

List of Research Equipment

Department of Mechanical Engineering

Department Name: Mechanical Engineering
Equipment Name: Rotary fixture for FSW of pipes
Specifications: Drive unit with variable speed control, specimen size: 100mm (L) and 50mm (ID)
Functions: This is an attachment to VMC which helps in performing FSW process for joining two pipes. The fabricated fixture facilitates joining process by delivering rotary motion (weld speed) at variable speeds.
Photograph: 

Department Name: Mechanical Engineering

Equipment Name: Upgradation of existing Kirloskar Diesel Engine into Dual fuel Engine - (CRDI open ECU with secondary injection at Manifold System)

Specifications:

Engine Make & Model	Kirloskar TV-1 & Apex 240 PE
Rated Power and Speed	3.5 kW and 1500 rpm
(Bore x Stroke) & Capacity	(87.5 mm x 110 mm) & 661.45 cm ³
No. of Cylinder & Stroke	Single-cylinder vertical-type, 4-stroke
Type of Cooling & Loading	Water Cooling & Eddy Current Loading
Main Injection	CRDI with open ECU / Direct Injection
Manifold Injection	Port Injection with open ECU
Main & Manifold Injection Pr.	200-600 bar & 3-6 bar
Compression Ratio	12:1 -17.5:1 (Adjustable)
ECU	Nira i7r (Make) – open ECU
Software's	Medhaavi & IC Engine Soft 9.0

Functions: To facilitate dual-fuel mode operation, a port fuel injection system in an inlet manifold is added and its injection pressure is maintained at 3-5 bar with open ECU (Nira i7 make). The diesel/biodiesel is injected into combustion chamber with help of CRDI system with injection pressure around up to 600 bar. In addition, the injection timing and injection duration of the diesel and alcohol fuels are controlled precisely by the ECU.

Photograph:



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Research equipment





Specifications: -

Functions: The following equipment used for the research and consultancy purpose

Photograph:

Hydraulic Specimen Mounting Press	Thermal Imager	Hot Plate Magnetic Stirrer	Manual Hydraulic Mini Hot Press
 A blue hydraulic specimen mounting press with a digital display and a specimen mounted on top. A sign in the background lists details: HYDRAULIC SPECIMEN MOUNTING PRESS, Quantity: 01 No., Supplier: S.R. Technologies, Chennai, Cost in Rupees: 25,000.00, YVP: 2015.	 A yellow thermal imager device with a lens and a display screen, resting on a wooden surface.	 A black hot plate magnetic stirrer with a digital display showing 0240 and a magnetic stirrer bar on top.	 A manual hydraulic mini hot press with a blue frame and a white base, used for pressing samples.
PU Probe Sensor Kit	Electrospinning Unit	I-V Source Meter	Hand Operated Hydraulic Press (10 Tonne)
 A PU probe sensor kit with a black case, a probe, and various cables.	 An electrospinning unit with a blue control panel and a glass chamber, labeled ELECTROSPINNING UNIT VPD30C.	 An I-V source meter with a digital display and several control buttons.	 A hand-operated hydraulic press with a blue sign listing details: 10TON HYDRAULIC PRESS, Quantity: 1 No., Model: MHP-42, Supplier: Meters Scientific Instruments Pvt. Ltd., YVP: 2015, Cost in Rupees: 35,000.
Solar Power Meter	Digital Weigh Balance	Spin Coating Unit	Hot Air Oven
 A solar power meter with a digital display and a probe, used for measuring solar radiation.	 A digital weigh balance with a stainless steel weighing pan and a digital display.	 A spin coating unit with a red circular chamber and a digital display, used for coating substrates.	 A hot air oven with a digital display and a door, used for drying samples.

Universal Testing Machine	Impact Testing Machine	Compression Moulding Machine	Abrasive cutting Machine
			

Sample Cutting Machine	Auto Polishing Machine	Inverted Metallurgical Microscope	Vickers Micro Hardness Tester
			

Electronic Tensometer	Muffle Furnace
