Six Sigma in Industrial Processes: Improving Project Outcomes

Prof. Katarzyna Antosz
Rzeszów University of Technology, Rzeszów, Poland

KEYNOTE SESSION 10

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Kaushik Kumar

Time: 2.35 PM - 3.05 PM

Title: Emerging Pathways in Advanced Materials & Manufacturing for Sustainable and Safe Hydrogen Storage & Distribution

Prof. P. Ashwath
University of Cumbria, UK

KEYNOTE SESSION 11

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair: Dr. Kaushik Kumar

Time: 3.10 PM - 3.40 PM

Title: Understanding Engineering Durability: Insights into Material and Structural Failure

Prof. Shahrum Abdullah
Universiti Kebangsaan Malaysia

TECHNICAL SESSION – 8

(PAPER PRESENTATIONS)

Venue: Rajaji Hall, Dr. MGR Block

Date: 11-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	41	Improving the Surface Quality of Additive Manufactured Stainless Steel 316L by Wire Electrical Discharge Polishing (WEDP)	Naveen Anthuvan R, Pratheesh Kumar S, Krishnaraj V, Devisri J, Meha K, Monish V	16:00
2	42	Fabrication of Micro Mold Insert using Micro Milling and Micro EDM Process	Naveen Anthuvan R, Krishnaraj V, Josko Valentincic, Mohana Krishnan M, Kaliyappan S, Balaji C	16:10
3	44	Analytical Modeling of Wave Characteristics in Multiferroic Magneto-Electro-Elastic Smart Structures [†]	Velur Loganathan Raja, Ganesh Babu L, Prabhu A E, Arul N, Aswin A, Jayanthi R, Girimurugan R	16:20
4	46	Laser-Assisted Hybrid Milling Of Cf/SiC Composites Using PCD Tools	Krishnaraj V, Deepak Saran M, Jeevanya S, Kavın K, Shanmugam S	16:30
5	47	Cutting Performance and Damage Metrics in Abrasive Waterjet Machining of Delrin–Ramie Fiber Composites [†]	N. Senthilkumar, S. Thirumalvalavan, S. Selvarasu, G. Perumal, A. Eakambaram	16:40
6	48	Enhancing Vehicle Information Integrity Through a Blockchain-Driven Management Platform	Bachina Harish Babu, M Kalidasan, S. Mahalingam, A.V.S Ram Prasad, Sekar K, Joshuva Arockia Dhanraj	16:50
7	52	Optimization of Artificial Neural Network Parameters for MAG Welding Process Prediction Using Data Augmentation Techniques	G Ramakrishna, Sandip D Satav, S.Raja, P. Ravichandran, G.Senthilkumar, Joshuva Arockia Dhanraj	17:00
8	54	Analyzing the Impact of Big Data and Data-Driven Culture on Organizational Decision-Making Efficiency	Komal Kumar Napa, A.Pankajam, R. Vijaya Kumar Reddy, D.Joel Jebadurai, Rajeshwari R R, K.G. Chandi Priya	17:10
9	84	An experimental study of air oxidized hot corrosion on bimetallic welded joints employed at 70 MW CFBC boiler super-heater pipes	Leyander Reginald Pillai, Elroy Wilson, S. Sakthivel, S. Sujai, S. Karthikeyan,	

TECHNICAL SESSION – 9

(PAPER PRESENTATIONS)

Venue: MB210, Dr. MGR Block

Date: 11-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	61	Human Talent Management and Lean Manufacturing in Logistics Leadership	Nagarajan G, Rashmi Gupta, S.Dhivya, Shreyas B V, Joshuva Arockia Dhanraj, Sivakumar Karthikeyan	16:00
2	64	Enhancing the Mechanical Performance of Metakaolin-Based Geopolymer Composites Reinforced with Long Sisal Fibers	Raffi Mohammed, V Jai ganesh, P.Jermia Arockia Pravin, P. Ragupathi, Sivakumar Karthikeyan, Kurmana Premakumar	16:10
3	65	Taguchi-Based Optimization of Cutting Parameters for Surface Finish and Feed Force in EN24 Steel Drilling	S Ravindran, M.Balaji, D.Brahmeswara Rao, B. Rajabharathi, A. Kistan, Nellore Manoj Kumar	16:20
4	66	IoT-Enabled Distributed Control Architecture for Flexible and Reconfigurable Manufacturing Systems	S. Rukmani Devi, Kasee Palaniappan, S.Sadham Hussain, Rajesh R, V G Pratheep, Sandeep Gupta	16:30
5	68	Mechanical Strength and Microstructural Analysis of SiC-Reinforced Alumina Composites	S.Thirugnanam, G Mohana Priya, T Kumarasan, Vipin Vijayan, A.Anbarasu, Singuru Madhavarao	16:40
6	69	Incorporation of Rice Husk Ash in Ceramic Tile Production for Enhanced Sustainability and Technological Performance	S.Thirugnanam, Pramod Kaki, Deepak G.B, S.Thirumavalavan, A.Anbarasu, Poonam Khan	16:50
7	70	A Novel Synthetic Route for Prussian Blue Composites Containing Graphene Oxide and Carbon Nanotubes	Selvam Annamalai, Francis Luther King.M, Sandip D Satav, A. Parvathi Priya Lingala Syam Sundar, Piyush Kumar Thakur	17:00
8	71	Optimization and Characterization of Aluminum Alloy Joints Produced by Friction Stir Welding	Sravanthi K, Dr.U.Mohammed Iqbal, I John Solomon, B. Rajabharathi, Bhavya Lingampalli, Nellore Manoj Kumar	17:10
9	72	Effect of Surface Treatments on the Mechanical Performance of Jute Fiber Reinforced Epoxy Composites	T. Venkatamuni, Yarlagadda jyothei, Deepak G.B, Vipin Vijayan, A.Anbarasu, G. Gnanakumar	17:20

TECHNICAL SESSION – 10

(PAPER PRESENTATIONS)

Venue: CDMM304

Date: 11-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	75	Graphene Oxide Reinforced Epoxy Nanocomposites with Enhanced Interphase Interactions and Aging-Induced Crosslinking	Yarlagadda Jyothi, Pandyaraj V, Sanjay R. Kumavat, S.Parameswari, Lingala Syam Sundar, Nellore Manoj Kumar	16:00
2	76	Applications of Sustainable Bio-Degradable Agro Waste (Rice Husk Ash) in Improving the Flow and Mechanical properties of Ultra-High Strength Mortar	Gayathri devi M, Karthikeyan B, Chandrasekar S, Vedhaa T A, Rathnapriya C	16:10
3	77	Influence of density and porosity on the mechanical properties of ZE41 hybrid metal matrix composites	Anand. N, Senthil Kumaran Selvaraj	16:20
4	78	A Machine Learning-Driven Framework for Sector-Specific Construction Cost Overrun Prediction and Mitigation	Dr.G.I.Gunarani, Abi Shriya Venkateswaran, Dharshana Thennaleeswaran, Shreevatsh Rajkumar, Dr.V.Rathinakumar	16:30
5	79	Automation of Label Inspection Using Neural Networks for Enhanced Quality Control and Cost Efficiency	S. Rukmani Devi, Kasee Palaniappan, M. Ravi Kumar, M.Mary Victoria Florence, A.Ramamurthy, R.Pandian	16:40
6	80	MECHANICAL CHARACTERIZATION OF EPOXY - ALUMINA COMPOSITES: A STUDY ON TENSILE, FLEXURAL, AND SHEAR PROPERTIES	Bhushan Chindarkar and Edwin Sudhagar P	16:50
7	81	Machine Learning Surrogated Coal Blend Optimisation for Inventory-Aware Coking	Abhay Nimbalkar, Nishchal Kashyap, Dr Dega Nagaraju	17:00
8	82	Experimental Investigation of Thermal Effects on the Natural Frequencies of GFRP Single-Lap composite Joints Bonded with Al ₂ O ₃ Nano-Reinforced Adhesive	Yaswanth Kumar G, Edwin Sudhagar P	17:10
9	83	Vibration Analysis of Al ₂ O ₃ Reinforced Glass Fibre Single Lap Composite Joints	Ganesh Anil Borse, Edwin Sudhagar P	17:20

TECHNICAL SESSION – 11

(PAPER PRESENTATIONS)

Venue: CDMM303

Date: 11-12-2025

Session Chair:

Time: 4.00 PM – 5.30 PM

Sl. No	ID	Title	Authors	Start
1	7	THE INSPIRATION KNOWLEDGE BASE: A DIGITAL KNOWLEDGE PLATFORM FOR SUPPORTING SME TRANSFORMATION IN INDUSTRY 4.0 AND SUSTAINABLE MANUFACTURING	Mateusz Molasy, Mariusz Cholewa, Joanna Helman, Maria Rosienkiewicz	16:00
2	10	Digital Twin-Driven Evaluation of 3D Printed H13 Tool Steel End Mills for Sustainable Machining Applications †	Arivazhagan Anbalagan, Kaarthikeyan Ramesh, Jeyapandiarajan Paulchamy, M. Anthony Xavier, Shone George, Marcos Kauffman	16:10
3	86	Intelligent Visual Inspection System for Ceramic Plate Defect Identification Using Machine Learning	Indradeep Kumar, S. Natheldha Mary Navina, Nalla Bhanu Teja, A.Jagadesan, S.Noaray Sashmi, Joshuva Arockia Dhanraj	16:20
4	87	Design and Structural Analysis of a Scaled H-Type Vertical Axis Wind Turbine for Wind Tunnel Testing	Indradeep Kumar, M.Tamilselvam, P Booma Devi, A.Jagadesan, Siddharthan P, Joshuva Arockia Dhanraj	16:30
5	88	Exploratory Data Analysis and Machine Learning Models for Predictive Maintenance in Industrial Equipment	Munisha Devi, Helaria Maria, Harsha K G, Bhavya Lingampalli, S.Dhivya	16:40
6	89	Adaptive Multi-User Preference Aggregation Using MORL and Neural User Models for Intelligent Appliance Control	Kalyanaraman P, Sadiya Khan, Yashas BN, Pramit Ghosh, Shivam K	16:50
7	90	An Efficient Hybrid Framework for Weld Defect Detection Using GAN, CNN and XGBoost	Kalyanaraman, Ashish Patil, Yash Gulavani, Ritik Malik	17:00
8	92	CFD Analysis of Small-Scale Darrieus-H Vertical Axis Wind Turbines Considering Solidity and Tip Speed Ratio Effects on Aerodynamic Performance	A.Ramanjaneya Reddy, Satish Kumar Dhurandha, P Booma Devi, A.Jagadesan, Joshuva Arockia Dhanraj	17:10
9	93	Design and Implementation of a Photovoltaic System with Maximum Power Point Tracking and Battery Charge Control	Deepak Shahakar, C Karthikeyan, A.Jagadesan, A.Ramamurthy, Mudanai Panneerselvam Natarajan	17:20

KEYNOTE SESSION 12

Venue: Rajaji Hall, Dr. MGR Block

Date: 12-12-2025

Session Chair: Dr. Shahrum Abdullah

Time: 09.30 AM - 10.00 AM

Title: Industry 5.0: Where Innovation Meets Collaboration

Prof. Justyna TROJANOWSKA
Poznan University of Technology, Poland

KEYNOTE SESSION 13

Venue: Rajaji Hall, Dr. MGR Block

Date: 12-12-2025

Session Chair: Dr. Shahrum Abdullah

Time: 10.05 AM -10.35 AM

Title: From Fibers to Function: Electro spun Materials for Clean Energy and Environmental Applications

Prof. Lea Cristina Macaraig
Ateneo de Manila University, Philippines

KEYNOTE SESSION 14

Venue: Rajaji Hall, Dr. MGR Block

Date: 12-12-2025

Session Chair: Dr. Shahrum Abdullah

Time: 10.40 AM -11.10 AM

Title: Thermal Performance Optimization of Mosquito Hot end through Heat Sink Geometry Modification in FDM 3D Printing

Prof. Bambang Arip Dwiyanoro
Institut Teknologi Sepuluh, Indonesia

TECHNICAL SESSION – 12

(PAPER PRESENTATIONS)

Venue: Rajaji Hall, Dr. MGR Block

Date: 12-12-2025

Session Chair:

Time: 11.30 AM - 1.00 PM

Sl. No	ID	Title	Authors	Start
1	94	Effect of Diesel-Biodiesel Injection Advance on Combustion and Emissions in a Dual-Fuel CNG Engine	M. Sudhakar	11:30
2	95	Improving Manufacturing Productivity through Additive Manufacturing Optimization- A Python-Based Approach	Mit C. Patel, Kapil Surani, Kaushal Khamar, Vimalkumar Dahyabhai Sonara, Patel Jay Kanubhai, Pankaj Prajapati	11:40
3	99	Implementation of Machine Learning Techniques for Production Planning and Process Optimization in Industrial Systems	D. Sathyanarayanan, Mahendra Kumar B, Gandrakoti Lokeshwari, Hussain. A, Joshuva Arockia Dhanraj	11:50
4	106	Machine Learning-Based Predictive Maintenance for Car Air Filters	Lalit Johari, Sri Harsha Chakravarthy Tenali, K R Senthil Kumar, Sivakumar Balu, Mahesh Prakash Joshi, Joshuva Arockia Dhanraj	12:00
5	108	Investigation and Optimization of Single Layer SS309L Cladding on AISI 1018 Steel Using WAAM: Effects on Bead Geometry	Pratheesh Kumar M R, Navina I G, P Nethra Nithya Sree, Hariharan M, Arshak S	12:10
6	109	Artificial Intelligence–Based Simulation for Predicting Rolling Force and Wall Thickness in Seamless Tube Manufacturing	A Chandrashekhar, T Kumarasan, Kasee Palaniappan, J. Mahil, Ajay Singh Yadav	12:20
7	112	Diversity and Machine Learning in the Service of Intrusion Detection in Industrial Control Systems	Bala Sundara Ganapathy N, B. Mathivanan, P.Murugeswari, K.T.Maheswari, Pavan Kumar Ande, Santhosh Kumar Medishetti	12:30
8	117	Comparative Performance Study of Floating and Conventional Photovoltaic Modules under Climatic Variations	Nithya N, M. Muthukumar	12:40
9	120	A Feasibility Study on Designing a Durian Pulp and Seed Separator Machine by Using Artificial Intelligence Combined with Systematic Conceptual Design	T. Channaronga , T. Chanyutb	12:50

TECHNICAL SESSION – 13

(PAPER PRESENTATIONS)

Venue: MB210, Dr. MGR Block

Date: 12-12-2025

Session Chair:

Time: 11.30 AM - 1.00 PM

Sl. No	ID	Title	Authors	Start
1	121	Design and Optimization of Thin-Walled Crash Boxes: Influence of Geometry and Multilayer Composite Material on Crashworthiness Performance	Aishwarya Lakshmi P S, Baskar Ponnusamy	11:30
2	124	AI-Based Hybrid Taguchi–ANOVA–Machine Learning Framework for Compressive Strength Prediction and Optimization in Friction Welding	Kalyanaraman, PRAYAGA BRAHMA SREE RAGHU, Jovita Mariam V, Rakshana S, Shreyash Gonnabhaktula	11:40
3	126	Implementation and Analysis of Remote Communication via Wi-Fi and Bluetooth Using the ESP8266 Platform	C. Saravanakumar	11:50
4	127	Design and Implementation of a Low-Cost IoT-Based Predictive Maintenance Platform Using Recurrent Neural Networks	Dr.M.Sangeetha	12:00
5	130	Predictive Maintenance System Using Machine Learning and Sensor Data Acquisition for Industrial Equipment	Dr. Satyajee Srivastava	12:10
6	57	Design and Simulation of a Path Planning and Torque Control Framework for the Talos Humanoid Robot	Mohammed Sadiq Pachapuri, V. P. Murugan, S.Dhivya, Supriya Ashok Bhosale, Prabu Selvam, Sivakumar Karthikeyan	12:20
7	16	Neural-Network–Driven Quality Control in Manufacturing - case study	Katarzyna Antosz, Paula Kolbusz, M. Anthony Xavier, Andre Batako	12.30
8	114	Optimal Gain and Structure Tuning of PID-like Controllers for Minimum-Jerk Robotic Trajectory Tracking Using Particle Swarm Optimization	Joshuva Arockia Dhanraj	12.40
9	26	Handling Constrained Optimization Problems using “Re-generation of Solutions” Strategy	Baskar A., Anthony Xavier M., Justine Yasappan, Anna Buduk, Katarzyna Antosz	12:50
10	15	Cyber-Physical Integration and Experimental Validation of Impeller Failures Using IoT-Enabled Digital Twin Framework	Thilak Sathish, Ronald Bardhoshi, Arivazhagan Anbalagan, Shone George, Marcos Kauffman	01:00

TECHNICAL SESSION – 14

(PAPER PRESENTATIONS)

Venue: CDMM304

Date: 12-12-2025

Session Chair:

Time: 02.00 PM - 3.30 PM

Sl. No	ID	Title	Authors	Start
1	13	Correlative Analysis of Thermal and Mechanical Stability of Austenite in Low-Carbon Carbide-Free Bainitic Steel	Aphinan Phukaoluan, Jennarong Tungtrongpairoj, Theerawat Kumnorkaew	02:00
2	100	Reinforcement Learning-Based Control of a Two-Wheeled Inverted Pendulum Robot: Simulation and Performance Analysis	D. Sathyanarayanan, Arun K K, Narendra Pothula, M P Natarajan	02:10
3	101	Path Planning for Autonomous Indoor Robot Navigation Using Deep Q-Networks in the Gazebo Simulator	K. Balaji, B.Siranthini, S. Shalini, Senthil Murugan. J, R. Vijaya Kumar Reddy, Bhavya Lingampalli	02:20
4	102	Deep Q-Learning for Solving Inverse Kinematics in Robotic Manipulators	M. Sudhakar	02:30
5	103	Development of an Autonomous Vehicle Prototype with Position Estimation Using Extended Kalman Filter for Indoor Navigation	Sivakumar Balu, Supriya, Harikeerthan M K, Anandkumar s Malipatil, Sathiyamoorthy Margabandu, S. Dhiva	02:40
6	104	Design and Implementation of a Fuzzy Logic–Based Navigation System for an Autonomous Mobile Robot	Durga Prasad Garapati, Harikrishna Bommala	02:50
7	105	Design and Performance Analysis of Fuzzy Logic PDC Controllers for a Two-Link Serial Robotic Arm	Durga Prasad Garapati, A. Elumalai, A. Jaffar Sadiq Ali, Anandkumar S Malipatil, S Gnanamurugan	03:00
8	8	Predictive Modeling of Employee Absence Using LSTM for Workforce Management in Industrial Settings	Kinga Kulawik, Anna Burduk, Agata Kirjanów-Błazej	03:10
9	3	Modeling customer-centric supply chain management for sustainable competitive advantage	Minwir Al-Shammari	03:20
10	122	Energy Optimization In Swarm Robotics	Mallikarjun A Katageri, Dr. S Senthil Kumar	03:30

TECHNICAL SESSION – 15

(PAPER PRESENTATIONS)

Venue: CDMM304

Date: 12-12-2025

Session Chair:

Time: 02.00 PM - 3.30 PM

Sl. No	ID	Title	Authors	Start
1	74	Analysis of IoT System Efficiency Using MQTT Protocol in Industrial Robotics with Robotic Arms, Sensors, and Actuators	Vinodpuri Rampuri Gosavi, Priyanka Abhang, S Cloudin, Sivakumar Balu, G.Yedukondalu,	02:00
2	100	Reinforcement Learning-Based Control of a Two-Wheeled Inverted Pendulum Robot: Simulation and Performance Analysis	D. Sathyanarayanan, Arun K K, Narendra Pothula, M P Natarajan, j	02:10
3	101	Path Planning for Autonomous Indoor Robot Navigation Using Deep Q-Networks in the Gazebo Simulator	K. Balaji, B.Siranthini, S. Shalini, Senthil Murugan. J, R. Vijaya Kumar Reddy, Bhavya Lingampalli	02:20
4	102	Deep Q-Learning for Solving Inverse Kinematics in Robotic Manipulators	M. Sudhakar	02:30
5	5	Readiness–complexity evaluation of sustainable and circular business models for manufacturing SMEs	Joanna HELMAN, Maria ROSIENKIEWICZ, Mateusz MOLASY, Mariusz CHOLEWA	02:40
6	104	Design and Implementation of a Fuzzy Logic–Based Navigation System for an Autonomous Mobile Robot	Durga Prasad Garapati, Harikrishna Bommala	02:50
7	23	Design and Fabrication of Wall Climber Glass Cleaner Robot	G.R Rajkumar, Mithun K, Rahul R, Rajath S Shetty, Rakshith S, Harisha S K	03:00
8	58	Deep Learning-Assisted Ultrasonic and Magnetic Non-Destructive Testing for Pipeline Corrosion Detection	Mohammed Zuhair, Manu Vijay, Deepak G.B, Santhi M George, S.Nooray Sashmi, Sekar K	03:10
9	116	Design and Development of a Modular Pipe-Inspection Robot with Interchangeable Locomotion Systems	Joshuva Arockia Dhanraj	03:20