

**RESEARCH LABORATORIES & CENTRALIZED INSTRUMENTATION FACILITIES**  
**Department of Metallurgical and Materials Engineering, NIT**  
**Tiruchirappalli**

SI No	Name of the Equipment	Name of the Laboratory	Short description of the Equipment (Model, Make Important Details)	Faculty In charge Contact Details
1.	Vacuum Diffusion Bonding Set Up	Metal Forming Laboratory	Designed and fabricated in house	B.Ravisankar 9442505336 0431-2503460
2.	Back Pressure Aided Equal Channel Angular Pressing Facility	Metal Forming Laboratory	Designed and fabricated in house	
3.	Formability Tester	Mechanical Testing laboratory	M/s Jinan Testing Equipment, ChinaGBW200	
4.	Modulus Measurement Unit	Mechanical Testing laboratory	45 MG, M/s Olympus NDT Canada, Quebec	
5.	Fatigue Testing Machine (Flat Plate Bending)	Mechanical Testing laboratory	M/s Darien Electricals, Chennai	
6	DEFORM-3D - Software	Metal Forming Laboratory	Software which can simulate all metal forming processes. Version 10	
6.	Tensile Testing Facility	Powder Metallurgy Lab	Tinus Olsen, UK	Dr. S. Kumaran 0431-2503482
7.	Tensile Testing Facility (Cryo)	Powder Metallurgy Lab	Dak System, India	
8.	Creep Testing Machine	Powder Metallurgy Lab	VB Ceramics, Chennai	
9.	Universal Testing Machine	Powder Metallurgy Lab		
10.	Powder Compaction Press	Powder Metallurgy Lab	Nano Tech, chennai	Dr. S. Kumaran 0431-2503482
11.	Vickers Hardness Tester	Powder Metallurgy Lab	Wilson hardness, China	
12.	Optical Microscope with Image Analyser	Powder Metallurgy Lab	Olympus, Japan	

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13.	Density Analysing Kit	Powder Metallurgy Lab	Shimadzu Japan	Dr. S. Kumaran 0431-2503482
14.	Pin on Disc Set Up	Powder Metallurgy Lab	-	
15.	Slow Speed Cutter	Powder Metallurgy Lab	Scientific, Chennai	
16.	Vacuum Pump (Portable)	Powder Metallurgy Lab	-	
17.	Glove Box	Powder Metallurgy Lab	Aero, Chennai	
18.	High Energy Ball Mill	Powder Metallurgy Lab	Fritsch, Germany	
19.	High Energy Ball Mill	Powder Metallurgy Lab	Restch, Germany	
20.	Pot Mill	Powder Metallurgy Lab	-	
21.	Atomic Absorption Spectroscopy	Powder Metallurgy Lab	Thermofisher, USA	
22.	Pressure Composition Isotherm	Powder Metallurgy Lab	Indigenous designed. Fabricated by VB Ceramics, Chennai	
23.	Electro Chemical Work Station	Powder Metallurgy Lab	Bio logic, France	
24.	Simultaneous Thermal Analyser	Powder Metallurgy Lab	Perkin Elmer, USA.	
25.	Resistance Furnace	Powder Metallurgy Lab	VB Ceramics, Chennai	
26.	Vacuum Furnace	Powder Metallurgy Lab	VB Ceramics, Chennai	
27.	Microwave Furnace	Powder Metallurgy Lab	VB Ceramics, Chennai	Dr. S. Kumaran 0431-2503482
28.	Tube Furnace	Powder Metallurgy Lab	Nano Tech, Chennai	

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29.	Chemical Vapour Deposition	Powder Metallurgy Lab	VB Ceramics, Chennai	Dr. S. Kumaran 0431-2503482
30.	Mini Arc Melter	Powder Metallurgy Lab	VB Ceramics, Chennai	
31.	Magnesium Melting Furnace	Powder Metallurgy Lab	Indigenous designed. Fabricated by VB Ceramics, Chennai	
32.	Spark Plasma Sintering Machine	Powder Metallurgy Lab	Dr. Sinter, Japan	
33.	Seebeck Coefficient and Electrical Resistance System	Powder Metallurgy Lab	Linseis, Germany	
34.	Thermal Conductivity Measurement Unit	Powder Metallurgy Lab	Indigenous designed. Fabricated by VB Ceramics, Chennai	
35.	Disc Polishing Set Up	Powder Metallurgy Lab	-	Dr. S. Kumaran 0431-2503482  Dr. S. Kumaran 0431-2503482
36.	Belt Polishing Set Up	Powder Metallurgy Lab	-	
37.	Cryo Bath	Powder Metallurgy Lab	-	
38.	Mini Atomiser	Powder Metallurgy Lab	Nano Tech, Chennai	
39.	X-Ray Diffraction Unit (XRD)	XRD Lab (OJAS)	Ultima IV, Rigaku, Japan, operated at 40 kV and 30 mA, equipped with an X-ray source emitting CuK alpha radiation	Dr. N. Ramesh Babu 9944932221 0431-2503464
40.	Plasma Electrolytic Oxidation Units	Bio-Materials lab (MME)	DC PEO Units Milman Thin Film Private Limited, Pune	
41.	Contact Angle Goniometer	Bio-Materials lab (MME)	DSA100, KRUS, Germany with automatic liquid dispenser and	

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			monochromatic cold light source	
42.	Corrosion Testing Unit	Bio-Materials lab (MME)	Gill AC from ACM Instruments, UK	Dr. N. Ramesh Babu 9944932221 0431-2503464
43.	Plasma Electrolytic Oxidation Unit	Bio-Materials lab (MME)	AC PEO Unit ARCI Hyderabad	
44.	Optical Profilometer	CCI-MP Optical Profilometer Lab (OJAS)	MPI, Taylor Hobson, UK	
45.	Scratch Testing Unit	Scratch Testing Lab Lab (OJAS)	Revetest Scratch Tester Anton Parr	
46.	FESEM	FESEM Lab lab (OJAS)	GEMINI 300 Carl Zeiss, Germany	
47.	Automated Microstructure Sample Polisher Metallography Kit	Surface Engineering Laboratory	ATM GmBH, Germany	Dr.S.P.Kumaresh babu 9487438564 0431-2503462
48.	3D Diamond Cutter	Surface Engineering Laboratory	ATM GmBH, Germany	
49.	Activated Corrosion Testing Unit	Corrosion Laboratory	Ascott analytical	
50.	Rotary Vacuum Casting Unit	Foundry Laboratory	Swamequip	
51.	Electrolytic Etching & Polishing Unit	Surface Engineering Laboratory	Struers A/S	
52.	Hot Air Jet Erosion Equipment (Sif)	CECASE	Ducom, Bangalore	
53.	Vacuum Melting Furnace (SIF)	Foundry Laboratory	HHV, Bangalore	
54.	Salt Spray Chamber	Corrosion Laboratory	Ascott analytical	
55.	Simultaneous/ Continuous Thermal Analyzer System	Surface Engineering Laboratory	Perkin elmer	

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56.	Versatile Induction Melting Unit	Foundry Laboratory	Inductotherm	
57.	Water Jet Erosion Tester	Surface Engineering Laboratory	Ducom, Bangalore	
58.	Fiction Stir Welding Machine	Advanced Welding Laboratory	M/s Bangalore Integrated Systems Solutions Limited, Bangalore	Dr. S. Muthukumaran 0431-2503468 9442069381
59.	Electrolytic Plasma Processing Unit	Plasma Electrolytic Oxidation Laboratory	1. Ceramic coating can be provided on Al, Mg and Ti metals and alloys 2. Carburizing, Nitriding and Boriding can be performed with aqueous electrolytes	Dr. V. Muthupandi 0431-2503457
60.	Computer Controlled Electrochemical Unit (2 Units)	Plasma Electrolytic Oxidation Laboratory	Model: 890, 1393 Gill AC, ACM Instruments 1. Long term potential measurement, impedance, linear polarization, cyclic sweep and galvanic corrosion studies can be performed.	
61.	Vacuum Arc Melting	Advanced Materials Processing Laboratory (AMPL)	Mansha Vacuum Equipments Pvt. Ltd.	Dr. K. Sivaprasad. 0431-2503466
62.	Computerized Tensile Testing Equipment	Advanced Materials Processing Laboratory (AMPL)	Tinius Olsen made H25KL	
63.	Micro Arc Oxidation Power Source with Ultra Cryobath	Advanced Materials Processing Laboratory (AMPL)	MILMAN-MAO. Southern Scientific-Ultra Cryobath	

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64.	High Energy Ball Mill	Advanced Materials Processing Laboratory (AMPL)	Insmart systems	Dr. K. Sivaprasad. 0431-2503466
65.	Digital Balance with Density Kit	Advanced Materials Processing Laboratory (AMPL)	Radwag AS310/C/2	
66.	Rolling Mill with Ultra Cryostat Circulator	Advanced Materials Processing Laboratory (AMPL)	Southern Scientific	
67.	High Temperature Muffle Furnace	Advanced Materials Processing Laboratory (AMPL)	INDFUR	
68.	Hot Compaction Facility	Advanced Materials Processing Laboratory (AMPL)	INDFUR	
69.	Deep Freezer	Advanced Materials Processing Laboratory (AMPL)	Celfrost	
70.	Pin on Disc Wear Testing Machine	Advanced Materials Processing Laboratory (AMPL)	Friction Tech	