

Centre of Excellence in Joining Technology (COEJT)

Faculty In charge:

Dr. B.V.R.RAVIKUMAR

Ph.D. MIE, MIWS, MSAQR, MIST

Professor



Year of Establishment: 2013 in Room No. : S1-1

OBJECTIVES

The Centre of Excellence in Joining Technology (COEJT) was established in the year 2013 with the financial assistance of All India Council for Technical Education (AICTE) under Research Promotion Scheme (RPS) and with the support of VNRVJIET.

Objectives of COEJT:

- ❖ To plan and execute R & D programs for interested faculty and students in the area of Materials Joining.
- ❖ To provide an effective linkage between the industry and academic institutions to work on Sponsored, Research and Consultancy activities.
- ❖ To offer the state-of-the-art R & D facilities in Materials Joining for Intramural Research & Development and training to PG and Ph. D. students.
- ❖ To provide necessary expertise for undertaking R & D projects in Materials joining.
- ❖ To plan, coordinate and execute integrated R & D programs, involving interested institutions, R & D organizations and industries at National and International level.



Funded Research Projects Carried out in COEJT

S.No.	Project Title	Funding Agency	File No.	Duration	Amount Sanctioned Rs.	Principal Investigator	Status
1	Experimental Investigation on role of Hybrid tool Pin profile on Microstructure and Mechanical Properties of Friction Stir Welded dissimilar AA6082-AA5083 Aluminum Alloy	AICTE	AICTE-File No. 8-112/FDC/RPS (POLICY-1) /2019-20 dated 14-08-2020.	3 Years (2020-2023)	7,84,314/-	Dr. B.V.R Ravi Kumar	On going
2	Comparative Study of weld characteristics of IS:65032A Aluminum Alloy by two Processes – FSW and GTAW	DRDO (CARS)	ASL/31/2013/4051/ CARS/47 18 th June 2013	2 Years (2013-2015)	9,91,100/-	Dr. B.V.R Ravi Kumar Co-PI: Dr. M.S.S.Rao	Completed
3	Experimental Study of Influences of Pulsed and Non-Pulsed Current Gas Tungsten Arc Welding on 6082 Aluminum Alloy Weldments	AICTE	20/AICTE/RIFD/RPS(POLICY-III)54/2012-13 25 th Feb2013	3 Years (2013-2016)	15,70,000/-	Dr. B.V.R Ravi Kumar	Completed

Ph.D. work Carried out in COEJT

S.No.	Name of the scholar	University	Title	Year of Registration	Name of the supervisor	Status
1	A Raveendra (H.T.No.0903PH1516)	JNTUH- Hyderabad	Comparative Study of Welding Characteristics of Aluminum Alloy (5052) and Alloy Steel EN19 using TIG Welding	2009	Dr. B.V.R Ravi Kumar	Degree Awarded 2018
2	M.S.Srinivasa Rao (H.T.No.1003PH1543)	JNTUH- Hyderabad	Experimental Study of Weld Characteristics during Friction Stir Welding (FSW) of Aluminum alloy	2010	Dr. B.V.R Ravi Kumar	Degree Awarded 2019
3	K. Nageswera Rao (H.T.No.1103PH1536)	JNTUH- Hyderabad	Experimental Investigation to study the weld characteristics of dissimilar aluminum alloy and alloy steel using GTAW	2011	Dr. B.V.R Ravi Kumar	Degree Awarded 2023
4	S.Veerendra Prasad (H.T.No.14022P0305)	JNTUK - Kakinada	Characterization of weld Parameters in welding of Aluminum Allos by using Friction Stir Welding	2014	Dr. B.V.R Ravi Kumar	In Progress

M.Tech Projects

S. No.	Project Title
1	Investigating FSW process parameters on the characteristics of AA5083 Aluminum Alloy
2	Influence of tool pin profile and Welding parameters on Tensile and Microstructural properties of AA 6082-T6 during FSW.
3	Experimental Evaluation of weld characteristics of AA2014-T6 Aluminum Alloy using FSW and GTAW processes.
4	Experimental Investigation into the effect of Gas Tungsten Arc welding on Ti-6Al-4V
5	Experimental investigation of effect of filler wires and currents on dissimilar Aluminum Alloy weldments during GTAW
6	Experimental study the effect of filler wires on weld characteristics of 5083 Aluminum alloy during the Gas Tungsten Arc Welding (GTAW) Process
7	Optimization of Process parameters in Friction Stir welding

B.Tech Projects

S.No.	Project Title
1	Experimental study on effect of tool tilt angle on Mechanical Properties of AA6082 Aluminum alloy weldments during FSW process
2	Experimental study on influence of process parameters and tool Geometry on AA6082 during FSW process
3	Determination of Optimal FSW tool pin profile according to the influence of welding process parameters
4	Experimental investigation of FSW of AA7075 – T651
5	Experimental Study on Friction Stir Welding using Conventional & Hybrid Tool Pin Profiles and Predictions based on Machine Learning
6	Experimental Investigation on role of Hybrid tool Pin profile on Microstructure and Mechanical Properties of Friction Stir Welded AA6082 Aluminum Alloy
7	Experimental investigation on role of hybrid tool pin profile on microstructure and Mechanical properties of friction stir welded AA5083 Aluminum Alloy
8	Effect of Rotation Speed on AA5083 Weld characteristics in Friction Stir Welding (FSW) using Concave Taper Threaded Pin

Facilities Available: 1. Lincoln Electric PrecisionTIG 375 Welding Machine (Rs. 6,56,825/-)

2. Microscope with Image Analyzer (Rs. 2,91,975/-)

3. Vicker's Micro Hardness Tester (Rs. 4,69,450/-)

4. Ultrasonic Flaw Detector (Rs. 2,23,938/-)

5. Computer and Printer (Rs. 45,300/-)

6. Friction Stir Welding Machine (Rs. 13,60,000/-)

S.No.	Name of the Equipment	Cost, Rs.	Illustration
1	Friction Stir Welding Machine	13,60,000 (2022)	 <p>The image shows a Friction Stir Welding Machine (FSW B10-300) in a laboratory setting. The machine is a large, industrial-grade unit with a vertical spindle and a motor. It is mounted on a black metal frame. Several green identification tags are attached to the machine. One tag reads 'Dr. B. V. R. RAVI KUMAR, PROFESSOR & PRINCIPAL INVESTIGATOR'. Another tag reads 'Welding Machine, Model: FSW B10-300, Make: R. V. Machine Tools, Coimbatore, Date of Purchase: 12-03-2022, Cost: Rs. 13,60,000/-'. A third tag on the front of the machine reads 'Friction Stir Welding Machine, Funded by AICTE-RPS & VNR VJIEI'. The machine is situated on a floor with yellow safety markings.</p> <p style="text-align: center;">FSW B10-300</p>
2	Lincoln Electric PrecisionTIG 375 Welding Machine	6,56,825 (2013)	 <p>The image shows a Lincoln Electric PrecisionTIG 375 Welding Machine. It is a red and black unit mounted on a black metal frame with four casters. The machine has a control panel on the front with various dials and switches. The Lincoln Electric logo is prominently displayed on the side. The machine is situated in a room with a window in the background.</p>

S.No.	Name of the Equipment	Cost, Rs.	Illustration
3	Microscope with Image Analyzer	2,91,975 (2013)	
4	Vicker's Micro Hardness Tester	4,69,450 (2013)	
5	Ultrasonic Flaw Detector	2,23,938 (2013)	