Welding Research Lab

- Welding Research Lab : Received R & D funding of Rs 1.5 Cr+, from various funding agencies like DST(Young Scientist-Twice), ISRO, DAE, DRDO, BRFST (3 + 3) for development of the welding research lab.

- So far 25 students have completed their M.Tech dissertation & 6 PhD students have been have produced using facilities created under above funded projects.

National Collaboration

- Naval Material Research Lab, Thane, DRDO: Friction Stir Welding of P91 and LAMF steels
- Indian Air Force, Gandhingar: FSW OF STRINGER TO WING PANEL OF SUKHOI-30 MKI AIRCRAFT.
- Magod Fusion Technologies Pvt. Ltd. (MFTPL), Pune Development of flux assisted Laser Beam Welding process
- Friction Welding Technologies Pvt. Ltd, Pune -Super plasticity effect in friction welding blanks of cutting tools –
- Roop Telsonic Ultrasonix Ltd., Gandhinagar welding of dissimilar/similar metals for various surface conditions –
- ITER INDIA : Dissimilar weld joint of Copper to SS through Ni/Inconel transition using Orbital TIG technique
- INOXCVA, Baroda
- Kalpataru Power Transmission Limited, Gandhinagar
- Sahajanand Laser, Gandhinagar

Successfully Completed R & D Projects

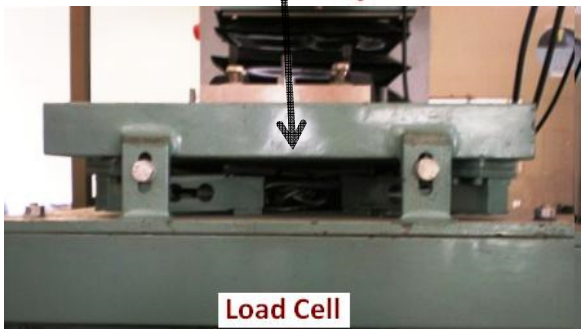
- Automatic Narrow Groove Fast Track Scheme for Young Scientist, DST, New Delhi, RS. 11,34,000
- Weldability aspects of Low Activation Ferritic-Martensitic Steel Welded by Activated Flux Tungsten Inert Gas Welding, BRFST, RS. 36,26,500
- Gas Metal Arc Welding with Metal Core Arc Wire Fast Track Scheme for Young Scientist, DST, New Delhi RS. 15,18,000
- Friction Stir Welding of Al Alloys Indian Space Research Organization, RS. 13,96,000
- Friction Stir Welding of Stainless Steel to Stainless steel and SS to Copper BRFST, RS. 30,15,000
- Dissimilar material joining of SS316LN (UNS S31653) and XM-19 (UNS S20910) Stainless steel joints. BRFST ,Rs. 14,00,000

Ongoing R & D Projects

- Development of full penetration CuOF to CuOF welding by GTAW for Neutral Beam Accelerator grid base plate to hydraulic piping connection BRNS,Rs 32,49,800
- Development of dissimilar friction welding joint of higher pipe size (bigger than 1 inch pipe) for Al-SS and SS-Cu materials. BRNS, 26,59,300
- Development of Aluminium-Stainless Steel transition pipe joints for cryogenic applications using CMT (Cold Metal Transfer) Process. BRNS, 16,89,750
- Study of Metallurgical Feasibility of friction stir weld of wing panel to the wind stringer Air craft applications. DRDO, Rs4,00,481

R & D Facilities available at Welding Research Lab

Experimental Setup- FSW under BRFST

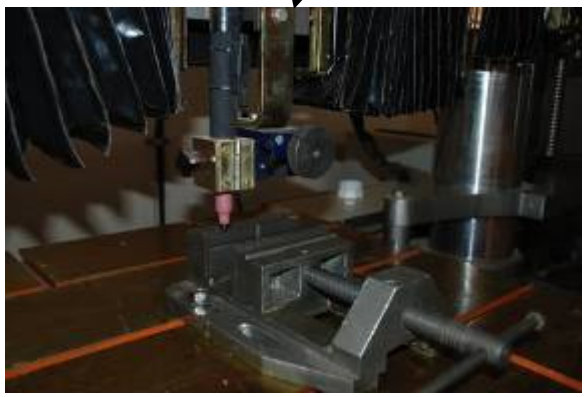


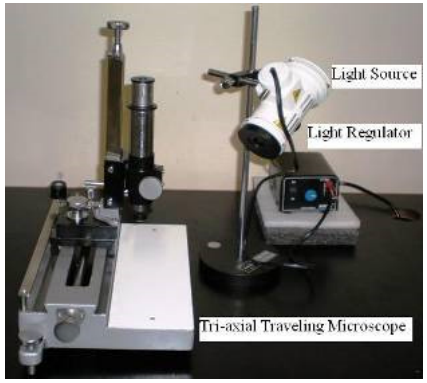
Setup available at PDPU,INDIA under sponsor project of BRFST (NFP/MAT/A 10/04)

Photograph of experimental setup- GTAW under BRFST

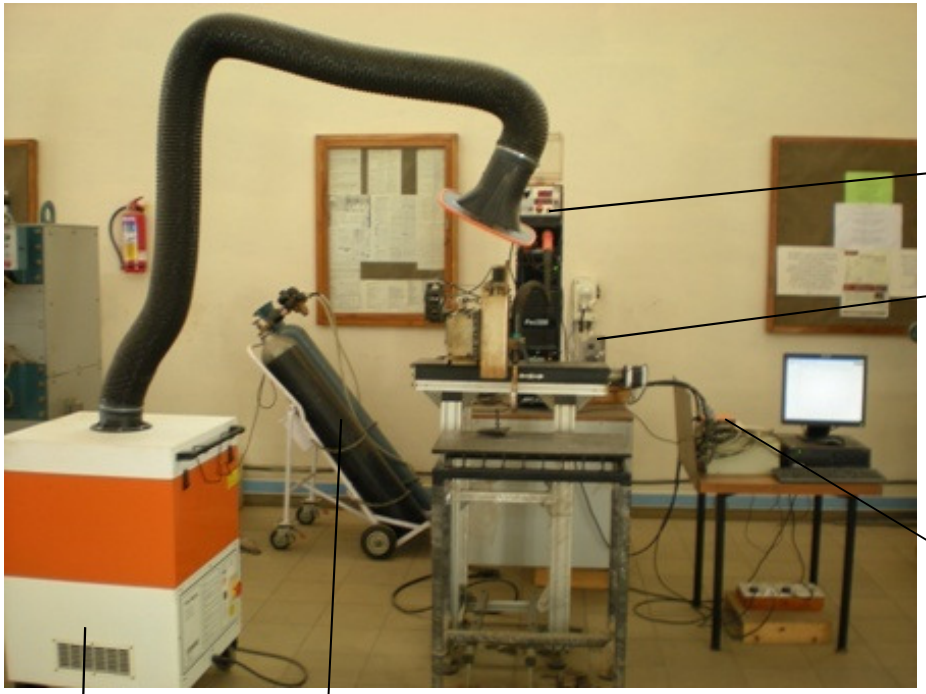
Gas Cylinders

Special purpose machine





Photograph of Experimental Setup- GMAW

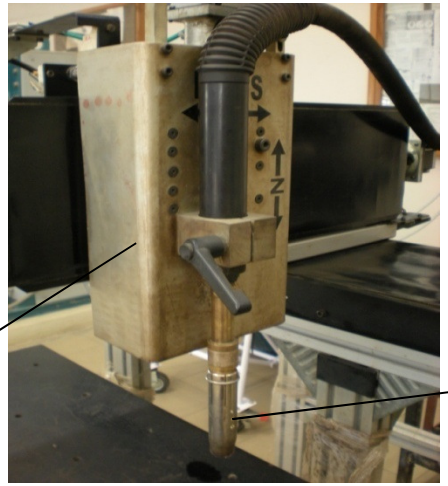


Ar/CO_2
Gas Mixer

Power Source Equipment

Fume
Extractor

Standard
Gas
Cylinders



SPM
Head

Welding
Torch

Data Monitoring System

Above setup available at PDPU under sponsored project of DST, New Delhi.

Friction stir welding

3 Axis Automatic Vertical milling machine

Specification of Milling Machine	
Rotational Speed	35 – 1500 (RPM)
Welding Speed	20 – 800 (MM/MIN)
Motor Power	3.0 H.P
Tilt Angle	-50° TO 50°

sponsored project of ISRO (E33011/60/2010-V)

Hot Wire GTAW under BRNS project

Advance SPM under BRNS project