

National Institute of Technology, Tiruchirappalli

R&C Webpage details

Department of Production Engineering

Summary

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SPONSORED RESEARCH PROJECTS

Department wise

Name of the Department: Production Engineering

S.No.	Sanction No:	Title of the project	Principal Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
1.	GTRE/MMG/BMRI/1024/16/CARS/A/16	Hot Air erosion studies on nickel based super alloy turbine blades and suitable surface treatment for erosion prevention for Aero Engine application	Dr. M. Duraiselvam	9.60	GTRE	2016	Completed
2.	GTRE/MMG/BMRI/1303/15/CARS/A/15	Exploratory Studies on Laser Surface Patterning for providing high temperature protective coatings on nickel based super alloy	Dr. M. Duraiselvam	9.45	GTRE	2016	Completed
3.	DRDL/24/08P/12/0513/41812	Laser glazed plasma sprayed functionally graded thermal barrier coatings for high temperature applications	Dr. M. Duraiselvam	9.88	DRDL	2013	Completed
4.	GTRE/GATET/CS12/1214/52/12/006	Structural Integrity evaluation studies on high speed transmission shaft for turbofan engine application	Dr. M. Duraiselvam	49.59	GTRE	2013	Completed
5.	GTRE/MMG/BMRI/1133/12/CARS/A/12	Exploratory studies on localized repair of aero engine blade	Dr. M. Duraiselvam	9.90	GTRE	2012	Completed

S.No.	Sanction No:	Title of the project	Principal Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
		by welding techniques					
6.	22(0533)/10/EMR-II	Electrical discharge alloying of NI-WC metal matrix composite on D-53 die steel for improved wear resistance	Dr. M. Duraiselvam	7.34	CSIR	2010	Completed
7.	SR/FTP/ETA-54/2007	Improvement of wear resistance of Ti-Alloy disc brake rotor through laser surface melting	Dr. M. Duraiselvam	18.90	DST	2008	Completed
8.	SR/FTP/ETA-11/07	Hybrid laser-GMAW Welding of AISI 904L Super Austenitic Stainless Steel	Dr.P.Sathiya	12.24	DST	2007	Completed
9.	22(0596)/12/EMR-II	Experimental Investigation and Metallurgical Analysis of Friction Welded Duplex Stainless Steel Joints	Dr.P.Sathiya	17.98	CSIR	2013	Completed
10.	DRRL/24/08P/12/0511/41802	Study on Effect of Cryo Rolling Precipitation Hardenable AA 2219 Aluminium Alloy of Friction Stir Welding	Dr.P.Sathiya	9.75	DRDL	2013	Completed
11.	NITT/DEAN-ID/SCSP-TSP/RP/01	Experimental Studies and Numerical	Dr.P.Sathiya	43.92	MHRD-SCSP-TSP	2014	Completed

S.No.	Sanction No:	Title of the project	Principal Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
		Simulations on Micro Joining of Shape Memory Alloys (NITINOL)					
12.	SB/EMEQ-168/2014	A Comparative Study on the Weldability of High Strength Aluminium-Magnesium Alloy (AA 5083)	Dr.P.Sathiya	49.09	DST-SERB	2016	On going
13.	SB/FTP/ETA-045/2014	Investigations on E-Waste Flow Assessment and Collection Strategies for a Sustainable and Economic E-Waste Value Chain Design in India	DrS. PrasannaVenkatesan	16.36	SERB	2016	Ongoing
14.	GTRE/MMG/BMR1/118/14/CARS/A/14 Dt. 21 October 2014	Investigation on the properties of direct metal laser fabricated material and its brazing compatibility with nickel based casing	Dr. V.Anandakrishnan	9.90	Gas Turbine Research Establishment	2014	Completed
15.	GTRE/MMG/BMR1/1027/16/CARS/A/16 Dt. 08 June 2016	Exploratory studies on abrasive jet machining of super alloys	Dr. V.Anandakrishnan	9.40	Gas Turbine Research Establishment	2016	Ongoing
16.	SR/S3/MERC-0102/2009	Development of a model for ensuring sustainable product design in automotive organizations	Dr S Vinodh	11.9	DST	2010	Completed (2010-13)

S.No.	Sanction No:	Title of the project	Principal Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
17.	22 (0505)/10/EMR-II	Decision Support System for measuring agile characteristics	Dr S Vinodh	7.5	CSIR	2010	Completed (2010-13)
18.	SB/S3/MMER/0052/2013	Exploration of lean tools/techniques enabling sustainability in automotive organizations	Dr S Vinodh (PI) Dr P Asokan (Co-PI)	15.42	SERB	2014	Completed (2014-17)
19.	-	Formability studies of I.F. Steel sheets	Dr.R.Narayanasamy	8	M/s. Tata Steels Ltd, Jamshedpur.		Completed
20.	-	Formability of Low Nickel Stainless Steel sheets	Dr.R.Narayanasamy	0.5	Salem Steel Plant, Salem.		Completed
21.	-	FLD(Forming Limit Diagram) and Wrinkling behavior of different stainless steels sheet metals	Dr.R.Narayanasamy	2	SALEM STEEL PLANT, SAIL, Salem, India		Completed
22.	-	Hole expansion test on various steel sheets supplied by TATA Steels	Dr.R.Narayanasamy	4	TATA Steels, India		Completed
23.	-	Improvement of surface characteristics of bio-degradable magnesium alloys	Dr.P.Asokan	21.75	DST-SERC		Completed

S.No.	Sanction No:	Title of the project	Principal Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
		through cryogenic machining					
24.	-	Development of Indigenous Capability for Ultra-Precision Electrolytic In-Process Dressing (ELID) Grinding Facility for Micro/Nano Machining	Dr.J.Jerald	15.6	Department of Science and Technology, New Delhi.		Completed
25	ECR/2017/003419	Development of tailor made spur gears for light weight and heavy duty power transmission systems	Dr.Satheeshkumar V	16.775	DST-SERB	2018	Sanctioned

CONSULTANCY PROJECTS**Department wise**

Name of the Department: Production Engineering

S.No.	Title of the consultancy projects	Project Investigator	Research Grant (Lakhs)	Funding Agency	Year of Sanction	Current Status
1.	Development of modified surface for ID fan blades to improve their service life	Dr. M. Duraiselvam	7.03	BHEL	2015	Completed
2.	Development of Thermal Interface Material (TIM) for Thermoelectric Generator (TEG) System	Dr. M. Duraiselvam	15.04	BHEL	2016	Completed
3.	Development of nanocoating to prevent seawater corrosion in boiler tubes	Dr.V.Senthilkumar	14.51	BHEL		Completed
4.	Validation and site demonstration of nanostructured coating for Boiler water wall and super heater tubes	Dr.V.Senthilkumar	7	BHEL		Completed

INTELLECTUAL PROPERTY RIGHTS

PATENTS FILED

Department wise

Name of the Department: Production Engineering

S.No.	Title of the patent	Patent Investigator	Patent filing date	Remarks
1.	Laser Surface Nitrided Titanium Alloy for Light Weight Automobile Disk Brake Rotor Application	Dr. M. Duraiselvam	07-06-2012	CBR No.:6421 Date Filing:07.06.2012

CONFERENCES ORGANIZED

Department wise the Department

S.No.	Title of the conference	Name of the organizers	Venue & Date	Sponsor Details & International/ National
1.	International Conference on Contemporary Design and Analysis of Manufacturing and Industrial Engineering Systems (CDAMIES 2018)	Chairman Dr.-Ing.M.Duraiselvam Asso.Prof/Dept.of Prod Organizing Secretaries Dr. P. Parthiban Asso.Prof/Dept of Prod Dr. S. Vinodh Asso.Prof/Dept of Prod Dr. V. Anandakrishnan Asso.Prof/Dept of Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 18-20 January,2018	1.AMARTECH 2.Mahendra Engineering College 3.CSIR 4.IPCL 5.CEEYES 6.S.R.Technologies 7.Neuron Techno Solutions 8.Brahmos Aerospace 9.SURGE Engineering Services 10.NANO Markers 11.CREST 12.Manas Enterprises
2.	International Conference on Advances in Production and Industrial Engineering (INCAPIE 2015)	Chairman Dr. S. Kumanan Organizing Secretaries Dr.-Ing.M.Duraiselvam Asso.Prof/Dept.of Prod Dr. P. Sathiya Asso.Prof/Dept.of Prod Dr. R. Jeyapaul Asso.Prof/Dept.of Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 20-21 February,2015	1.TEQIP (Technical Education Quality Improvement Program) 2.Ceeyes Camshafts 3.FlexSim Software Products, Inc.
3.	International Conference on Advances in Production and Industrial Engineering	Dr.P.Sathiya	NITT, 20/02/2015	International
4.	National Conference on Corrosion, Surface Engineering and Tribology	Dr.P.Sathiya	NITT, 22/04/2013	National

S.No.	Title of the conference	Name of the organizers	Venue & Date	Sponsor Details & International/ National
	Emerging Applications of System Modeling and Simulatio	Dr.S. PrasannaVenkatesan & DrS. Kumanan	NIT-Trichy 23/02/2017- 25/02/2017	Self support
5.	Power of Simulation Using FLEXSIM	Dr.S. PrasannaVenkatesan & DrS. Kumanan	10/04/2015- 11/04/2015	TEQIP-II
6.	Engineering Optimization and Approaches	Dr.S. PrasannaVenkatesan & Dr. J.Jerald	24-08-2012 25-08-2012	Self support
7.	International Conference on Contemporary Design and Analysis of Manufacturing and Industrial Engineering Systems (CDAMIES 2018)	Dr-Ing. M. Duraiselvam Dr. P. Parthiban Dr. S. Vinodh Dr. V. Anandakrishnan	National Institute of Technology Tiruchirappalli & 18 th 20 th January 2018	National
8.	International Conference on Contemporary Design and Analysis of Manufacturing and Industrial Engineering systems (CDAMIES-2018)	Chairman: Dr M Duraiselvam Organizing Secretaries: Dr P Parthiban Dr S Vinodh Dr V Anandakrishnan	NITT Jan 18-20, 2018	AMAR TECH, CSIR International

WORKSHOPS ORGANIZED

Department wise

Name of the Department: Production Engineering

S.No.	Title of the workshop	Name of the organizers	Venue & Date	Sponsor Details & International/National
1.	Current Challenges in Manufacturing Leading to Innovation	Dr. M.Duraiselvam Asso.Prof & Head/Prod Dr. P. Parthiban Asst.Prof/Prod Dr. V.Anandkrishnan Asst.Prof/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 19-24 December,2016	TEQIP-II (Technical Education Quality Improvement Program)
2.	Measuring Productivity in Higher Education	Dr. M. Duraiselvam Asso.Prof & Head/Prod Dr. G. Kannabiran Prof(HAG)/DOMS	Department of Management Studies, National Institute of Technology, Tiruchirappalli 19-24 September,2016	TEQIP-II (Technical Education Quality Improvement Program)
3.	Laser Micro processing for Biomedical Applications	Dr. M. Duraiselvam Asso.Prof/Prod Dr. V. Senthilkumar Asst.Prof/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 3 April,2014	TEQIP-II (Technical Education Quality Improvement Program)
4.	Surface Engineering for Tribological Applications	Dr. M. Duraiselvam Asso.Prof/Prod Dr. D. Lenin Singaravelu Asst.Prof/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 10-12 June,2013	TEQIP-II (Technical Education Quality Improvement Program)

S.No.	Title of the workshop	Name of the organizers	Venue & Date	Sponsor Details & International/ National
5.	Production Processes for Defense Applications	Dr. M. Duraiselvam Asso.Prof/Prod Dr. P. Parthiban Asst.Prof/Prod Dr.V.Anandakrishnan Asst.Prof/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 27 May 2013 to 1 June 2013	-
6.	Materials Awareness Program for DRDL Scientists	Dr. M. Duraiselvam Asso.Prof/Prod Dr. K. Siva Prasad Asst.Prof/MME	02.11.2012 to 29.12.2012 (84 Hrs)	-
7.	Application of Information Technology Tools in Manufacturing	Dr. M. Duraiselvam Asst.Prof/Prod Dr. A. Noorul Haq Prof/Prod Mr. P. Parthiban Lecturer/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 11-12, March 2008	TEQIP (Technical Education Quality Improvement Program)
8.	Laser Processing of Materials	Dr. M. Duraiselvam Asst.Prof/Prod Dr. A. Noorul Haq Prof/Prod Mr. P. Parthiban Lecturer/Prod	Department of Production Engineering, National Institute of Technology, Tiruchirappalli 06-07, March 2008	TEQIP (Technical Education Quality Improvement Program)
9.	Enterprise Resource Planning	Dr. M. Duraiselvam Asst.Prof/Prod Dr. A. Noorul Haq Prof/Prod Mr. P. Parthiban Lecturer/Prod	05.03.2008	TEQIP (Technical Education Quality Improvement Program)
10.	Entrepreneurship Skills	Dr. M. Duraiselvam Asst.Prof/Prod	22.02.2008	TEQIP (Technical Education Quality

S.No.	Title of the workshop	Name of the organizers	Venue & Date	Sponsor Details & International/ National
		Dr. A. Noorul Haq Prof/Prod Mr. P. Parthiban Lecturer/Prod		Improvement Program)
11.	Workshop on Advances Material Processing in Past, Present and Future	Dr.P.Sathiya	NITT, 30/06/2016	National
12.	Workshop on Recent Developments of Welding Processes in Manufacturing Industries	Dr.P.Sathiya	NITT, 27/06/2013	National
13.	One Day Colloquium on Corrosion Control and Surface Engineering : Current R&D and Industrial Scenario	Dr.P.Sathiya	NITT, 10/12/2012	National
14.	Radiant Energy Welding Processes	Dr.P.Sathiya	NITT, 15/03/2008	National
15.	Finite Element Analysis of Welding	Dr.P.Sathiya	NITT, 24/01/2008	National
16.	Welding Course	Dr.P.Sathiya	NITT, 04/07/2006	National
17.	Short-Term Course on Production Processes for Defence Applications	Dr. Ing. M.Duraiselvam, Dr.V.Anandkrishnan Dr.P.Parthiban	NIT Trichy 27th May to 1st June 2013	Self-Supported
18.	Short-Term Course on Design and Optimization of Production Management Systems	Dr. Ing. M.Duraiselvam, Dr.V.Anandkrishnan Dr.P.Parthiban	NIT Trichy 3rd June to 8th June 2013	Self-Supported

S.No.	Title of the workshop	Name of the organizers	Venue & Date	Sponsor Details & International/ National
19.	Current Challenges In Manufacturing - Leading To Innovation	Dr. Ing. M.Duraiselvam, Dr. V.Anandakrishnan Dr.P.Parthiban	NIT Trichy 19th Dec to 24th Dec 2016	TEQIP II
20.	National Workshop on Additive Manufacturing & 3D Printing	Dr S Vinodh & Dr P Senthil	NITT April 22-23, 2016	SERB, New Delhi
21.	Welding Processes for Manufacturing Industries	Dr A Noorul Haq, Dr P Sathiya and Dr K Panneerselvam	27-29 June 2013	-
22.	Modelling of Manufacturing Processes	Dr V Senthilkumar and Dr P Senthil	25-27 July 2013	-
23.	Advances in Manufacturing Technology	Dr J Jerald and Dr C Sathiyarayanan	08-10 Aug 2013	-

**RESEARCH LABORATORIES & CENTRALIZED INSTRUMENTATION
FACILITIES**

Department wise

Name of the Department: Production Engineering

S.No.	Name of the Equipment	Cost (Rs.)	Name of the Laboratory	Short description of the Equipment (Model, Make Important Details)	Faculty In charge Contact Details
1.	Laser Materials Processing Workstation	3,37,29,104	LaSET	Make: Optilase	Dr. M. Duraiselvam Professor Dept.of Production Engineering NIT, Trichy Phone:0431-2503509 E-mail:durai@nitt.edu
2.	Laser Micromachining Workstation	68,71,215	LaSET	Make: Aimil Ltd	Do
3.	Universal Tribometer	1,27,00,000	LaSET	Make: R. tech Instrument	Do
4.	Roller on Roller Wear Tester	26,73,575	Surface Engineering and Tribology Lab	Make: DUCOM Model: TR-25	Do
5.	Corrosion Wear Monitor	19,92,300	Surface Engineering and Tribology Lab	Make: DUCOM Model:TR-20	Do
6.	Wear and Friction Monitor	8,71,875	Surface Engineering and Tribology Lab	Make: Nanotech Systems Model:TR-20H-PHM-40-CHM 500	Do
7.	Scratch Tester	7,16,770	LaSET	Make: DUCOM Model:TR-101	Do
8.	Metallurgical Microscope	6,72,280	LaSET	Make: Olympus Model: Foundryplus	Do

S.No.	Name of the Equipment	Cost (Rs.)	Name of the Laboratory	Short description of the Equipment (Model, Make Important Details)	Faculty In charge Contact Details
9.	Surface Roughness Tester	97,596	LaSET	Make: Mitutoyo Model: SJ-201P	Do
10.	Stereo Microscope	5,31,000	LaSET	Make: Olympus	Do
11.	Precision weighing balance	70,000	Surface Engineering and Tribology Lab	Make: Essae Model: AF-R220E	Do
12.	Double disc polishing	74,017	Surface Engineering and Tribology Lab	Make: Chennai Metco	Do
13.	Belt grinder	32,670	Surface Engineering and Tribology Lab	Make: Chennai Metco	Do
14.	Hydraulic specimen mounting press	92,065	Surface Engineering and Tribology Lab	Make: Chennai Metco	Do
15.	Abrasive cutter double disc	2,54,782	Surface Engineering and Tribology Lab	Make: Chennai Metco	Do
16.	Infrared Thermal Camera	3,96,625	LaSET	Aimil Ltd Make: Fluke Model: Ti959HZ	Do
17.	Automatic Polishing Machine	1.2	Advanced Welding Lab	2007	Dr.P.Sathiya
18.	Hydraulic Mounting Press	0.7	Advanced Welding Lab	2007	Dr.P.Sathiya

S.No.	Name of the Equipment	Cost (Rs.)	Name of the Laboratory	Short description of the Equipment (Model, Make Important Details)	Faculty In charge Contact Details
19.	Heat Treating Furnace	1.4	Advanced Welding Lab	2014	Dr.P.Sathiya
20.	Macroscope	1.45	Advanced Welding Lab	2018	Dr.P.Sathiya
21.	Optical Microscope	3.75	Advanced Welding Lab	2013	Dr.P.Sathiya
22.	Vickers Microhardness Tester	12	Advanced Welding Lab	2016	Dr.P.Sathiya
23.	Electrochemical Workstation	7	Advanced Welding Lab	2015	Dr.P.Sathiya
24.	Abrasive Cutting Machine	0.95	Advanced Welding Lab	2017	Dr.P.Sathiya
25.	Belt Grinder	0.3	Advanced Welding Lab	2017	Dr.P.Sathiya
26.	Impression Creep Testing Machine	11.5	Advanced Welding Lab	2016	Dr.P.Sathiya
27.	Flexsim simulation software	3.00 lakh	Simulation laboratory	Flexsim 2017 used for modeling and simulation of manufacturing system	Dr.S.Prasanna Venkatesan
28.	3D Printer	Rs 19 Lakhs	Rapid Manufacturing Laboratory	FDM based 3D Printer Model: uPrint SE Plus Make: Stratasys, USA	Dr S Vinodh Email: vinodh@nitt.edu Mobile: 9952709119

S.No.	Name of the Equipment	Cost (Rs.)	Name of the Laboratory	Short description of the Equipment (Model, Make Important Details)	Faculty In charge Contact Details

LIST OF GIAN COURSES CONDUCTED

IST OF GIAN COURSES CONDUCTED

S.No	Name of the Course	Local Convenor	Details of Foreign speaker and Affiliation	Venue	Date
1.	Quantitative Models for Supply Chain Management	Dr.S. PrasannaVenkatesan	Prof. Dr. Mark Goh	NIT-Trichy	16-06-2016 to 25-06-2016
2.	Fundamentals and Advanced Concepts of Lean Manufacturing and Six Sigma	Dr S Vinodh	Prof. Jiju Antony, Professor of Quality Management, School of Management and Languages, Heriot-Watt University, Edinburgh, United Kingdom	NITT	July 25-30, 2016