



# IIW-India – PDEU Welding Research & Development Centre (IPWRDC)



The Indian Institute of Welding (IIW-India) (<https://iiwindia.com>) and Pandit Deendayal Energy University (PDEU), Gandhinagar (<http://www.pdeu.ac.in>) signed MoU on 17th of August 2023 @ PDEU, to establish IIW-India – PDEU Welding Research & Development Centre (IPWRDC).

The purpose of this Centre is:

- To carry out research in the field of welding technology/materials.
- Provide facility for research work for students of B.Tech/M.Tech/PhD level.
- Support the industry in solving welding-related problems.
- Better industry and academia interactions.
- Develop new welding processes and consumables for new grades of materials.

**Research areas:** Additive manufacturing using welding processes, welding of additively manufactured components. Advanced Welding Processes include – Friction Welding of dissimilar metal pipe, Friction Stir Welding of similar and dissimilar metals, Friction stir processing for super plasticity and surface composites, Friction surfacing, Narrow Gap Welding- using solid, flux cored and metal cored wire; Hybrid Welding; Activated Flux GTAW/GMAW; Resistance Welding- spot. Ultrasonic welding. Welding of hybrid joints (metal-plastics).

**Welding Research Centre facilities:** Welding Research Centre developed from funding received so far from various funding agencies like ISRO, DRDO, DAE, (BRFST, BRNS) & DST in the area of advanced welding processes and internal funding from the University. Additionally for testing and characterization of welds a metallurgy lab is also available, which is completely funded by the university.

## List of Major Equipment available:

### Fusion Welding Processes

- GMAW with Metal cored and flux cored wire with CNC controller
- GTAW with cold and hot wire with oscillator
- A-TIG welding, FB & FZ variants
- Resistance welding: Spot, projection, Butt welding
- Wire arc additive manufacturing
- Plasma and gas-cutting operations
- Laser Welding, Cutting and Cleaning

### Solid-state welding processes

- Friction Welding (FW), Friction Stir Welding (FSW)
- Friction surfacing, Ultrasonic Welding of Metal and Plastics (UW)

### Testing and characterization

- Metallurgical microscope, Metallography
- Micro hardness, Pin on disk wear testing
- Dry and slurry abrasion Testing, Hot tensile testing

The publication list is available on the following link:

[https://scholar.google.com/citations?hl=en&user=GvyB\\_igAAAAJ](https://scholar.google.com/citations?hl=en&user=GvyB_igAAAAJ)

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