

Project Classifications

Sl. No.	Project title	Category (Area or specialisation)	Complexity (high, moderate and low)
1	Effect of Tool Pin Profile on Microstructural & Mechanical properties of Friction Stir Welded Dissimilar Alloy	Materials & Manufacturing	high
2	Design and Fabrication of Work Holding Device for Convex Milling	Design & Production	Low
3	Design and Simulation of Golf Cart using Ansys Software	Vehicle Engineering	moderate
4	Experimental and numerical residual stress analysis on Al alloys dissimilar weldments developed by TIG welding technique	Materials & Manufacturing	high
5	Investigation of Mechanical properties of SS316L Additive manufactured with different printing parameters	Materials & Manufacturing	high
6	Design and Thermal Analysis of Ribs in the Application of Battery Thermal Management System	Thermal & Energy Systems	high
7	Investigating the Impact of Oil bath Temperature on the Microstructure of SS420 steel	Materials & Manufacturing	moderate
8	Design and Fabrication of Passenger Electric Three-Wheeler Vehicle	Vehicle Engineering	high
9	Design and Fabrication of Passenger Electric Three-Wheeler Vehicle	Vehicle Engineering	high
10	Comparative Studies on Wear, Corrosion and Mechanical Properties of MIG, TIG and FSW Weldments of AA2014 and AA5083	Materials & Manufacturing	high
11	Modelling and Fabrication of Dosa Printer	Design & Production	low
12	Design and Fabrication of RC Mico Drone for Surveillance and GEO Location Tracking	Mechatronics /Interdisciplinary	moderate
13	Fabrication and Characterization of Hybrid Thermoplastic Filaments using Filment Extruder Setup	Materials & Manufacturing	high
14	Study and Analysis of Mechanical Properties of Dissimilar Weldments	Materials & Manufacturing	moderate
15	Optimization of Engine Cylinder Fins for Improved Heat Transfer Using Aluminium Alloy 6063	Thermal & Energy Systems	high
16	Fabrication of Electric Rickshaw for Goods Carriage	Vehicle Engineering	high

17	Developing a Constitutive Model Equation for Zircaloy-4 material	Materials & Manufacturing	high
18	Formulation and characterisation of Hotmelt adhesives reinforced with microfibrres for improved Adhesion Strength and Wettability	Materials & Manufacturing	moderate
19	Single Axis Solar Tracking system	Thermal & Energy Systems	high
20	Fabrication of Reaction Chamber to Synthesis Hot Melt Adhesives	Materials & Manufacturing	moderate
21	Solenoid Valve operated Fuel theft prevention System	Mechatronics / IoT	low
22	Power generation from IC Engine exhaust gases	Thermal & Energy Systems	high
23	Experimental Studies on Mechanical Properties of Aluminium Matrix Composites Reinforced with Natural Fibre Ashes	Materials & Manufacturing	high
24	Mileage projector for two wheelers	Mechatronics / IoT	low
25	Mechanical and Tribological characterization of Aluminium matrix composites reinforced with Graphane / Zirconia biphas nano-particles	Materials & Manufacturing	high
26	Automated Library Management System Using Java	Mechatronics / Software	low
27	Tribological characterization of Aluminium Matrix Composites reinforced with Fibre Ash Particulates	Materials & Manufacturing	high
28	Design and fabrication of EV vehicle	Vehicle Engineering	high
29	Vertical Axis Wind Turbine with wind shield	Thermal & Energy Systems	high
30	Design and fabrication of EV vehicle	Vehicle Engineering	high
31	Particle dispersed Matrix modification in polymer matrix composites: Processing and characterisation	Materials & Manufacturing	high
32	Underground cable's fault detection using IOT server	Mechatronics / IoT	moderate
33	Fabrication and Characterization of Aluminium Metal Matrix Nanocomposites using Powder Metallurgical Techniques	Materials & Manufacturing	high
34	Development of 3D Filament Extruder Setup for Uniform and Continuous Thermoplastic Filaments	Materials & Manufacturing	moderate
35	Fabrication and Characterization of Aluminium Metal Matrix Composites	Materials & Manufacturing	high

36	Temperature and moisture sensor for the agricultural fertilization process	Agricultural & Environmental	moderate
37	Development of Hydrogen Full-Cell Technology for Automobile Vehicle	Thermal & Energy Systems + Vehicle Engineering	high
38	Automated Seed Sowing Machine using Solar Energy	Agricultural & Environmental	moderate
39	Characterization of A7075/fibre composites fabricated via stir casting	Materials & Manufacturing	high
40	Composite Rebars: Fabrication and Characterization	Materials & Manufacturing (Structural)	moderate
41	Coal Mine Safety Monitoring System	Mechatronics / Safety Systems	moderate
42	Optimization of 3D printer parameters for Carbon Reinforced PETG Filament	Materials & Manufacturing	high
43	Effect of Flux on Properties of GTAW welded mild steel	Materials & Manufacturing	low
44	Characteristics of Waste Plastic Oil	Thermal & Energy Systems	moderate
45	Electric Vehicle Project	Vehicle Engineering	high
46	Experimental Analysis of Mechanical Properties of Fibre Reinforced Laminated Composites	Materials & Manufacturing	high
47	Heart Disease Prediction using Bio-Inspired Algorithms	Healthcare / AI	Moderate
48	Calibration of Modified Johnson Cook Model of Zircaloy-4 Tensile Data	Materials & Manufacturing	high

Projects with SDG mapping and justification

Sl. No.	Project title	Targeted SDGs	Justification
1	Effect of Tool Pin Profile on Microstructural & Mechanical properties of Friction Stir Welded Dissimilar Alloy	SDG 9, 12	Enhances advanced solid-state joining techniques that minimize defects and rework, thereby reducing material wastage. Promotes resource-efficient manufacturing aligned with sustainable industrial practices.
2	Design and Fabrication of Work Holding Device for Convex Milling	SDG 9	Improves machining accuracy and productivity, reducing rejection rates and operational inefficiencies. Contributes to advanced and reliable manufacturing systems.
3	Design and Simulation of Golf Cart using Ansys Software	SDG 11, SDG 13	Facilitates design of low-emission transport systems through simulation-driven optimization. Supports sustainable urban mobility and reduction in carbon footprint.

4	Experimental and numerical residual stress analysis on Al alloys dissimilar weldments developed by TIG welding technique	SDG 9	Enables prediction and control of residual stresses, improving structural integrity and lifespan of components. Reduces failure rates and enhances industrial sustainability.
5	Investigation of Mechanical properties of SS316L Additive manufactured with different printing parameters	SDG 9, SDG 12	Optimizes process parameters to reduce material waste and energy consumption. Encourages sustainable production through additive manufacturing technologies.
6	Design and Thermal Analysis of Ribs in the Application of Battery Thermal Management System	SDG 7, SDG 13	Improves heat dissipation in EV batteries, enhancing energy efficiency and lifespan. Contributes to reduced greenhouse gas emissions in electric mobility.
7	Investigating the Impact of Oil bath Temperature on the Microstructure of SS420 steel	SDG 9, 12	Optimizes thermal processes to achieve desired properties with minimal energy use. Reduces trial-and-error processing, conserving resources and energy.
8	Design and Fabrication of Passenger Electric Three-Wheeler Vehicle	SDG 7, 11, SDG 13	Promotes transition to clean energy-based transport systems, reducing urban air pollution. Supports sustainable city infrastructure and low-carbon mobility.
9	Design and Fabrication of Passenger Electric Three-Wheeler Vehicle	SDG 7, 11, SDG 13	Promotes transition to clean energy-based transport systems, reducing urban air pollution. Supports sustainable city infrastructure and low-carbon mobility.
10	Comparative Studies on Wear, Corrosion and Mechanical Properties of MIG, TIG and FSW Weldments of AA2014 and AA5083	SDG 9, SDG 12	Identifies efficient and durable welding methods, minimizing material failure and rework. Supports sustainable material utilization in industrial fabrication.
11	Modelling and Fabrication of Dosa Printer	SDG 9, SDG 8	Automates food preparation processes, enhancing productivity and consistency in small-scale industries. Supports entrepreneurship and economic growth.
12	Design and Fabrication of RC Mico Drone For Surveillance and GEO Location Tracking	SDG 9, SDG 11, 16	Enables real-time monitoring for urban planning, disaster management, and security. Strengthens smart city infrastructure and public safety systems.
13	Fabrication and Characterization of Hybrid Thermoplastic Filaments using Filment Extruder Setup	SDG 9, SDG 12	Develops recyclable filament materials, reducing plastic waste in 3D printing. Promotes circular economy in additive manufacturing.

14	Study and Analysis of Mechanical Properties of Dissimilar Weldments	SDG 9	Enhances understanding of joint behaviour in complex materials, improving structural safety and reliability in engineering systems.
15	Optimization of Engine Cylinder Fins for Improved Heat Transfer Using Aluminium Alloy 6063	SDG 7, SDG 13	Improves heat transfer efficiency, leading to better fuel economy and reduced emissions. Contributes to energy-efficient engine performance.
16	Fabrication of Electric Rickshaw for Goods Carriage	SDG 7, 11, 13	Provides eco-friendly logistics solutions, reducing dependence on fossil fuels. Enhances sustainable urban transportation systems.
17	Developing a Constitutive Model Equation for Zircaloy-4 material	SDG 9, 7	Supports accurate prediction of material behaviour in nuclear reactors, ensuring safe and efficient energy generation.
18	Formulation and characterisation of Hotmelt adhesives reinforced with microfibrres for improved Adhesion Strength and Wettability	SDG 9, SDG 12	Develops high-performance adhesives with reduced environmental impact. Promotes sustainable material alternatives in manufacturing.
19	Single Axis Solar Tracking system	SDG 7, SDG 13	Maximizes solar panel efficiency by tracking sunlight, increasing renewable energy output. Reduces dependence on non-renewable energy sources.
20	Fabrication of Reaction Chamber to Synthesis Hot Melt Adhesives	SDG 9, SDG 12	Improves production efficiency and control in adhesive manufacturing. Supports sustainable industrial processing techniques.
21	Solenoid Valve operated Fuel theft prevention System	SDG 11, SDG 16	Enhances resource security and reduces economic losses through smart monitoring. Strengthens transparency and accountability in transport systems.
22	Power generation from IC Engine exhaust gases	SDG 7, SDG 13	Recovers waste heat energy from engines, improving overall energy efficiency. Reduces fuel consumption and greenhouse gas emissions.
23	Experimental Studies on Mechanical Properties of Aluminium Matrix Composites Reinforced with Natural Fibre Ashes	SDG 9, SDG 12	Utilizes agricultural waste as reinforcement material, reducing environmental burden. Encourages sustainable material innovation.
24	Mileage projector for two wheelers	SDG 7, 12	Promotes awareness of fuel consumption patterns, encouraging efficient driving habits. Supports responsible energy usage.
25	Mechanical and Tribological characterization of Aluminium matrix	SDG 9, SDG 12	Enhances durability and wear resistance of materials, reducing maintenance and replacement

	composites reinforced with Graphane / Zirconia biphase nano-particles		frequency. Conserves resources over lifecycle.
26	Automated Library Management System Using Java	SDG 4, SDG 9	Digitizes academic resources, improving accessibility and operational efficiency. Supports quality education infrastructure.
27	Tribological characterization of Aluminium Matrix Composites reinforced with Fibre Ash Particulates	SDG 9, SDG 12	Encourages use of eco-friendly reinforcements, reducing dependency on synthetic materials. Supports sustainable product design.
28	Design and fabrication of EV vehicle	SDG 7, 11, 13	Advances clean transportation technologies, reducing emissions and fossil fuel dependency. Promotes sustainable urban mobility.
29	Vertical Axis Wind Turbine with wind shield	SDG 7, SDG 13	Harnesses renewable wind energy for decentralized power generation. Reduces reliance on conventional energy sources.
30	Design and fabrication of EV vehicle	SDG 7, 11, 13	Advances clean transportation technologies, reducing emissions and fossil fuel dependency. Promotes sustainable urban mobility.
31	Particle dispersed Matrix modification in polymer matrix composites: Processing and characterisation	SDG 9, SDG 12	Improves material performance while optimizing resource utilization. Supports sustainable development of advanced composites.
32	Underground cable's fault detection using IOT server	SDG 9, SDG 11	Enhances reliability of power distribution systems through smart monitoring. Reduces downtime and improves urban infrastructure resilience.
33	Fabrication and Characterization of Aluminium Metal Matrix Nanocomposites using Powder Metallurgical Techniques	SDG 9, SDG 12	Promotes efficient material processing with improved properties. Reduces material waste and enhances lifecycle performance.
34	Development of 3D Filament Extruder Setup for Uniform and Continuous Thermoplastic Filaments	SDG 9, SDG 12	Enables local recycling and production of filaments, reducing plastic waste. Encourages sustainable additive manufacturing practices.
35	Fabrication and Characterization of Aluminium Metal Matrix Composites	SDG 9, SDG 12	Develops lightweight materials that improve fuel efficiency in applications. Supports sustainable engineering design.
36	Temperature and moisture sensor for the agricultural fertilization process	SDG 2, 12, SDG 13	Enables precision agriculture by optimizing water and fertilizer use. Reduces resource wastage and environmental impact.
37	Development of Hydrogen Full-Cell Technology for Automobile Vehicle	SDG 7, 9, SDG 13	Promotes clean hydrogen energy as an alternative to fossil fuels. Supports

			innovation in sustainable transport systems.
38	Automated Seed Sowing Machine using Solar Energy	SDG 2, SDG 7, 13	Integrates renewable energy into agriculture, improving efficiency and reducing emissions. Supports sustainable farming practices.
39	Characterization of A7075/fibre composites fabricated via stir casting	SDG 9, SDG 12	Enhances strength-to-weight ratio of materials, reducing energy consumption in applications. Supports efficient resource utilization.
40	Composite Rebars: Fabrication and Characterization	SDG 9, SDG 11	Improves durability and corrosion resistance in infrastructure. Reduces maintenance needs and enhances sustainable construction.
41	Coal Mine Safety Monitoring System	SDG 3, SDG 8	Monitors hazardous conditions to prevent accidents and protect worker health. Promotes safe and decent working environments.
42	Optimization of 3D printer parameters for Carbon Reinforced PETG Filament	SDG 9, SDG 12	Reduces material waste and improves process efficiency in additive manufacturing. Supports sustainable production techniques.
43	Effect of Flux on Properties of GTAW welded mild steel	SDG 9	Improves weld quality and reduces defects, minimizing rework and resource wastage in manufacturing.
44	Characteristics of Waste Plastic Oil	SDG 12, SDG 13	Converts plastic waste into usable fuel, reducing landfill burden. Contributes to circular economy and emission reduction.
45	Electric Vehicle Project	SDG 7, 11, SDG 13	Encourages adoption of clean energy vehicles, reducing urban pollution. Supports sustainable transportation systems.
46	Experimental Analysis of Mechanical Properties of Fibre Reinforced Laminated Composites	SDG 9, SDG 12	Develops high-strength, lightweight materials that improve efficiency and reduce material consumption.
47	Heart Disease Prediction using Bio-Inspired Algorithms	SDG 3, SDG 9	Enables early diagnosis using advanced algorithms, improving healthcare outcomes. Supports innovation in medical technology.
48	Calibration of Modified Johnson Cook Model of Zircaloy-4 Tensile Data	SDG 7, 9	Provides accurate material modelling for high-performance energy systems. Enhances safety and efficiency in nuclear applications.