

MANGALAM COLLEGE OF ENGINEERING

Mechanical Engineering

Peer reviewed journal papers published details

AY- 2024-2025

Sl. No	Name of Author(s)	Title of Paper	Name of Journal	Year of Publication
1	Dr.Bibin K S	Analysis of free liquid surface deformation and thermal destratification in liquid storage tanks using Open FOAM	Journal of Energy Storage	2024
2	Abin Paul	Mechanical, Tribological and Vibrational Analysis of Al6061-Based Composites Reinforced with Aluminum Oxide and Silicon Carbide	The Indian Institute of Metals - IIM 2025	2025
3	Dr Manuel George	Mechanical, Tribological and Vibrational Analysis of Al6061-Based Composites Reinforced with Aluminum Oxide and Silicon Carbide	The Indian Institute of Metals - IIM 2025	2025
4	Dr Manuel George	Mechanical, tribological and modal characteristics of eco-friendly coir/sugarcane fillers reinforced polymer composites	Materials Research Express	2024
5	Dr Manuel George	Effect of drill bit type on delamination of graphene-reinforced carbon fiber composites along with impact, and damping properties	Journal of industrial textiles Sage O	2025
6	Abin Paul,Ajithkumar KT,,Manuel George	Biowax-derived epoxy composites with rGO–NZF–Al ₂ O ₃ : a green solution for enhanced EMI shielding and structural performance	Composite Interfaces	2025
7	Johan George Cherian Premjith S Abin Paul	Design and Analysis of Quality Improvement for Radiator Manufacturing Industry	International Journal of Energy and Thermal Applications	2024

8	Johan George Cherian	Revolutionizing Culinary Innovation and Sustainability through Smart Kitchen Assistant	Trends in Machine design	2024
9	Johan George Cherian Ajith Kumar K.T	Optimization of Supply Chain Management Cost Reduction and Delivery Time Improvement	Journal of Production Research & Management	2025
10	Johan George Cherian Harikrishnan A R	Multi-Product Break-Even Quantity Analysis using MATLAB	Journal of Emerging Technologies and Innovative Research	2025

AY- 2023-2024

Sl. No	Name of Author(s)	Title of Paper	Name of Journal	Year of Publication
1	Dr Manuel George	Buckling, bending and dynamic analyses of laminated three-phase polymer/graphene/carbon fiber composite rectangular plates	Structures	2023
2	Dr Manuel George	Enhancement of vibrational characteristics of rotating CFRP composite tapered plates reinforced by graphene nanoparticles	Polymer Composites	2023
3	Dr Manuel George	Characterization Of Material, Mechanical, Static Bending And Vibration Properties Of Glass Fiber Composite Panels Reinforced With Graphene Nanofillers,	Journal of Manufacturing Process	2023
4	Dr K. Pratheesh	"Investigation And Optimization Of Tribo-Mechanical Behavior Of Squeeze Casted Al-Si Piston Alloy-Based Metal Matrix Composite Using Response Surface Methodology And Neural Network,	Surface Review and Letters (SRL)	2023
5	Manikandan H, Abhinand Vijay, Akshay Raj, Arun V. Madhu, Cijo Kurian Abraham	Novel Thermal Management of BIPV System-Liquid Earth-Based Cooling	Journal of Refrigeration, Air Conditioning, Heating and Ventilation(STM)	2023

6	Tony Mathew, Jayaraj J, Joel Jaimon, Kiran E.P., Vidhukrishnan U	Stair Climbing Wheelchair	Trends in Mechanical Engineering & Technology(STM)	2023
7	Harikrishnan A.R, Adithya Shine, Ajith Joy, Aravind Shine, Ashik Suresh	Ergonomic Design and Intervention of a Chapati Making Machine	Journal of Production Research & Management(STM)	2023

8	Manuel George, Sreenath A	Design of Flexible Mobile Platforms for Industrial Elevation Tasks	International Journal of Manufacturing and Materials Processing(STM)	2023
9	Manikandan H, Arjun P, Begin Abraham Ninan, Bibin Varghese, Ceryl M Mathew	Paddy Sacking Conveyor	Journal of Production Research & Management(STM)	2023
10	Albert Mathew, Parvathy Parthasarathy, Remin Rafi, Priya Varghese, Shoaib N	Thermal Management of Cylindrical Lithium-Ion Battery Using a Wavy Tube	International Journal of Manufacturing and Materials Processing(STM)	2023
11	Tony Mathew, Amal Jagadeesh, Abin Joy, Aswin A, Aravind P	Comparative Study of Various Injection Methods for Reducing Engine Heat of Internal Combustion Engine	Trends in Mechanical Engineering & Technology(STM)	2023
12	Sarath T R , Tony Mathew	Ergonomic Risk Analysis Using Various Ergonomic Assessment Tools to Reduce the Risk of Musculoskeletal Disorders (MSDs): A Case Study in Construction Industry	Journal of Production Research & Management(STM)	2023
13	Rabi. Johnson, Famy Antony, Jayashankar Pillai, Justin K Kurian, Sayana Niyas	Semi-Automatic Cow Lifting Mechanism	Trends in Mechanical Engineering & Technology(STM)	2023

14	Navish Kumar, Amal ES, Anandu Sajeev, Alen Jose, Adarsh Joseph	Diaper Dissolving Machine	Trends in Machine Design (STM)	2023
15	Amal R Ajith K G N Alex Mathew George Balakrishna K P Febin Santhosh	Cutting Tool for Accurate Cutting of PVC Pipes	Trends in Machine Design (STM)	2023

16	Dr. Rabi. J	Development of Fuzzy Logic Controller in Automatic Vehicle Navigation using IoT	Journal of Electrical Systems (JES)	2024
17	Bibin, Kattupurathu Scharia, Sarath Raj, Janardanan Sarasamma Jayakumar, and Krishnan Kutty Elsy Bai Reby Roy.	OpenFOAM Modelling of Single-Phase and Two-Phase Heat Transfer in Square Ducts Partially Filled with Porous Medium	Experimental and Computational Multiphase Flow	2024
18	Navish Kumar	Factors Influencing the Design of Parabolic Trough Collector: A Review	International Journal of Energy and Thermal Applications (STM)	2024
19	Dr Pratheesh K	Liquid Metallurgy Synthesis of Gr or MoS ₂ -Reinforced Aluminum Composites: a Short	Technical Gazette	2024
20	Manuel George, P.P. George	Dielectric Properties of Reduced Graphene Oxide with Nickel Cobalt Ferrite and Nickel Zinc Ferrite Epoxy Nanocomposites	Journal of Polymer and Composites (STM)	2023
21	Manikandan H Ajith Raveendran	Spinning a New Narrative of Total Productive Maintenance Strategies in Textile Manufacturing	Trends in Mechanical Engineering & Technology (STM)	2023
22	Manikandan H, Bimalrag P	Next-Gen Parking Technology: Automatic Hand Brake Systems Unveiled	Journal of Automobile Engineering and Applications (STM)	2023

AY- 2022-2023

Sl. No	Name of Author(s)	Title of Paper	Name of Journal	Year of Publication
1	Dr.Manuel george	Experimental Investigation of the hydrophobic and modal properties of epoxy nanocomposites reinforced with graphine nanofillers. A N Shankar, Mattipally Prasad, Rajeshkumar Selvaraj, Manuel George, Akash Mohanty, J Sivakumar. Indian Institute of Metals. Dec 2022.	Transactions of the Indian Institute of Metals (2023)	2023
2	Dr.Manuel George, Dr.K. Pratheesh	Thermal and magnetic properties study of NiCo ₂ O ₄ /graphene and NiFe ₂ O ₄ /graphene. Manuel George, K. Pratheesh, Akash Mohanty, Nakul Suresh, Tijo Varghese, Richard Sunny, S. Narayanan. Materials Today Proceedings	Materials Today Proceedings	2022
3	Dr.K Pratheesh & Navish Kumar	Effect of squeeze pressure and strontium addition on tribological and mechanical properties of Al-Si Piston Alloy with varying amount of nickel.Transaction of Indian Institute of Metals. K Pratheesh, VV Monikandan, N Kumar	Transactions of the Indian Institute of Metals (2023)	2023

4	Mr.Benphil C Mathew	Mechanical properties studies on rubber composites reinforced with Acacia Caesia fibre Navaneeth Santhosh, Sudhimon Selvam, Rahul Reghu, Jishnu Sundaran, Benphil C.Mathew, Sivasubramanian Palanisamy. Materials Today Proceedings. Available online 23 November 2022.	Materials Today: Proceedings	2023
5	Dr.Rabi j	Micro thermal behavoiur of Ti-Mg composite proceed through friction stir processing. Micro thermal behavior of Ti-Mg composite processed through friction stir processing.S.Selvakumar, S.Aneesh, J.Rabi, N.Mohammed Raffic, K.Ganesh Babu. Materials Today Proceedings. 24th December 2022	Materials Today Proceedings.	2023
6	Dr.K Pratheesh	Cenosphere filled epoxy composites: structural, mechanical, and dynamic mechanical studies. Biomass Conv. Bio ref. (2023). Pratheesh, K., Narayanasamy, P., Prithivirajan, R. et al..	Transactions of the Indian Institute of Metals (2023)	2023
7	Dr.Manuel Gorge	Characterization of material, mechanical, static bending and vibration properties of glass fiber composite panels reinforced with graphene nanofillers Manuel George et al	Journal of Manufacturing Processes	2023
8	Dr.K Pratheesh	Effect of corn husk fiber length and diameter on load bearing, fatigue, and DMA properties of biosilica toughened epoxy composite,Pratheesh K., Gurupranes S. V., Aditya Kumar, Pravin P. Patil,	Polym. Compos (2023)	2023
9	Dr.K Pratheesh	Investigation and Optimization of TriboMechanical Behavior of Squeeze Casted Al-Si Piston Alloy based Metal Matrix Composite using Response Surface Methodology and Neural Network,K Pratheesh et al 2023	Surface review and Letters, (2023)	2023

10	Mr.Arun Jose	Modelling the drivers and barriers of the dry fish supply chain traceability for micro and small enterprises in India: an ISM and MICMAC approach arun jose et al 2022	Int.J Entrepreneurship and small Business	2022
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11	Mr.Arun Jose	Traceability adoption in dry fish supply chain SMEs in India:exploring awareness,benefits,drivers and barriers arun jose 2022	Indian academy of sciences	2022
12	Mr.Arun Jose	A QR code based traceability system for dry fish supply chain for micro and small enterprises in india Arun Jose 2022	Int.J Indian Culture and Business Management	2022

Peer reviewed conference papers published details

Sl. No.	Name of Author(s)	Title of Paper	Name of Conference	Year
1	Dr.Manikandan H	Selecting the optimum Tool for	3rd International Conference on	2022
		Driving Performance Evaluation by assessing the ergonomic methods-an overview	Computing in Mechanical Engineering (ICCME 2021)	
2	Dr.Rabi. J	An Algorithm for Extracting Image Features Using a Random Deep Neural Network	ICACITE (IEEE Conference Proceedings)	2023

Book published details

Sl. No.	Name of Author(s)	Title of the Book	Name of the Publisher	Month / Year
1	Dr Rabi Johnson	Production Management	Taran publications, New Delhi.	2022
2	Dr Pratheesh K	Smart Manufacturing Technology	Jayalakshmi Publications	2022
3	Dr Manikandan H	Basic Principles of Industrial Hygiene	Notion Press Chennai	2022
4	Dr.Rabi J	Industrial Safety Engineering	JC Publishers Coimbatore	2022
5	Dr Pratheesh K	Engineering Mechanics	Jayalakshmi Publications	2022
6	Amal Krishna	Computer Aided Design And Analysis Lab Manual	Technostar Publications	2022
7	Premjith S,	Computer Aided Design And Analysis Lab Manual	Technostar Publications	2022

8	Mr.Hariprasad	Fluid Mechanics And Hydraulic Machines Lab Manuel	Technostar Pubications	2022
9	Mr.Benson Varghese Babu	Fluid Mechanics And Hydraulic Machines Lab Manuel	Technostar Pubications	2022
10	Mr.Albert Mathew	Basic Mechanical Workshop Manual	Technostar Pubications	2022
11	Mr.Rahul Krishna	Basic Mechanical Workshop Manual	Technostar Pubications	2022
12	Dr.Arun Jose	Basic Mechanical Workshop Manual	Technostar Pubications	2022
13	Mr.Abin Babu,	Thermal Engineering Lab II Manual	Technostar Pubications	2022
14	Mr.Bibin K S	Thermal Engineering Lab II Manual	Technostar Pubications	2022
15	Mr Ajithkumar K T	Thermal Engineering Lab II Manual	Technostar Pubications	2022
16	Mr.Jishnu M	Thermal Engineering Lab I Manual	Technostar Pubications	2022
17	Mr.Amal Krishna	Thermal Engineering Lab I Manual	Technostar Pubications	2022
18	Mr.Tony Mathew,	Software Lab Manuel	Technostar Pubications	2022
19	Mr Benphil C Mathew	Software Lab Manuel	Technostar Pubications	2022
20	Mr.Santhu Varghese,	Machine Tools Lab II Manuel	Technostar Pubications	2022
21	Mr.Shinto Baby	Machine Tools Lab II Manuel	Technostar Pubications	2022
22	Dr Pratheesh K	Machine Tools Lab II Manuel	Technostar Pubications	2022
23	Mr Amal R	Computer Aided Machine Drawing Lab Manuel	Technostar Pubications	2022
24	Mr.Premjith S	Computer Aided Machine Drawing Lab Manuel	Technostar Pubications	2022
25	Mr.Aneesh K S	Machine Tools Lab I Manuel	Technostar Pubications	2022
26	Dr Rabi J	Machine Tools Lab I Manuel	Technostar Pubications	2022
27	Mr Rajeeve K Mohan	Machine Tools Lab I Manuel	Technostar Pubications	2022
28	Mr.Navish Kumar	Industrial Engineering Lab Manuel	Technostar Pubications	2022

Book chapters published details

Sl. No.	Name of Author(s)	Title of the Book	Title of the Book Chapter	Name of the Publisher	Year
1	Dr.Manikandan H	Applications of Computation in Mechanical Engineering	Selecting the Optimum Tool for Driving Performance Evaluation by Assessing the Ergonomic Methods—An Overview. Arun Chand, H. Mannikandan & A. B. Bhasi. Conference paper. Applications of Computation in Mechanical EngineeringFirst Online: 29 November 2022	Springer	2023

WORKING MODELS AND PROTOTYPES DEVELOPED

S.No	Faculty Name	Proto type/Models	Description
1	Mr Premjith S	Chainless Bicycle With Transmission Through Powered Motor	The chainless bicycle with transmission through powered motor was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
2	Mr.Johan George Cherian	Solar Hybrid Bike	The solar hybrid bike was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.

3	Rajeeve K Mohan	Fully Automated Multi-Crop Dryer And Grinder With Smart Control For Household And Small-Scale Applications	The fully automated multi-crop dryer and grinder with smart control for household and small-scale applications was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
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4	Dr. Rabi Johnson	Design And Construction Of Semi Automated Egg Incubator With Decay Detector	The design and construction of semi automated egg incubator with decay detector was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
5	Premjith S	Automatic Belt Transfer System In Grain Processing Machine	The automatic belt transfer system in grain processing machine was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
6	Mr.Nijo Jose	Motorised Hydraulic Jack	The motorised hydraulic jack was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
7	Mr.Johan George Cherian	Mobile Smart Kitchen Assistant	The mobile smart kitchen assistant was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
8	Mr.Harikrishnan A R	Hybrid Solar Motor Bike	The hybrid solar motor bike was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
9	Mr.Akhil Ramesh	Rubber Manufactuiring From Natural Synthetic Composites	The rubber manufactuiring from natural synthetic composites was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.

10	Mr.Jishnu M	Fabrication Of Aluminium Based Metal Matrix Composite Using Siliconcarbide Reinforcement And Evaluation Of Mechanical Properties	The fabrication of aluminium based metal matrix composite using siliconcarbide reinforcement and evaluation of mechanical properties was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
11	Mr. Harikrishnan A R	Ergonomic Design and Evaluation of Blackboard	The study focuses on the ergonomic design and evaluation of classroom blackboards to improve comfort, usability, and teaching effectiveness. It assesses design parameters using ergonomic principles to reduce physical strain, enhance readability, and create a healthier learning environment.
12	Benphil C Mathew	Automated Pneumatic Vehicle Bumper	The air powered pneumatic vehicle bumper was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
13	Mr.Amal Krishna	Novel Thermal Management Of BIPV System- Liquid Earth Based Cooling	The novel thermal management of bipv system- liquid earth based cooling was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
14	Mr.Harikrishnan A R	Ergonomic Design And Analysis Of Driver Seat In Transport Vehicles	The ergonomic design and analysis of driver seat in transport vehicles was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
15	Mr.Tony Mathew	Comparative Study Of Various Injection Method For Reducing Engine Heat Of Internal Combustion Engine	The comparative study of various injection method for reducing engine heat of internal combustion engine was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.

16	Mr. Rahul Krishnan	Robotic Gripper Design For Pick And Place Operations In Forging Industry	The robotic gripper design for pick and place operations in forging industry was designed and developed as a functional working model demonstrating practical engineering concepts. It showcases the application of theoretical knowledge through hands-on design and fabrication.
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PATENTS PUBLISHED

CAYM1 (2024-25) Details of Patent Published

S:No	Name Of The Patent Published /Awarded	Name of Faculty	PATENT NUMBER	Year	Remarks
1	Bionic Prosthetic Knee Joint with Load-Adaptive Feedback Mechanism for Improved Human Mobility	1.Mr.Santhu Varghese Thomas 2.Mr.Premjith S 3.Dr.Rabi J 4.Mr.Harikrishnan A R	202541040995 A	2025	The invention discloses a bionic prosthetic knee joint integrated with a load-adaptive feedback mechanism for enhanced mobility and biomechanical performance in amputees.
2	Autonomous Mobile Robot with Real-Time Obstacle Mapping and Adaptive Path Planning	1.Dr. Manikandan H 2.Mr.Johan George Cherian 3)Mr. Amal R 4)Mr.Rahul Krishnan	202541040997 A	2025	The invention discloses an autonomous mobile robot equipped with realtime obstacle mapping and adaptive path planning. It integrates LiDAR, ultrasonic, and RGB-D sensors to construct dynamic environmental maps, leveraging SLAM (Simultaneous Localization and Mapping) for precise positioning.
3	High-Speed Laser-Based Additive Manufacturing of Aerospace Components with In-Situ Defect Detection Units	1.Dr.Manuel George 2.Mr. .Rajeeve K Mohan 3.Mr.Ajith Kumar K T 4.Mr.Abin Paul	202541040998 A	2025	This invention discloses a high-speed laser-based additive manufacturing (AM) system for producing aerospace-grade components with integrated in-situ defect detection capabilities

4	Microfluidic Cooling Device for Thermal Management in High-Density Microprocessor Arrays	Mr.Navish Kumar Mr.Nijo Jose Dr.Arun Jose Mr.Muhammed Nihal P A	202541041002 A	2025	This invention discloses a microfluidic cooling device designed for the efficient thermal management of high-density microprocessor arrays.
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(2023-24) Details of Patent Published

Sl:No	Name Of The Patent Published /Awarded	Name Of Faculty	Patent Number	Year	Remarks
1	Deep Learning Techniques For Prevention Of Train Accidents & Prediction Of Breakdown In The System.	Dr.Rabi J	202341043272 A	2023	The proposed invention presents a system and method for preventing train accidents and predicting system breakdowns using deep learning techniques. By leveraging historical and real-time data from various sensors, equipment performance records, and environmental conditions, a deep learning model is trained to analyze the train system's behavior.
2	Real Time Noise Cancellation Techniques Using Deep Learning (UK Patent)	Dr.Rabi J	6355830	2024	The invention presents a real-time noise cancellation technique using deep learning for adaptive suppression of unwanted acoustic signals. A deep neural network analyzes incoming audio to identify and attenuate noise while preserving the desired signal with minimal latency. The system continuously adapts to changing noise conditions, enabling effective performance in non-stationary environments. Compared to conventional adaptive filtering methods, the proposed approach improves noise reduction accuracy and signal clarity. The invention is suitable for real-time applications including communication systems, hearing aids, and

					industrial noise control
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3	Revolutionizing Grain Processing - Design And Implementation Of An Automatic Belt Transfer System	Mr Rahul Krishnan Dr.Bibin K S Mr.Harikrishnan A R Mr.Premjith S	202441030752 A	2024	Proposed invention introduces an innovative solution to streamline grain processing operations through the implementation of an Automatic Belt Transfer System (ABTS). Traditional grain processing methods often involve manual handling and transfer of grains between different stages of the process, leading to inefficiencies, labor intensiveness, and potential safety hazards. In response to these challenges, the ABTS automates the transfer of grains within the processing machine, enhancing efficiency and safety while reducing reliance on manual labor.
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4	Design And Development Of Automated Medical Waste Packing Bin System	Navish Kumar, Dr.Manikandan H, Akhil Ramesh	202441030767 A	2024	The Design and Development of an Automated Medical Waste Packing Bin System introduces an innovative solution to streamline the disposal process of medical waste in healthcare facilities. Medical waste management poses significant challenges due to its hazardous nature and stringent regulatory requirements, Traditional methods of medical waste disposal often involve manual sorting and packing, which can be labor intensive, time-consuming, and prone to human error.
5	Fully Automated Multi Crop Dryer And Grinder With Smart Controls For House Hold And Small Scale Applications	Rajeeve K Mohan Jishnu M Amal R Nijo Jose	202441030740 A	2024	The Fully Automated MultiCrop Dryer and Grinder with Smart Controls is a pioneering innovation designed for household and small-scale applications, addressing the need for efficient crop processing in diverse agricultural settings.
6	Enhancing Convenience Find Safety For Riders With The Design And Development Of An Innovative Two-Wheeler Puncture Assisting Trolley	Mr.Santhu Varghese Thomas Dr.Manual George MrJohan George Cherian	202441030779 A	2024	This study introduces an innovative solution aimed at enhancing the convenience and safety of riders with the design and development of a Two Wheeler Puncture Assisting Trolley. As punctures are a common occurrence for two-wheeler riders, particularly in urban and rural areas with valying road conditions, the proposed trolley offers a practical and efficient solution to address this challenge.

7	Deign &Construction Of Semi Automated Solar Incubator With Image Analyser For Eggs In Poultry Farms	Dr.Rabi J, Dona Thomas, Ajithkumar K T, Arun Jose	202441030742 A	2024	The design and construction of a Semi—Automated Solar Incubator with Image Analyser for Eggs in Poultry Farms represent a significant advancement in poultry farming technology. This innovative system integrates solar energy utilization, automation and image analysis to optimise egg incubation processes in poultry farms
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