

S. No.	PROBLEM	STATEMENT
AGRICULTURAL MACHINERY		
1	Machinery with Tangential Threshing Technology	Tangential threshing involves a drum with a rotating concave (a curved or slotted surface) that operates at a tangential angle to the drum's rotation. As the harvested crop passes through this mechanism, the tangential motion creates a shearing effect that helps separate the grain from the straw and other plant material. The tangential action is designed to be gentle on the grain while effectively threshing and separating it from the crop residue. This technology is used to improve the efficiency and effectiveness of threshing and separation processes in harvesting machinery, particularly in the context of crops with grains that need to be separated from the plant material. It is one of several mechanisms used in combine harvesters to ensure a clean and efficient harvest.
2	Machinery with Straw Walker Mechanism	The straw walker mechanism is a critical component in many combine harvesters, which are used for harvesting crops like wheat, barley, and other small grains. The straw walker mechanism helps separate the grain from the straw and chaff as part of the threshing and separation process. This technology typically involves a series of oscillating, grid-like slats or walkers that move back and forth to gently convey the straw and chaff while allowing the separated grain to fall through to be collected. It plays a crucial role in separating and cleaning the harvested crop, ensuring that only the valuable grains are collected while the straw and chaff are directed out of the machine.
3	Crop Planting Machine	Crop planting machinery, also known as planters or seeders, is a fundamental component of modern agriculture. These machines are designed to automate the process of sowing seeds with precision, ensuring consistent spacing and depth. Its adaptability and technological advancements make it an indispensable tool for contemporary farming practices.
MANUFACTURING AND TECHNOLOGY		
4	Portable Laser Welding Machine	Laser welding technology offers precise and efficient means of joining materials, which is particularly valuable for MSMEs involved in manufacturing, metalwork, and fabrication processes. The ability to create strong and high-quality welds with minimal heat-affected zones not only enhances product durability but also reduces material waste. Additionally, laser welding machines can improve production speed, lower operational costs, and require less post-welding cleanup, making them a cost-effective investment for MSMEs aiming to enhance their manufacturing capabilities, product quality, and overall competitiveness in the market.

5	Solar Mobile Generator	The requirement for a solar mobile generator is crucial in various applications, particularly in scenarios where portable, renewable power sources are needed. This technology is valuable for off-grid and remote locations, emergency situations, outdoor events, and mobile power needs. Its key features include a compact design with integrated solar panels, energy storage capabilities, and inverters, which enable the conversion of solar energy into electricity for charging devices, running appliances, and powering essential equipment. This innovative solution offers independence from conventional energy sources, making it an essential choice for both environmentally-conscious consumers and businesses with a need for portable, renewable energy solutions.
6	Automatic Laser Cutting Machine	These machines enable MSMEs to enhance their production capabilities by delivering accurate, clean, and rapid cutting of various materials. With automation features, these laser-cutting machines can optimize workflow, reduce labor costs, and minimize material wastage, making them a cost-effective investment. They offer the flexibility to work on diverse designs and materials, ultimately leading to improved product quality and reduced production lead times.
7	Automated Digital Portable Radiology Machine	The requirement for automated digital portable radiology machines holds immense importance in manufacturing by ensuring the quality, safety, and efficiency of production processes. Through non-destructive testing, these machines detect defects and irregularities in materials and products, safeguarding against substandard components and potential hazards. Early defect identification allows for timely corrective actions, reducing rework and waste. Radiology machines also aid in product development by identifying design flaws before production, contributing to cost savings and overall product quality. Their role in maintaining safety, quality, and efficiency makes them indispensable in modern manufacturing practices.
8	Portable Ultrasonic Testers	MSMEs often operate in industries with stringent quality standards and safety regulations. Portable ultrasonic testers enable non-destructive testing, allowing for early defect detection and quality assurance. They enhance efficiency by reducing the need for rework and minimizing material waste, ultimately contributing to cost savings and improved competitiveness. Their adaptability to various applications, from inspecting welds and metal components to assessing the condition of concrete structures, makes them essential tools for MSMEs in diverse sectors, helping to maintain structural integrity, compliance, and the overall success of their operations.
9	Automatic Feeder for the Plastic Industry	Automatic feeders ensure a continuous, controlled supply of raw materials, such as plastic resins, into the production line. By eliminating the need for manual material handling and monitoring,

		they reduce labour costs, enhance safety, and minimize the risk of material contamination. This technology ensures consistent material flow and uniform mixing, contributing to product quality and reducing waste. Furthermore, automatic feeders support precision and flexibility in recipe management, making them versatile tools for adapting to varying production needs and minimizing production downtime. They are instrumental in streamlining plastic processing, enhancing productivity, and maintaining a competitive edge in the dynamic plastic industry.
10	CNC Granite Cutter for MSMEs	In the stone and construction sectors, the requirement for a CNC granite cutter is indispensable. These machines offer a precise and efficient solution for cutting and shaping granite, a vital material in various applications. They enable MSMEs to achieve high levels of accuracy, reduce material wastage, and enhance productivity. CNC granite cutters also bring versatility, allowing for customized designs and patterns, which is often essential for meeting specific customer demands. By investing in this technology, MSMEs can streamline their operations, improve product quality, and maintain a competitive edge in the construction and stone-related industries.
11	Advanced Die Manufacturing Machine	The requirement for advanced die manufacturing methods is paramount in the industry for precision, efficiency, and competitiveness. These methods, such as CNC machining and 3D printing, deliver high-precision dies, reducing lead times and material waste. Customization is crucial for unique components, and cost reduction is vital for overall efficiency. Furthermore, innovation in die manufacturing supports the development of improved products and ensures a competitive edge in today's fast-paced industrial landscape.
FERROALLOY MANUFACTURING INDUSTRY		
12	GCP Dust Issue - Binding GCP dust into pellets or lumps for reuse in furnaces	The requirement is to bind the GCP dust collected from the Gas Cleaning Plant (GCP) into pellets or lumps for reuse in the process area, specifically in the furnaces.
ORGANIC COMPANY		
13	Secure Packaging of Glass Bottles	Solution for Secure packaging of glass bottles for export to guarantee their safety.
14	A2 Nutrition Testing in Ghee	Testing the ghee for the presence of A2 nutrition requires specific tests.
15	Barcode Implementation for Product Details	Want to Implement a barcode system where it contains detailed information about the product.

16	Wax-Free Biodegradable Packaging Solutions	Biodegradable packaging solutions that are free from wax coating, as wax-coated packages are not permissible for organic product certification.
17	Maintaining the Shape of Organic Jaggery	A solution to maintain the shape of organic jaggery at temperatures ranging from 55 to 60 degrees Celsius without adding preservatives, ensuring it retains its form even in high heat conditions.
SEAFOOD INDUSTRY		
18	Saltwater Issue - Corrosion and rusting of equipment	The company is experiencing significant issues with saltwater in its processing plant, which is causing corrosion and rusting of equipment. Despite having installed both a softener plant and a Reverse Osmosis (RO) plant, these measures have not been effective. The primary objective is to meet the standards set by IS 10500 and IS 4251 to ensure that production processes remain uncompromised.
19	Difficulty in Peeling Shrimp - Developing a food-grade chemical to dissolve collagen protein	There is a need to develop a food-grade chemical that can dissolve the collagen protein which firmly binds the shell and meat, making the peeling process more efficient.
20	Post-Lethality Recontamination in RTE Products - Controlling biofilm formation on equipment	The company requires a solution to control biofilm formation on equipment, which leads to post-lethality recontamination.
21	Lack of Shelf-Life Study on Frozen Shrimp	In India Currently, no regulatory authority has conducted an in-depth shelf-life study on frozen shrimp. While CIFT Cochin has initiated a shelf-life study on frozen fish, there is a need for a comprehensive shelf-life study on IQF frozen raw/cooked shrimp.
22	Prevention of Black Spot Formation in Shrimp - Seeking a substitute for sodium metabisulphite	The industry is seeking a substitute for sodium metabisulphite to prevent black spot formation. Developed countries have created 4-hexyl resorcinol, but it is not commercially available in the Indian market.
23	Nanotechnology in Primary Packaging Material	Exploration of nanotechnology applications in primary packaging materials is needed to enhance product quality and shelf life.

24	Value-Added Seafoods and Testing Laboratory for Aquaculture Industry	Want innovations in value-added seafood products. Establish standardized testing laboratories.
25	Microbial Testing Centre for the Seafood Industry	They requested to establish a microbial load testing centre specifically for seafood.
PETROCHEMICAL INDUSTRY		
26	Zero Liquid Discharge Issue in Effluent Treatment	To develop a solution for achieving Zero Liquid Discharge (ZLD) in the effluent treatment process.
REFINERY INDUSTRY		
27	Smart Wearable Technology for CISF Security	Smart wearable technology for CISF security staff to monitor their positioning around the plant.
28	Alternative to Walkie-Talkies	An alternate device for walkie-talkies to facilitate internal plant communication.
DAIRY INDUSTRY		
29	Replacing Metal Trays with Plastic Crates	Metal trays to be replaced with plastic crates which will help in weight reduction, and transport and should also withstand autoclaving.
30	Preserving Raw Milk Quality	Quality of raw milk to be preserved without using electricity and chemicals.
LPG PRODUCTION PLANT		
31	Industry Multiple Issues:	<ul style="list-style-type: none"> • Marshy soil issue • Real-time Man count • Technology to track the Energy consumption in the plant • Tracking of water consumption in the plant • Building green belt area • Water treatment plant suggestions • Inventory management system (Visual based)
YARN PRODUCTION PLANT		
32	Pollution Mitigation - Adopting advanced emission reduction technologies	The industry is facing pollution issues through chimneys; the problem primarily stems from the back filter system utilized in the boilers responsible for generating steam used in the dyeing process of threads. These back filters are used to ease emissions and ensure that the released gases are within acceptable environmental standards. However, it appears that the current filters installed in the boilers are not effectively reducing emissions. The ineffective back filters in

		their steam boilers are a serious concern that requires immediate attention. They are looking to adopt advanced emission reduction technologies to address this environmental challenge.
AGRICULTURE AND FOOD TECHNOLOGY		
33	Soil Productivity Detection Technology (AI or IoT-based)	A technology to detect soil productivity, particularly those based on Artificial Intelligence (AI) or the Internet of Things (IoT), offers a comprehensive solution for assessing and optimizing soil conditions. This technology would revolutionize agriculture by offering accurate and data-driven insights into soil conditions.
34	Utilization of Bottom Ash and Fly Ash	The waste management process produces residual materials which consist of fly ash, and bottom ash. The client is seeking suggestions for the utilization of fly ash and bottom ash in alternative applications, such as road construction or brick manufacturing.
35	Technology to Increase the Shelf-Life of Vegetables and Fruits	Extending the shelf life of fruits and vegetables has the potential to reduce food waste and improve food security. Hence, the development of technology to prolong the shelf life of vegetables would be of great benefit.
36	Low-Cost Technology for Pesticide-Free Products	Detecting the specific kind of pesticide used by a farmer during vegetable cultivation is a complex task without proper laboratory testing and analysis. Hence, an affordable technology that could identify the presence of commonly used pesticides would be helpful.
37	Soil pH Improvement Technique	Increasing the pH of the soil has an impact on the nutrients available to the plants. Research in this area can help identify the optimal pH ranges for different crops and the associated nutrient availability.