

ACADEMIC YEAR 2011-12

Department of Production Engineering

Research Project No.: 01

1.	Title	An Experimental analysis of Pulse Electrochemical Machining
2.	Funding/ Sponsoring Agency	Institute of Engineers , India(IEI)– Research and Development Grant
3.	Amount	Rs. 0.6 lakhs
4.	Coordinator	Prof P.V. Jadhav
5.	Co Coordinator.	---
6.	Abstract	Pulse electrochemical machining is an electrolytic process and it is based on the phenomena of electrolysis. The tool electrode used in the process does not wear and therefore soft metals can be used as tools to form shapes of harder work pieces, unlike conventional machining methods. This project is focused on analyzing how different parameters affect the MRR so as to find the ideal conditions of optimal performance. This also gives the insight of how the use of rotating electrode enhances the surface finish.
7.	Month and Year of Commencement	August 2011
8.	Month and Year of Completion	August 2012
9.	Amount received	Nil
10.	Amount spent till date	Nil
11.	Present Status	Ongoing

ACADEMIC YEAR 2010-11

Department of Production Engineering

Research Project No.: 02

1. Title	Manufacturing of Panels of Plain and Varied Shapes using Composite Materials and Nano Fibers(Electro spinning Method) by VARTM Process
2. Funding/ Sponsoring Agency	DMSRDE/DRDO, GT Road, Kanpur
3. Amount Sanctioned	Rs. 10 lakhs
4. Coordinator	Dr.A.R.Bhalerao
5. Co coordinator	Mr.S.S.Chavan
6. Abstract	<p>Electro spinning process offers a potential enabling breakthrough to remove the barriers by dramatically reducing fiber diameters resulting in vast improvements in fiber mechanical properties. The diameter of the fibers obtained in the electro spinning process is in the range of 10 nm to 100 nm, which is nearly two to three orders less than that obtained by the conventional spinning process. These nanofibres with improved properties can be used as secondary reinforcement in composites. Also these nanofibers can have significant enhancement of other properties viz. electronic, optical thermal sensitivity etc . Vacuum Assisted Resin Transfer Molding (VARTM) process is an optimized method to form nano composite material in form of plates or panel.</p>
7. Month and Year of Commencement	September 2010
8. Month and Year of Completion	September 2013
9. Amount received	Rs. 7.5 Lakhs
10. Amount spent to till date	Nil
11. Present Status	Ongoing

1.	Title	Integrated Rogue Access Point system in WLAN
2.	Funding/ Sponsoring Agency	AICTE Research Promotion Scheme
3.	Amount Sanctioned	Rs. 4.5 lakhs
4.	Coordinator.	Dr. S. H. Patil
5.	Co Coordinator.	Mr. Amol K. Kadam
6.	Abstract	We propose the integrated solution for the Rogue Access Point system. Classification of Rogue Access Point system and related risk assessment will be analyzed. Rouge detection algorithm is also proposed, which gives a effective solution. It is also proposed to utilize the existing WLAN infrastructure, instead of new RF devices.
7.	Month and Year of Commencement	March 2011
8.	Month and Year of Completion	March 2013
9.	Amount received	Rs. 4.5 lakhs
10.	Amount spent to till date	Nil
11.	Present Status	Ongoing

1.	Title	Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan
2.	Funding/ Sponsoring Agency	University Grant Commission (UGC) (Grants –in-aid)
3.	Amount Sanctioned	Rs. 8,47,282/-
4.	Coordinator.	Ms. Sharada P. Tondare
5.	Co Coordinator.	--
6.	Abstract	This Grant –in –aid is released to the Department of Electronics Engineering for B. E. in Biomedical Engineering under Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan.
7.	Month and Year of Commencement	15 Feb 2011
8.	Month and Year of Completion	NA
9.	Amount received	Rs. 8,47,282/-
10	Amount spent to till date	Rs. 8,47,282/-
11	Present Status	Completed

1.	Title	Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan
2.	Funding/ Sponsoring Agency	University Grant Commission (UGC) (Grants –in-aid)
3.	Amount Sanctioned	Rs. 6,63,050/-
4.	Coordinator.	Ms. Sharada P. Tondare
5.	Co Coordinator.	--
6.	Abstract	This Grant –in –aid is released to the Department of Electronics Engineering for B. E. in Biomedical Engineering under Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan.
7.	Month and Year of Commencement	15 Feb 2011
8.	Month and Year of Completion	NA
9.	Amount received	Rs. 6,63,050/-
10.	Amount spent to till date	Rs. 6,63,050/-
11.	Present Status	Completed

ACADEMIC YEAR 2008-09

Department of Electrical Engineering

Research Project No.: 06

1.	Title	E learning Web based environment – A new education paradigm for department.
2.	Funding/ Sponsoring Agency	AICTE, MODROBS New Delhi
3.	Amount Sanctioned	Rs. 5.0 lakhs
4.	Coordinator.	Prof. P.V.Chopade
5.	Co Co-ordinator.	--
6.	Abstract	A complete hardware solution for E- learning compatible system is established through this grant
7.	Month and Year of Commencement	June 2008
8.	Month and Year of Completion	Ongoing
9.	Amount received	Rs. 5.0 lakhs
10.	Amount spent to till date	Rs. 5.0 lakhs
11.	Present Status	Ongoing

ACADEMIC YEAR 2006-07

Department of Computer Engineering

Research Project No.: 07

1.	Title	High Non-Stationary EEG Analysis Using Wavelets
2.	Funding/ Sponsoring Agency	All India Council for Technical Education (AICTE), New Delhi (Research Promotion Scheme)
3.	Amount sanctioned	Rs.2.15 lakhs
4.	Co ordinator.	Prof. S. T. Patil
5.	Co Co-ordinator.	----
6.	Abstract	<p>Electroencephalography (EEG) is the neurophysiologic measurements of the electrical activity of the brain by recording from electrodes placed on the scalp in the cerebral cortex. The resulting traces are known as an Electroencephalography.</p> <p>In this project a new software tool is designed and implemented to simplify the complexity of EEG signal based on the digital signal processing features like Density estimation, regression estimation, channel properties, event related potential, component activities, data statistics, channel time frequency, component time frequency, channel cross coherence, component cross coherence and Correlation dimension. A wavelet transformation is applied to electrocephalograph records from persons under different yoga types like basarika, kapalbhati, soham, bramari, ujjai and anulom vilom. And analyzed these parameters using wavelet transformation. This software is used to keep track of the improvement of the persons mind, aging, balance, flexibility, personnel values, mental values, social values, love, sex, knowledge, weight reduction and body fitness. This type of analysis is very useful for medical applications, bio-medical research, brain computer interface, artificial intelligence, Thinking machines, wheel chair for blocked person, Think and act systems, robotics, etc.</p>
7.	Month and Year of Commencement	2006-07
8.	Month and Year of Completion	2008-09
9.	Amount received	Rs.2.15 lakhs
10.	Amount spent to till date	Rs.2.15 lakhs
11.	Present Status	Completed

1.	Title	Studies on Continuous fixed bed adsorption column for the removal of fluoride and Trace organics from groundwater
2.	Funding/ Sponsoring Agency	A.I.C.T.E. Research Promotion Scheme
3.	Amount sanctioned	Rs.5.75 LAKHS
4.	Coordinator	Prof. S. J. Attar
5.	Co coordinator	_____
6.	Abstract	The presence of fluoride in drinking water in India is one of the major health issues as in many parts of the world. The upper permissible limit fixed by WHO is 1.5 mg/l. The impact of fluoride conc. above 1.5 mg/l, leads to high risk of dental and skeletal fluorosis. A column studies are proposed for the best adsorption material and various parameters are studied and a adsorption column is designed as a low cost model for the adsorption.
7.	Month and Year of Commencement	February 2006
8.	Month and Year of Completion	February 2009
9.	Amount received	Rs.5.75 Lakh
10.	Amount spent to till date	Rs.5.75 Lakh
11.	Present Status	Completed

1.	Title	Modernization of various Chemical Engineering Laboratories
2.	Funding/ Sponsoring Agency	A.I.C.T.E. MODROBS
3.	Amount sanctioned	Rs.12.00 lakhs
4.	Coordinator	Prof. S. J. Attar
5.	Co coordinator	-----
6.	Abstract	The following listed laboratories are modernized; Process Dynamics Instrumentation and Control Chemical Reaction Engineering Unit operations Mass Transfer
7.	Month and Year of Commencement	February 2007
8.	Month and Year of Completion	February 2009
9.	Amount received	Rs.12 lakhs
10.	Amount spent to till date	Rs.12 lakhs
11.	Present Status	Completed

1.	Title	Fiber Optic sensors in biomedical applications
2.	Funding/ Sponsoring Agency	Institution of Engineers (India), Kolkata
3.	Amount sanctioned	Rs. 0.5 lakhs
4.	Co ordinator	Prof. Mrs. A. A. Shinde
5.	Co coordinator	---
6.	Abstract	The project is aimed to make the measurement and analysis of glucose in blood. The measurement is made using fiber optic sensor and based on colorimetric principle. The fiber optic probe is specially designed to encompass the transmitting fiber of receiving fiber. The absorption property (light) is used for quantitative and qualitative analysis.
7.	Month and Year of Commencement	01/06/2006
8.	Month and Year of Completion	31/12/2007
9.	Amount received	Rs. 0.5 lakhs
10.	Amount spent to till date	Rs. 0.5 lakhs
11.	Present Status	Completed

1.	Title	Newspaper reader for blind people
2.	Funding/ Sponsoring Agency	IEI, Kolkata
3.	Amount sanctioned	Rs.0.2 lakhs
4.	Co ordinator	Prof. J. S. Chitode
5.	Co coordinator --	
6.	Abstract	This project is being implemented mainly for visually handicapped people. They can read the newspaper available on the websites with the help of text to speech synthesizer. This system converts the input text to correspond sound output. This project uses a combination of database and word breaking into small units where a syllable is the basic unit of breaking
7.	Month and Year of Commencement	01/06/2006
8.	Month and Year of Completion	01/12/2007
9.	Amount received	Rs.0.2 lakhs
10.	Amount spent to till date	Rs.0.2 lakhs
11.	Present Status	Completed

Department of Mechanical Engineering**Research Project No.: 12**

1.	Title	Enhancement of surface finish of electrochemically drilled deep hole
2.	Funding/ Sponsoring Agency	DST (Research project under SERC Engineering Sciences scheme)
3.	Amount sanctioned	Rs. 21.54 lakhs
4.	Co ordinator	Dr. D. S. Bilgi
5.	Co coordinator	Prof. M. V. Sulakhe, Prof. V. M. Pathak, Prof. P. V. Jadhav
6.	Abstract	Deep holes are required to be Precision machined for weaponry, automotive, textile, electronic of aerospace industries. As the ratio of depth to diameter increases, it becomes excrement, difficult to produce such holes. The improvement of machining accuracy of electrochemically machining (ECM) continues to be a major challenge for fabrication of aerospace components. This project proposes to improve surface finish of electrochemically drilled deep hole. Using rotating electrode.
7.	Month and Year of Commencement	August 2006
8.	Month and Year of Completion	In Progress
9.	Amount received	Rs. 21.54 lakhs
10.	Amount spent to till date	Rs. 21.54 lakhs
11.	Present Status	Ongoing

1.	Title	Brain Computer Interface
2.	Funding/ Sponsoring Agency	All India Council for Technical Education (AICTE), New Delhi (Research Promotion Scheme)
3.	Amount sanctioned	Rs.4. 60 lakhs
4.	Co-ordinator	Prof. S. T. Patil
5.	Co coordinator	----
6.	Abstract	<p>Electroencephalography (EEG) is the neurophysiologic measurements of the electrical activity of the brain by recording from electrodes placed on the scalp in the cerebral cortex. The resulting traces are known as an Electroencephalography.</p> <p>In this project a new software tool is designed and implemented to simplify the complexity of EEG signal based on the digital signal processing features like Density estimation, regression estimation, channel properties, event related potential, component activities, data statistics, channel time frequency, component time frequency, channel cross coherence, component cross coherence and Correlation dimension. A wavelet transformation is applied to electrocephalograph records from persons under different yoga types like basarika, kapalbhati, soham, bramari, ujjai and anulom vilom. And analyzed these parameters using wavelet transformation. This software is used to keep track of the improvement of the persons mind, aging, balance, flexibility, personnel values, mental values, social values, love, sex, knowledge, weight reduction and body fitness. This type of analysis is very useful for medical applications, bio-medical research, brain computer interface, artificial intelligence, Thinking machines, wheel chair for blocked person, Think and act systems, robotics, etc.</p>
7.	Month and Year of Commencement	Feb. 2007
8.	Month and Year of Completion	April 2009
9.	Amount received	Rs.4. 60 lakhs
10.	Amount spent to till date	Rs.4. 60 lakhs
11.	Present Status	Completed

1.	Title	Modernization of Metallurgy Laboratory
2.	Funding/ Sponsoring Agency	AICTE (Under MODROBS), New Delhi
3.	Amount sanctioned	Rs.5.3 lakhs
4.	Coordinator	Prof. S. C. Shilwant
5.	Co coordinator	Prof. S. D. Lembhe
6.	Abstract	Due to advances in new material technology development, accurate testing of materials has become essential. The hardness testing of these new materials is important. An auto Indexing Hardness tester is being procured under the "Modernization of Metallurgy Laboratory.", scheme in the metallurgy laboratory of the Production Engineering Department. The equipment is versatile and highly accurate to test micro hardness of a variety of materials. For research and consultancy work the machine is useful for checking the micro hardness of sheet metals, Tool steel and other materials.
7.	Month and Year of Commencement	Feb. 2007
8.	Month and Year of Completion	Feb. 2009
9.	Amount received	Rs.5.3 lakhs
10.	Amount spent to till date	Rs.5.3 lakhs
11.	Present Status	Completed

1.	Title	Microprocessor based Phasor Group Testing of Three Phase Transformer
2.	Funding/ Sponsoring Agency	Mahati Electrics
3.	Amount sanctioned	Rs.0.2 lakhs
4.	Coordinator	Prof. H. G. Deshpande
5.	Co coordinator	--
6.	Synopsis	The project describes a microprocessor based test which is based on the comparison of the primary and secondary voltage waveforms leading to direct display of the vector group of the transformer. This scheme thus eliminates a number of small tests for the vector group identification offering a single test set to get a direct display of the group without making any direct measurement.
7.	Month and Year of Commencement	April 2005
8.	Month and Year of Completion	March 2007
9.	Amount received	Rs.0.2 lakhs
10.	Amount spent to till date	Rs.0.2 lakhs
11.	Present Status	Completed

1.	Title	Microprocessor controller based traffic control using nail arrangement with FSK
2.	Funding/ Sponsoring Agency	Institution Engineers (India), Kolkata
3.	Amount sanctioned	Rs.0.25 lakhs
4.	Coordinator	Prof. Mrs. J. V. Satre
5.	Co coordinator	----
6.	Abstract	<p>The aim of this project is to regulate the traffic flow with the help of micro controller 89C51 and nail arrangement driven by stepper motor. The micro controller drives the LED's according to time delay set according to the traffic norms and in turn drives the stepper motor which drives the bed of nails. Now whenever the signal is 'Green' this arrangement will be under the road. When the signal turns 'Yellow' this arrangement will start moving in upward direction. When the signal will turn 'RED' the arrangement will be totally upwards. So the driver of the vehicle has to stop, as these nails are sharp enough to puncture the tire of vehicle.</p>
7.	Month and Year of Commencement	April 2005
8.	Month and Year of Completion	March 2007
9.	Amount received	Rs.0.25 lakhs
10.	Amount spent to till date	Rs.0.25 lakhs
11.	Present Status	Completed

ACADEMIC YEAR 2005-06

Department of Mechanical Engineering

Research Project No.: 17

1.	Title	MODROBS Heat Engines Laboratory
2.	Funding/ Sponsoring Agency	AICTE , New Delhi
3.	Amount sanctioned	Rs.10.0 Lakhs
4.	Coordinator	Prof. S. B. Wadkar
5.	Co coordinator	Prof. D. G. Kumbhar
6.	Abstract	We have submitted the proposal to AICTE under MODROBS in academic year 2004-05, which individual the two major equipments Listed as : 1. Trial on multi-cylinder Petrol Engine with computer interface. 2. Trial on multi-cylinder diesel Engine with computer interface.
7.	Month and Year of Commencement	Jan 2006
8.	Month and Year of Completion	Jan 2008
9.	Amount received	Rs.10.0 Lakhs
10.	Amount spent to till date	Rs.10.0 Lakhs
11.	Present Status	Completed

1.	Title	Phase Equilibria Studies for Multicomponent Systems
2.	Funding/ Sponsoring Agency	All India Council for Technical Education (AICTE) New Delhi (Career Award for Young Teachers)
3.	Amount sanctioned	Rs.10.5 lakhs
4.	Coordinator	Prof. Mrs. Veena Anand Shinde
5.	Co coordinator	----
6.	Abstract	Separation processes in process industries depend mainly on the vapor liquid equilibrium data for the components present. Whereas binary and ternary systems are studied analyzed and report extensively in technical literature. Data for multicomponent system exceeding four components are hardly reported. However, industrially relevant systems contains large no of components often exceeding four. there are large no of examples in industry wherein, a right split of feed of multicomponent system into distillate and heavies or distribution of minor components in light and heavy phases or selective separation of product is essential for the process feasibility. Lack of correct knowledge about VLE of Multi-components can make the process non viable. The purpose of this study is to generate VLE data for multicomponent system.
7.	Month and Year of commencement	January 2006
8.	Month and Year of Completion	Ongoing
9.	Amount received	First Year of award Rs.4.6 lakhs Second Year award Rs.3.1 lakhs
10.	Amount spent to till date	Rs.5.7 lakhs
11.	Present Status	<ol style="list-style-type: none"> 1) Rs. 4.6 lakhs is the fund released for the first year of ward, which has been utilized properly. 2) Attended first project review meeting on 20th February, 2007 which is held at AICTE's office at New Delhi and submitted Annual Progress Report of project for first year of award. 3) A.I.C.T.E. Review committee remark is satisfactory towards the project work. 4) Publication – 3 in National Journal. 5) Attended Eleventh International Conference on Properties and Phase Equilibria for Product and Process Design PPEPPD 2007 held at Crete, Greece. 6) Rs. 3.1 lakhs is released for second year of award.

1.	Title	Modernization of Environment Engineering laboratory
2.	Funding/ Sponsoring Agency	AICTE,(MODROBS)New Delhi
3.	Amount sanctioned	Rs. 6.0 lakhs
4.	Coordinator	Prof. Mrs. V. S. Sohoni
5.	Co coordinator	Prof. A. B. More
6.	Abstract	<p>Environment engineering laboratory is modernized in following respects.</p> <ol style="list-style-type: none">1. Additional experiments related to water quality management, air pollution control can be conducted.2. Addition of new experiments covering latest technology requirements shall increase the Spectrum of better understanding.3. Student shall acquire skill to quantify pollution problems through laboratory courses.4. Field engineers shall be trained through refresher/ short term courses.5. Postgraduate's courses in Environmental Engineering may be introduced.6. The laboratory can be used for interdisciplinary purpose i.e. M.E. (Chemical) students can use the laboratory for their dissertation research project.
7.	Month and Year of Commencement	June 2006
8.	Month and Year of Completion	December 2007
9.	Amount received	Rs. 6.0 lakhs
10.	Amount spent to till date	Rs. 6.0 lakhs
11.	Present Status	Completed

ACADEMIC YEAR 2004-05

Department of Electronics Engineering

Research Project No.: 20

1.	Title	Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan
2.	Funding/ Sponsoring Agency	University Grant Commission (UGC) (Grants –in-aid)
3.	Amount Sanctioned	Rs. 29,20,000/-
4.	Coordinator.	Ms. Sharada P. Tondare.
5.	Co Coordinator.	--
6.	Abstract	This Grant –in –aid is released to the Department of Electronics Engineering for B. E. in Biomedical Engineering under Innovative Programme- Teaching and Research in Interdisciplinary and emerging areas during X plan.
7.	Month and Year of Commencement	September 2004
8.	Month and Year of Completion	NA
9.	Amount received	Rs. 29,20,000/-
10.	Amount spent to till date	Rs. 29,20,000/-
11.	Present Status	Completed