

<i>Latest Mechanical Engineering Technologies available for Commercialization</i>	
1	<b>Small Tractor- Krishi Shakti</b> - Small, compact and easily maneuverable tractors for farming & Transportation.
2	<b>Pneumatic Precision Planter</b> - Direct planting/seeding of small/irregular vegetable seeds
3	<b>Inter-Row Rotary Cultivator</b> - Intercultural operations in wide row crops like vegetables, sugarcane, maize, cotton, soybean, peas, grams etc.
4	<b>Offset Rotavator for Orchards</b> - Mechanization of orchards to do farm operations like tilling under tree canopy, inter-culture etc
5	<b>Cotton Picking Head</b> - Cotton can be directly picked using spindle type cotton picker head either using tractor or self-propelled machine
6	<b>Programmable Irrigation Scheduler</b> - Automatic Irrigation scheduler along with pump operation. Irrigation Controller for small and marginal farmers. 8 Stations with Pump Operation Greenhouse / Open Field / Orchard
7	<b>Cabinet dryer for ginger and turmeric</b> - Drying of freshly harvested ginger and turmeric to reduce their moisture content and thereby preventing the loss in quality and quantity of cash-crops during storage
8	<b>Rotary drum washer for ginger and turmeric</b> - Continuous hopper-fed washing of freshly harvested ginger and turmeric
9	<b>Fluidized Bed Dryer for Agro Crops</b> - For drying in a safe desired level, storage & further processing of different oilseeds
10	<b>Coconut Dehusking Machine</b> - This improved manual and electric motor operated deshushing devices have been for user to dehusk coconuts satisfactorily without damage.
11	<b>Autonomous Underwater Vehicle operational upto 150 m</b> - Underwater inspection with camera, surveying, seabed mapping, oceanographic data collection etc.
12	<b>Sub-Terrain Robot</b> - The Sub-terrain Robot has strong potential for application in partly or fully water logged mine tunnels in the underground coal mines for locating trapped miners, mapping of water logged mine tunnels, locating sunken machinery etc. It can also be applied to detect hazardous gases with specific sensor suite.
13	<b>Remotely Operated Vehicle (ROV):500m Depth</b> - Underwater inspection with camera, surveying, seabed mapping, oceanographic data collection etc.
14	<b>Autonomous Intelligent Robotic Wheel Chair- Advanced or High end model</b> - Fully computer controlled indoor personal mobility device for physically challenged persons with various levels of inability. Voice based and intelligent operational mode improved operational safety while riding/ operating.
15	<b>Autonomous Intelligent Robotic Wheel Chair</b> - Low end low cost model - Personal mobility vehicle for physically challenged persons with various levels of disability as well as aged and ill persons
16	<b>All Terrain Mobile Robot</b> - Primarily can be used for autonomous surveillance.
17	Tele-operated Rotary Wing Flying Robot (RWFR) - This activity has its aim in the study of aerial robotics with rotarywinged flying robots (RWFR) for its flight capabilities for high fidelity detection, location and tracking of targets required for inspection, monitoring and aerial survey.
18	<b>Serpentine Robot</b> - Primarily can be used for autonomous surveillance
19	<b>Outdoor Mobile Robot</b> - Remote surveillance and exploration in rough outdoor terrains
20	<b>Vision Guided Mobile Robot</b> - Remote surveillance and exploration in smooth indoor terrains
21	<b>Solar Power Tree</b> - Solar Power Tree is the perfect solution to the question of availability of the land in the future for generating solar power. It take up only 1% of space consumed by conventional systems
22	<b>Solar Artifact</b> - Similar to solar tree, solar artifacts can be installed in various places to provide electrical power but these are having better aesthetic view for beautification of the place where these will be installed

23	<b>Improved Iron Removal Plant</b> - Removal of iron from water containing ferrous salt is done by oxidation accompanied by the dissolved oxygen introduced into the water through aeration and precipitation.
24	<b>Domestic type filtration unit for de-fluoridation of drinking water</b> - Domestic type absorption based multi-stage water filtration unit.
25	<b>Water Filter for Arsenic removal</b> - An affordable, portable, power free purifier and detection kit for producing arsenic safe water.
26	<b>Plasma disposal of Plastic Waste and Generation of Syngas for Power Generation</b> - Synthesis Gas, is a fuel gas mixture consisting primarily of hydrogen, carbon monoxide, Hydrocarbons for power generation
27	<b>Smart card operated Prepaid Energy Meter</b> - The smart card operated prepaid energy meter uses embedded technology to dispatch electricity at the consumers end and can reduce problem associated with billing for consumer particularly living in isolated rural area where electricity is generated and distributed solar mini grid.
28	<b>Pluggable Energy Meter for E-Rickshaw</b> - Enables switching the battery charger as well as metering of power and energy consumption through smart phone and payment against charging through an app.
29	<b>Semi Continuous Biodiesel Plant</b> - Especially in rural areas and for other areas also for converting any oil to Biodiesel irrespective of its FFA content to supplement convention diesel and Micro Energy Centre in remote areas.
30	<b>Biogas Plant Operated on Deoiled Cake of Jatropha Seeds</b> - Especially in rural areas and for other areas also to produce biogas which can be used for directly cooking purpose and generating electricity and the spent slurry is excellent organic manure.
31	<b>Metal Detector</b> - Detecting ferrous & non-ferrous metals buried under loose soil/muddy / turbid water/ hidden in walls/roofs/ pillars (defense, state police and other security agencies).
32	<b>Screen-printed electrodes (SPEs)</b> - The electrode is developed using a flexible polyester film substrate support material to make a highly sensitive electromechanical sensor
33	<b>Medical Device(Colposcope)</b> - Instrument for medical diagnosis
34	<b>Low Power Vibration Energy Harvester</b> - Harvesting electrical energy from vibration rich environment, under the umbrella of green energy and application in wireless sensor network systems to enhance the lifetime of battery
35	<b>Five Axis Micro Milling Machine</b> - Use to cutting highly accurate miniaturized components with dimensions ranging from few hundred microns to few millimeters.
36	<b>Mobile Bridge Inspection Unit</b> - Device for the inspection of the Road bridges.
37	<b>Automatic mechanical device for handling the heavy hot items, like forged or cast components</b> - It is an automatic mechanical gripper, which can handle heavy solid industrial components within a work shop.
38	<b>Reconfigurable Micro Factory</b> - Capable of manufacturing micrometer (~100 - 500µm) scale features such as holes, channels etc. over range of materials. These micro scale patterns have wider applications in sensors, consumer electronics, biomedical devices, etc.
39	<b>High Speed Spindle for micro milling and drilling operations</b> - Successfully running speed of maximum 2.75 lac rpm. However, system can run stably in the range of 60-70k
40	<b>Ceramic Shelling Process Technology</b> - This Ceramic Shelling is used for conventional Investment Casting as well as it may be designed for exotic metals.
41	<b>Process Technology for Manufacturing of Engineering Components from Austempered Ductile Iron (ADI)</b> - Austempered Ductile Iron (ADI) can be used for manufacturing of wide range of components in Automobile Sector, Mining machinery, Agricultural machinery and implements, Construction equipment
42	<b>Metal injection molding</b> - Hybrid manufacturing process for manufacturing of small and complex shape components out of metals in large quantity which are otherwise difficult to process through the conventional manufacturing route
43	<b>Nickel wick for loop heat pipe</b> - A manufacturing process following inverse of metal injection moulding where highly porous structured (>50%) out of nickel powder having

	capillary pore diameter around 2.6 micron with complex shape can be manufactured in large quantities.
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