



RESEARCH PROJECT ABSTRACTS

BHARATI VIDYAPEETH DEEMED UNIVERSITY

COLLEGE OF ENGINEERING, PUNE 411043

ACADEMIC YEAR 2015-16**Department of Mechanical Engineering**

1.	Title	An Experimental Investigation on Evaluation of Performance of Four Biomass Cookstoves.
2.	Funding/ Sponsoring Agency	TEQIP - II
3.	Amount Sanctioned	3.00 Lakh
4.	Coordinator	Dr. Kailasnath B. Sutar
5.	Co Coordinator.	--
6.	Abstract	Currently various kinds of biomass cookstoves available for the users are: traditional cookstoves, improved cookstoves (both metal and mud) and advance cookstoves. The metal cookstoves may or may not be with fans whereas advanced cookstoves may be of gasifier or combustion types. It is proposed to conduct systematic laboratory tests on five types of biomass cookstoves viz. traditional three stone fire, improved mud cookstove, improved natural draft metal cookstove, improved forced draft metal cookstove and forced draft gasifier cookstove. Both thermal as well as emission performance of the cookstoves will be measured. Input power versus efficiency characteristic curves will be developed for each cookstove.
7.	Month and Year of Commencement	April, 2016
8.	Month and Year of Completion	March, 2018
9.	Amount spent till date	Nil
10.	Present Status	The purchase order has to be placed shortly

Department of Electrical Engineering

1.	Title	Application and enhancement of cloud computing technique in electrical grid to improve grid performance.
2.	Funding/ Sponsoring Agency	TEQIP - II
3.	Amount	2.70 Lakh
4.	Coordinator	Prof. Nachiket Kulkarni
5.	Co Coordinator.	
6.	Abstract	<p>To examine and demonstrate the CC enabled grid model, We hereby propose to setup a laboratory based representative grid with a IED connected in circuit with load. The grid formed by this setup will be then provided with Real Time Monitoring and Control by using Cloud Computing Architecture.</p> <p>An Over-drawl and Under-drawl situation will be created artificially in laboratory setup to demonstrate the Grid disturbance (As that occurred during 30th July 2012).</p> <p>An algorithm based program coding will be done on CLOUD architecture and the intelligent device for “Automatic Grid isolation for over-drawl /under-drawl situation – using CLOUD computing Technique”.</p> <p>The CLOUD will act as a master program, while the intelligent device will act as a slave to perform the isolation operations as desired</p>
7.	Month and Year of Commencement	May, 2016
8.	Month and Year of Completion	June, 2018
9.	Amount received	2.70 Lakh
10.	Amount spent till date	Nil
11.	Present Status	Comparative of Vendors has been made, purchase meeting will be initiated shortly.

Department of Chemical Engineering

1.	Title	Preparation of Ultrafiltration Membranes with precise control on pore morphology and permeation characteristics for water treatment application
2.	Funding/ Sponsoring Agency	TEQIP-II
3.	Amount	275000/-
4.	Coordinator	Dr. Yogesh J. Chendake
5.	Co Coordinator.	
6.	Abstract	Membrane technology is emerging as an able alternative for application in various industrial and water treatment applications. But the membranes have a trade off between MWCO and flux through the membranes. Careful optimization of the membrane preparation conditions can lead to formation of membrane with desired porosity and pore size. A small pore size leads to excellent separation properties, while the transport rate is measurably low. While for higher flow rate we have to compromise on the rejection properties. This project aims towards optimization of membrane properties with precise control on porosity and pore size. Thus formation of high porosity with small pore size membrane can result in high transport rate and excellent rejection properties.
7.	Month and Year of Commencement	March 2016
8.	Month and Year of Completion	Ongoing
9.	Amount received	275000/-
10.	Amount spent till date	-
11.	Present Status	Ongoing

Department of Computer Engineering

1.	Title	Design software Testing laboratory using Functional Point Analysis and Test Point Analysis (SRGM) for reduces the Maintenance cost.
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth University
3.	Amount	40,000/-
4.	Coordinator	Mr. Amol K. Kadam
5.	Co Coordinator.	Mr. Samadhan Kadam
6.	Abstract	Software cost estimation is the important activity while the development of the software. Expenditure assessment is bit complex task as it can be affected by many factors. This factors aids in the calculating of maintenance cost of software. In this paper we have implemented the function point analysis and test point analysis in order to discover the maintenance cost. This is accomplished by using the various techniques to calculate the function point analysis and test point analysis. Along with the calculation of maintenance cost we have also presented the module to assess the reliability of the software from the context of white box testing. Software reliability growth models are aids to evaluate the reliability of the software. This paper presented the NHPP based SRGM to estimate the reliability.
7.	Month and Year of Commencement	20/05/2015
8.	Month and Year of Completion	01/03/2016
9.	Amount received	40,000/-
10.	Amount spent till date	40,000/-
11.	Present Status	Complete

Department of Computer Engineering

1.	Title	“Utilizing Video compression and decompression algorithm on video rendering during upload and download time using J2ME RMI”.
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University, Pune - 30
3.	Amount	Rs. 33,000/-
4.	Coordinator	Naveenkumar Jayakumar
5.	Co Coordinator.	--
6.	Abstract	<p>User can access all resources continuously and consistently on heterogeneous devices using J2ME and RPC video rendering. However, resource constrained on mobile devices is more challenging to use complex resources or applications such as laptops, PDA, mobile devices etc. There are various approaches have been proposed to solve this problem such as system base or resource based applications. However, degrading fidelity application often required in existing solutions.</p> <p>User knows that the problem of resource access can be overcome by dynamically offloading part of the execution of resource and partitioning of resource to a nearby powerful surrogate. This process will enable delivery of Runtime data extractor system to be required without rewriting of expensive resources and significant fidelity of degradation. Because the file system environments of runtime extractor are more powerful runtime offloading system needs to adapt both functions of resource and patterns of resource execution.</p> <p>Performing video rendering using runtime computing, for that we are using model of Fuzzy control. For offloading developed an interface engine to adaptively solve decision making problem of two key while performing runtime offloading i) resource partitioning policy for intelligent selection ii) adaptive offloading for timely trigger evaluation of extensive trace shows the effectiveness of an interface offloading engine.</p> <p>Executor executes the user requested data. Also executor Extract Model, View and Control part from Video file. At the moment of sending file to requested client executor send model and view part of the video file.</p> <p>Runtime compression using Huffman algorithm gives more confidential data at runtime sending data from one machine to another machine. Huffman algorithm is easy to use, implement and understand with that algorithm gives data confidentiality using runtime encryption of data.</p>

7.	Month and Year of Commencement	June 2015
8.	Month and Year of Completion	June 2016
9.	Amount received	Rs. 33,000/-
10.	Amount spent till date	Rs. 16,725/-
11.	Present Status	Work in Progress

Department of Chemical Engineering

12.	Title	Preparation of UF membranes with high flux and low molecular weight cut off for application in dairy industries
13.	Funding/ Sponsoring Agency	BVDU- Research cell
14.	Amount	32000/-
15.	Coordinator	Dr. Yogesh J. Chendake
16.	Co Coordinator.	Prof. Rahul K. Kulkarni
17.	Abstract	<p>Phase inversion is one of the most important processes for preparing asymmetric polymer porous membranes such as microfiltration, ultrafiltration (UF), nanofiltration, reverse osmosis and supports for composite membrane. There always a trade off between MWCO and flux through the membranes. If it could be managed properly, these membranes are most suitable for separation applications in dairy and pharmaceutical industries, where the components to be separated are highly susceptible for temperature and contaminations. Membrane have benefits of low temperature separations, without any application of heat or contamination with other components. For this careful optimization of membrane properties is needed. This projects aims towards study of such parameters during formation of UF membranes.</p>
18.	Month and Year of Commencement	June 2015
19.	Month and Year of Completion	Ongoing
20.	Amount received	32000/-
21.	Amount spent till date	24606/-
22.	Present Status	Ongoing

Department of Civil Engineering

1.	Title	Effect of permeability of permeable spur on the velocity and the dampening of velocity.
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University
3.	Amount	Rs. 35,000/-
4.	Coordinator	Prof. Mrs. Deepali Rahul Kulkarni
5.	Co Coordinator.	----
6.	Abstract	<p>In river training work, permeable spur can be a good alternative to the traditional methods. The main principle behind this permeable spur is dampening of velocity. Due to the dampening of velocity, sedimentation is initiated which leads to the anti-erosion to the river bank. In past few years many investigators have worked on the permeable spur but they have carried out the scour study and comparison of scour due to impermeable spur and permeable spur. In this present study, experimentation is to be carried out by using permeable spur models with different permeability (i.e. 90%, 80%, 70%, 60% and 0%) in 20 m long flume. Point velocity is measured using current meter (Velocity meter) at different locations such as upstream of spur, near the spur and downstream of the spur. Pressure distribution at various locations is also to be measured. These permeable spur models will be run for different discharges. Data is collected and will be analyzed.</p>
7.	Month and Year of Commencement	July 2015
8.	Month and Year of Completion	December 2016
9.	Amount received	--
10.	Amount spent till date	Nil
11.	Present Status	Current meter purchase is under process. Quotations are received from suppliers. The purchase committee meeting will be conducted shortly.

Department of Electrical Engineering

1.	Title	Design and development of dual stator squirrel cage Induction Machine
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University
3.	Amount	30,000/-
4.	Coordinator	Mrs. Anagha Rahul Soman
5.	Co Coordinator.	Prof.D.G.Bharadwaj
6.	Abstract	<p>Three phase Induction machines are employed in almost all the industries for its simple construction & easy operation. More than 85% of Industrial motors in use today are in fact Induction machines. It is predicted that more than 60% of electrical energy generated is being consumed by Induction machines alone. As 90% of the motors used are Induction machines, if the negative qualities of the machine are minimized & operating characteristics if still improved, will lead to a great positive impact on the market & in turn on the society as well.</p> <p>Any attempt to improve efficiency & power factor will be cost effective The researchers have presented new designs emphasizing small size, low weight, low cost, high performance etc. using different direct as well indirect nonlinear optimization techniques. The quest for improvement in design has no end. The work & study relates to the design of a dual stator , single rotor three phase cage induction motors</p>
7.	Month and Year of Commencement	2015
8.	Month and Year of Completion	In process
9.	Amount spent till date	30,000/-
10.	Present Status	Fabrication work in progress

Department of Electrical Engineering

1.	Title	Single Phase Ball Milling Machine and its Analysis on Super-capacitor
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University, Pune (India)
3.	Amount	37,460/-
4.	Coordinator	Mr. Suyog Subhash Hirve
5.	Co Coordinator.	Mrs. Swati Shirish More
6.	Abstract	<p>Now a days, more emphasis given on energy storage devices mainly which are used to store electrical energy. There are various types of energy storage devices which are available in the market. As the electrical storage capacity increases the related cost with it also increases. A super-capacitor (SC), sometimes ultra-capacitor, formerly electric double-layer capacitor (EDLC)) is a high-capacity electrochemical capacitor with capacitance values up to 10,000 farads at 1.2 volt that bridge the gap between electrolytic capacitors and rechargeable batteries. They typically store 10 to 100 times more energy per unit volume or mass than electrolytic capacitors, can accept and deliver charge much faster than batteries, and tolerate many more charge and discharge cycles than rechargeable batteries. They are however 10 times larger than conventional batteries for a given charge. Super-capacitors are capacitors which are having more charge storage capacity than usual capacitors. The available super-capacitors in the markets are too costly. However the research and development to reduce the cost and increase the storage capacity of ultra-capacitors is going on. This project mainly focuses on the fabricating a super-capacitor which is of low cost and the raw material produced and treated in an indigenously developed, manufactured, fabricated low cost Ball Mill Machine.</p>
7.	Month and Year of Commencement	July 2015
8.	Month and Year of Completion	Dec 2016
9.	Amount received	37,460/-

10.	Amount spent till date	NIL
11.	Present Status	Literature survey and Ball milling machine Data collection in progress

Department of E&TC Engineering

1.	Title	Android based wireless communication
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University Pune
3.	Amount	28,699/-
4.	Coordinator	Mr. Sudhir Adhikrao Kadam.
5.	Co Coordinator.	Mr. Vinod H. Patil
6.	Abstract	Notice board is a primary thing in any institution/organization or public utility places like bus stations, railway stations and parks. But sticking various notices day-to-day is a difficult process. The Notice board is a common display for effective mode of providing information to the people, but this is not easy for updating the messages instantly. This project deals about an advanced Hi-Tech wireless Notice Board. This system is enhanced to display the latest information through an Android application of smart phones or tablet.
7.	Month and Year of Commencement	20/05/2015
8.	Month and Year of Completion	March 2016
9.	Amount received	28,699/-
10.	Amount spent till date	---
11.	Present Status	In Progress 50 % completed. The purpose of printing from a mobile device, Text to speech conversion is covered.

Department of Information Technology

1.	Title	Automatic Human Recognition System using Image Classification
2.	Funding/ Sponsoring Agency	Science and Engineering Research Support soCiety, and Sungshin Women's University, South Korea
3.	Amount	5000 USD for 12 Months
4.	Coordinator	Prof. (Dr.) Debnath Bhattacharyya
5.	Co Coordinator.	NA
6.	Abstract	<p>The target of this project is to provide biometric recognition for securing the access to information and services in the protected environment, with a focus on privacy protection. Techniques and methods will be implemented, which are to be demonstrated and tested in the our Research Lab. The scientific results will be published in journal and conference papers and possibly in PhD theses.</p> <p>This Multimodal Biometric System will be integrated in the private network of our home environment; will increase the user acceptance of the ambient-intelligence scenario, as it combines user convenience with a basic notion of trust in the ambient system. At the same time, it guarantees a sufficient level of security to the providers of information and services. The project will be well suited in social culture to real industries. In particular, it fits in the area of security, which is on biometric authentication. This research project will contribute to a national research focus on the combination of biometrics and security.</p>
7.	Month and Year of Commencement	October 30, 2015
8.	Month and Year of Completion	October 29, 2016
9.	Amount received	2000 USD
10.	Amount spent till date	2000 USD
11.	Present Status	On going

Department of Production Engineering

1.	Title	Load distribution in hybrid joints.
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth University
3.	Amount	Rs.30,000/-
4.	Coordinator	Mr. Mahesh Janardan Patil
5.	Abstract	<p>Hybrid joints are a combination of adhesive bonding and mechanical fastening and are known to combine the advantages of both joint types. Mechanical fasteners are commonly used with adhesive joints. The primary purpose for using the mechanical fasteners is to provide redundancy to the adhesive joints because of the uncertainties associated with adhesive only joints. Therefore, the use of a fastener in hybrid joint is mainly a part of fail-safe design. The objective of our project is to enable hybrid joining in automobiles which in result enhances the strength and life of joints. This will be accomplished by evaluating the mechanical behavior of a representative structure consisting of composite material and metal under tensile load. We have used the combination of bolted and adhesive joints in our project and analyze the trend of variation of base metal, bolt geometry and adhesive. The testing/experimentation is done using Universal Testing Machine (U.T.M.). Substituting composite structures for conventional metallic structures has many advantages because of higher specific stiffness, high strength to weight ratio, light weight, tailored properties, high corrosion resistance, high fatigue life & higher specific strength of composite materials.</p> <p>We have considered the properties of both bolted and adhesive joint. And it is believed that the adhesive layer between bolted lap joint results in a two stage failure of the joint. Hence a modified joint is obtained with increased strength. The experimental analysis was conducted using the Design of Experiment (DOE) methodology & the influence of the material, bolt geometry, and adhesive on tensile shear strength was assessed through the analysis of variance (ANOVA).</p>
6.	Month and Year of Commencement	June 2015
7.	Month and Year of Completion	May 2016
8.	Amount spent till date	Nil
9.	Present Status	Final Testing is remaining

ACADEMIC YEAR 2014-15**Department of Computer Engineering**

10.	Title	Design software Testing laboratory using Software reliability Growth model with concurrent Software Development Life Cycle
11.	Funding/ Sponsoring Agency	UGC- MRP
12.	Amount	11,85,000/-
13.	Coordinator	Prof. Dr. Shashank D. Joshi
14.	Co Coordinator.	Prof. Amol K. Kadam
15.	Abstract	Software reliability is defined as the probability of free failure operations for a specified period of time in specified conditions. Software reliability growth models (SRGM) have been developed to estimate software reliability measures such as software reliability, number of remaining faults & software failure rate. Software testing is a measure face which takes place during software development process .Testing is used to find errors. Testing includes the activities which focus on evaluating an attribute or capability of the program for system & determining that it meets its required result. Software testing is a critical element software quality & ensures & represents the ultimate review of specification, design & code generation. But testing of the software for long time may not ensure high reliability & bug free software. Optimum amount of code required to be covered to make sure that software may not be removed perfectly; this is mainly due to nature of testing team or complexity of software. This phenomenon is known as imperfect debugging. When the faults are not removed perfectly & leads to further generation of fault this process is known as error generation.
16.	Month and Year of Commencement	December 2014
17.	Month and Year of Completion	December 2016
18.	Amount received	11,85,000/-
19.	Amount spent till date	-
20.	Present Status	25% work is complete

Chemical Engineering Department

1.	Title	Bioprocessing of biofuels
2.	Funding/ Sponsoring Agency	Department of Science and Technology (DST), New Delhi
3.	Amount	19.00 Lakh (for 2014-2015)
4.	Coordinator	Dr. Sandip Balasaheb Bankar
5.	Abstract	Developing knowledge based bio economy by collaborating academia and industries to exploit new and emerging research opportunities that address the environmental, social and economic challenges during energy generation. To develop the bio-butanol production process with highly demanding, cheap lignocellulosic feedstock materials for sustainable use and production of other renewable bio-resources with the security of agricultural production in consideration. The demonstration of the process at pilot scale along with the simultaneous recovery and purification of the product will be targeted.
6.	Month and Year of Commencement	July 2014
7.	Month and Year of Completion	July 2019
8.	Amount received	19 Lakh
9.	Amount spent till date	In process (approx. more than 10 Lakh)
10.	Present Status	Ongoing

Department of E&TC Engineering

1.	Title	Computer Aided Design of Circular micro strip patch antenna array
2.	Funding/ Sponsoring Agency	TEQIP II Seed Money
3.	Amount	3.0Lacks
4.	Coordinator	Prof.N.T.Markad
5.	Co Coordinator.	Prof.Deepak Ray
6.	Abstract	<p>Design and realization of circular micro strip antenna array in S band is reported in this research paper. It is shown that the design adopted for circular micro strip antenna array is quite accurate. By using the conventional microwave integrated circuit technology compact, lightweight microstrip antenna array can be realized. The desired narrow band is achieved for the circular micro strip antenna array. Circular microstrip antenna array are designed and fabricated on the substrate of glass epoxy which is easily available and low cost. Substrate has a dielectric constant of 4.22 and thickness 1.6mm. Simulation is done using HFSS to achieve the desired results. Also design and fabrication of circular micro strip antenna array done on glass epoxy substrate using photolithographic process. Then measurement is taken on vector network analyzer in anechoic chamber. A simulated and measured result exactly matches with each other with slight shift in frequency due to low quality substrate.</p>
7.	Month and Year of Commencement	5/3/2015
8.	Month and Year of Completion	Aug 2015
9.	Amount received	3 Lacks
10.	Amount spent till date	3Lakh
11.	Present Status	Completed

Department of Chemical Engineering

1.	Title	A Novel Solid-Liquid Circulating Fluidized Bed Reactor: Hydrodynamic and Mixing Studies
2.	Funding/ Sponsoring Agency	Science and Engineering Research Board (SERB) Department of Science and Technology
3.	Amount	28.05 Lakh
4.	Coordinator	Dr. Prakash V. Chavan
5.	Co Coordinator.	Dr. Satchidanand R. Satpute
6.	Abstract	<p>The present proposal intends to construct a novel radially cross flow multistage solid liquid circulating fluidized bed (SLCFB), comprising of a single column which is further divided into sections (i) loading section, and (ii) regenerating section wherein both the steps of utilization loading (adsorption, catalytic reaction, etc.) and regeneration of solid phase could be carried out simultaneously on a continuous mode. The project will mainly focus on the hydrodynamic and mixing studies of the proposed SLCFB which essentially include expansion characteristics of a solid phase and establishing stable operating window, and characterization of non-ideality in the flow of liquid phase for a given system, geometrical, and operating parameters, respectively. In addition, one model experimental system: recovery of heavy metal from aqueous solution will also be carried out to validate the functionality of the proposed SLCFB. The instant eye-catching benefits from this project are: (i) a reduction in operational time as compared to the time required in batch-wise conventional solid liquid fluidized bed (SLFB) and existing SLCFB, leading to reduction in the operational cost, (ii) a reduction in the pressure drop and enhancement in the rate of mass transfer (thus reduction in number of stages) due to the modified stage configuration wherein solid particles follow radially cross flow which results into uniform fluidization and RTD of solid particles. (iii) a reduction of impurity (recalcitrant solute) upto picobillion level</p>

		from feed solution with higher throughput. Therefore, the proposed SLCFB will be highly beneficial in various sectors like petrochemical, bioelectronics, pharmaceutical, biotechnology, medical sciences, etc. where solid- liquid contact plays an important role in determining the overall performance of the system.
7.	Month and Year of Commencement	July, 2014
8.	Month and Year of Completion	June, 2017
9.	Amount received	19.71 Lakh
10.	Amount spent till date	12 Lakh
11.	Present Status	Expansion characteristics study of solid phase is under progress along with construction of solid liquid circulating fluidized bed.

ADEMIC YEAR: 2013-14

Department of Chemical Engineering

1.	Title	Synthesis using Esterification Reaction
2.	Funding/ Sponsoring Agency	Technical Education Quality Improvement Programme-II (TEQIP- II)
3.	Amount	2.20 Lakh
4.	Coordinator	Dr. Prakash V. Chavan
5.	Co Coordinator.	-
6.	Abstract	<p>Esterification is a reaction wherein acid reacts with alcohol to form ester and water. In the present investigation, reaction kinetics for Esterification reaction of citric acid with n-butanol to synthesis tributyl citrate (TBC) in an isothermal stirred batch reactor with continuous removal of water from the reaction mixture has been studied. For the kinetics of catalytic reaction, p-toluene sulfonic acid and methane sulfonic acid used as homogeneous catalysts which are compared with the kinetics of non- catalytic reaction. The reaction temperature were varied from 373K to 413K, the catalysts concentration were varied from 0.5 %(w/w) to 2 %(w/w) and the mole ratio of citric acid over n-butanol is varied from 1:3 to 1:8 for homogeneous catalysts where as for the non- catalytic reaction only temperature profile is studied between 373K to 413K. The effects of temperature, catalyst concentration, and reactant mole ratio on the conversion of citric acid were studied and optimized conditions has been considered at 1:4 mole ratio with 1 %(w/w) catalyst loading at 403K. The irreversible second order kinetic rate equation was proposed to fit the experimental data. The kinetics parameters like rate constant, activation energy and frequency factor were estimated using Arrhenius plots. The conversion of citric acid was also found to be proportional to the mole ratio of citric acid over n-butanol in the feed. It has been observed that the conversion of citric acid</p>

		increases with temperature, mole ratio and concentration of catalyst. Further, autocatalytic reaction could be recommended since colour of final product was found to be 1-2 on gardner scale which is far better than using para-toluene sulfonic acid (7-8) and methane sulfonic acid (4-6).
7.	Month and Year of Commencement	October, 2013
8.	Month and Year of Completion	September, 2014
9.	Amount received	2.20 Lakh
10.	Amount spent till date	2.10 Lakh
11.	Present Status	Completed

Department of Electrical Engineering

1	Title	Study of dynamic behavior of the doubly fed induction generator used in wind power application under grid fault condition
2	Funding/ Sponsoring Agency	Project seed money under TEQIP-II
3	Amount	2.98 Lakh
4	Coordinator	Prof.S.D.Bankar
5	Co Coordinator.	Dr. D. B. Talange (Prof. COEP)
6	Abstract	<p>In recent years there is lot of emphasis on use of nonconventional sources of energy particularly wind energy for power generation. Out of the total installed capacity of 20492MW renewable power in the country, Wind Power projects share around 14156MW which is less as compared to other developed countries. This needs to be improved to strengthen the energy security and reliability. The India has vast resources for wind and solar out of which wind energy are commercially viable. However the research and development in this field is not enough for Indian requirements. An attempt is directed through this project to bridge this gap.</p> <p>Doubly fed induction generators have become the most common type of wind turbine generators. These wind plants are required to have grid ride through capabilities. The low- or zero-voltage ride-through (LVRT) requirement is difficult to satisfy for wind plants equipped with doubly fed induction generators (DFIGs). As the stator of a DFIG is directly connected to the grid, the whole DFIG system is sensitive to grid disturbances. Abrupt stator voltage sag due to a grid fault produces a dc component in the stator flux. This dc stator flux induces a large voltage in the rotor circuit and drives the RSC to over modulation. Due to this high induced voltage, a large transient current appears in the rotor circuit. This large transient current may damage the power electronic converters and result in disconnection of the wind turbine generators.</p> <p>One common LVRT solution is to install a crowbar circuit across the rotor terminals. When the rotor over current is detected, the crowbar circuit short circuits the rotor terminals, isolates the converters from the rotor, and the RSC triggering is blocked. This provides conservative protection to the rotor circuit and the RSC and at the same time changes the DFIG to a regular induction machine,</p>

		<p>which absorbs reactive power from the grid. This occurs at the exact same time when the grid needs reactive power support.</p> <p>For large wind plants, it is not only desired to keep the DFIGs connected to the grid, but also desired to maintain the dynamic active and reactive power control of the DFIGs during grid faults. The conservative crowbar protection should be the last choice to limit transient rotor currents. According to the grid codes (FERC) these plants are required to remain connected to the grid in the event of voltage dip. The LVRT requirement is very important but it is difficult to satisfy for wind plants using DFIG system. This is because the stator of DFIG is directly connected to the grid and hence complete DFIG system is very much sensitive to grid disturbances.</p> <p>A successful low voltage ride through (LVRT) scheme is the main requirement for reliable and uninterrupted power generation for wind turbines equipped with DFIG. To enhance LVRT capacity a feed forward current control scheme is designed and implemented for rotor side converter of DFIG and it can be observed that the rotor current is significantly controlled under the sever grid fault condition.</p>
7	Month and Year of Commencement	January 2014
8	Month and Year of Completion	January 2015
9	Amount received	2.98 Lakh
1	Amount spent till date	2.98 Lakh
1	Present Status	Completed

Department of Chemical Engineering

1.	Title	Study of removal /degradation of organic pollutants using hybrid techniques.
2.	Funding/ Sponsoring Agency	TEQIP-II
3.	Amount	2.4 lakh
4.	Coordinator	Mrs. S. M. Jadhav
5.	Co Coordinator.	-
6.	Abstract	<p>Acoustic cavitation has attracted the attention of many researchers due to its ability to degrade the complex organic pollutants. The degradation of pollutants by cavitation occurs by two ways. One thermal decomposition i.e. pyrolysis of the compound trapped in the bubble and second is generation and attack of hydroxyl radicals.</p> <p>Since these methods are not economical if applied individually , Hybrid techniques are proposed to enhance the rate of degradation of organic pollutant. These hybrid methods include the combination of acoustic cavitation with H₂O₂, fenton, photo-fenton, and photocatalytic processes.</p>
7.	Month and Year of Commencement	30 October 2013
8.	Month and Year of Completion	Dec 2014
9.	Amount received	2.4 lakh
10.	Amount spent till date	2.4 lakh
11.	Present Status	Completed

Department of Production Engineering

1.	Title	Synthesis of Polyamide 6,6 nano fibers of various diameters and densities on E- glass fabric by electrospinning process
2.	Funding/ Sponsoring Agency	DRDO R&DE(Engineers) Alandi Road, Dighi, Pune - 15
3.	Amount	5.20 lakh
4.	Coordinator	Dr Anand Bhalerao
5.	Co Coordinator.	Mr Sachin Chavan
6.	Abstract	Synthesis of Polyamide 66 Nanofibers by using electrospinning method with different diameters and different densities on the glass fabric to increase the compressive strength of the composite.
7.	Month and Year of Commencement	26 June 2013
8.	Month and Year of Completion	25 June 2015
9.	Amount received	5.20 lakh
10.	Amount spent till date	5.20 lakh
11.	Present Status	Completed

ACADEMIC YEAR 2012-13**Department of Production Engineering**

1.	Title	Modernization of Metrology and Quality Control Lab
2.	Funding/ Sponsoring Agency	AICTE, Under MOBROBS
3.	Amount	13.0 lakh
4.	Coordinator	Prof. R. N. Patil
5.	Co Coordinator.	Shri. M. J. Patil
6.	Abstract	<p>A coordinate measuring machine is a device for measuring the physical geometrical characteristics of an object. This machine may be manually controlled by an operator or it may be computer controlled. Measurements are defined by a probe attached to the third moving axis of this machine. Probes may be mechanical, optical, laser, or white light, amongst others. A machine which takes readings in six degrees of freedom and displays these readings in mathematical form is known as a CMM.</p> <p>CMM has got a number of advantages. The precision and accuracy given by a CMM is very high. It is because of the inherent characteristics of the measuring techniques used in CMM.</p> <p>Following are the main advantages that CMM can offer :</p> <p>Flexibility, Reduced Setup Time, Single Setup Improved Accuracy , Reduced Operator Influence Improved Productivity</p> <p>These features of CMM make it a versatile machine and hence inclusion of the same in curriculum is need of the time.</p>
7.	Month and Year of Commencement	Feb 2013
8.	Month and Year of Completion	Completed 2014
9.	Amount received	13.0 lakh
10.	Amount spent till date	13.0 lakh
11.	Present Status	Completed`

Department of Mechanical Engineering

1.	Title	Modernization of Thermal Lab
2.	Funding/ Sponsoring Agency	BVDU
3.	Amount	13,50000/-
4.	Coordinator	M.A.Kadam
5.	Co Coordinator.	---
6.	Abstract	Steam power plant Of 1 KW output was installed. we calculate heat balance sheet, heat rate, incremental heat rate, plant efficiency ,dryness fraction, plot graph load and plant efficiency, steam consumption, specific steam consumption, oil fired boiler with fully automated was installed. Steam turbine is of single stage , Impulse with horizontal shaft. Boiler is non IBR oil fired fully automatic-600kg/hr. Eddy current dynamometer of 1 kW,speed 3000rpm.
7.	Month and Year of Commencement	
8.	Month and Year of Completion	Completed
9.	Amount received	13,50000/-
10.	Amount spent till date	13,50000/-
11.	Present Status	Completed 2014-15

ACADEMIC YEAR 2011-12

Department of Mechanical Engineering

1.	Title	Experimental and numerical analysis of tube in tube type heat exchanger with dimpled tube and twisted tape inserts.
2.	Funding/ Sponsoring Agency	BVDU Pune
3.	Amount	50,000/-
4.	Coordinator	Prof. D. G. Kumbhar
5.	Co Coordinator.	-----
6.	Abstract	<p>The goal of enhanced heat transfer is to encourage or accommodate high heat fluxes. This result in reduction of the heat exchanger size which generally leads to less capital cost, another advantage is the reduction of the temperature driving force which reduces the entropy generations. In addition, heat transfer enhancement enables heat exchangers to operate at smaller velocity, but still achieve the same or even higher heat transfer coefficient. This means that a reduction of pressure drop, corresponding to less operating cost, may be achieved. All these advantages have made heat transfer enhancement technology attractive in heat exchanger applications. Heat transfer enhancement techniques can be classified into two types as passive methods and active methods. In passive methods, inserts are used in the flow passage to augment the heat transfer rate, are advantages compared with active techniques, because the insert manufacturing process is simple and these techniques can be easily employed in an existing heat exchanger. In the design of compact heat exchangers, passive techniques of heat transfer augmentation can play an important role if a proper passive insert configuration can be selected according to heat exchanger working condition. The passive methods also uses techniques such as surface coating, rough surfaces, extended surface, swirl flow devices, convoluted (twisted) tube, additives of liquids and gases etc. The other is the active method which requires extra power sources, e.g. mechanical aids, flow induced vibrations, surface fluid vibrations, injection and suction of the fluid, jet impingement and use of electrostatic fluids.</p>
7.	Month and Year of Commencement	2011-12
8.	Month and Year of Completion	2014-15

9.	Amount received	50,000/-
10.	Amount spent till date	50,000/-
11.	Present Status	Completed

Department of Chemical Engineering

1	Title	Sequestration of CO ₂ from industrial combined heat and power plant by evolution of solid sorbents as a retrofit technology.
2	Funding/ Sponsoring Agency	AICTE-RPS
3	Amount	5,35,000/-
4	Coordinator	Mrs. K.S.Kulkarni
5	Co Coordinator.	--
6	Abstract	Carbon dioxide (CO ₂) is a greenhouse gas that occurs naturally in the atmosphere. Human activities, such as the burning of fossil fuels and other processes, are significantly increasing its concentration in the atmosphere, thus contributing to earth's global warming. Most of the adsorbents used for CO ₂ have been synthesized from precursors based on the fossil fuels like petroleum products, acetylene etc. These precursors are destined to get depleted one day. Moreover, the cost of these raw materials is expected to keep on increasing day by day. It is therefore necessary that we look for alternative which is cheap and easily available. The flue gas which contains mixture of CO ₂ , SO ₂ and steam, moisture, NO _x etc. Naturally occurring adsorbent will be used to adsorb CO ₂ which are very cheap as compare to other adsorbents. If we succeed in this search there would never be any fear of them getting depleted.
7	Abstract	
8	Month and Year of Commencement	February 2012
9	Month and Year of Completion	June 2015
1	Amount received	5,35,000/-
1	Amount spent till date	5,35,000/-
1	Present Status	Completed

Department of Production Engineering

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 lakh
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	60000/-
10.	Amount spent till date	60000/-
11.	Present Status	Completed

Department of Mechanical Engineering

1.	Title	Heat transfer and geometrical considerations in solar parabolic through collector
2.	Funding/ Sponsoring Agency	BVDU Pune
3.	Amount	50,000/-
4.	Coordinator	Prof.M.A.Kadam
5.	Co Coordinator.	-----
6.	Abstract	<p>A trough collector having a length of 3m and an aperture of 1m is required to be made with it's the collector tube placed at its focus to collect solar energy for heating water. Design the collector using suitable reflecting surface preferably strips of reflecting mirrors / aluminum foil. Also design the support structure for good stability.</p> <p>The absorbing tube should have diameter of 50 mm and should be painted black (for good absorbitivity enclosed in a 100 mm transparent plastic / glass cylindrical enclosure. Design a structure to place it at the focus of the reflector. Make survey of black paints available in the market and test their absorbitivity. Use a paint having maximum absorbitivity. Suggest suitable mechanisms for hourly tracking the collector for orienting the sun for receiving maximum radiation.</p>
7.	Month and Year of Commencement	2011-12
8.	Month and Year of Completion	2014-15
9.	Amount received	50,000/-
10.	Amount spent till date	-----
11.	Present Status	ongoing

Department of Production Engineering

1.	Title	Multi Scale characterization and development of biofunctionalized nanofibers
2.	Funding/ Sponsoring Agency	Institute of Engineers , India(IEI)– Research and Development Grant
3.	Amount	Rs. 50,000/-

4.	Coordinator	Prof S.M.Shendokar
5.	Co Coordinator.	---
6.	Abstract	Multi Scale characterization and development of biofunctionalized nanofibers
7.	Month and Year of Commencement	5 Dec 2011
8.	Month and Year of Completion	Ongoing
9.	Amount received	50,000/-
10.	Amount spent till date	Nil
11.	Present Status	Ongoing

ACADEMIC YEAR : 2011-12

Department of Civil Engineering

1.	Title	Incipient motion condition of non uniform sediment in alluvial rivers
2.	Funding/ Sponsoring Agency	Bharati Vidyapeeth Deemed University ,Pune
3.	Amount	Rs 50,000/-
4.	Coordinator	Prof. P.T.Nimbalkar
5.	Co Coordinator.	
6.	Abstract	Motion of the sediment is characterized by incipient motion condition. It occurred due to change in flow conditions such as discharge, bed slope, depth etc. It is very important for hydraulic Engineer to know knowledge of hydraulic conditions at which sediments will start moving from various views such as stability of the structures, siltation of reservoir, and design of stable channel. Experiments will be conducted for studying incipient motion condition for non-uniform sediments and attempt will be made to give method for computing critical shear stress for given size of non-uniform sediment.
7.	Month and Year of Commencement	March 2012
8.	Month and Year of Completion	Ongoing
9.	Amount received	
10.	Amount spent till date	
11.	Present Status	Ongoing

Department of Computer Engineering

1.	Title	Integrated rogue access point detection system in wireless network
2.	Funding/ Sponsoring Agency	AICTE- RPS
3.	Amount	04,50,000/-
4.	Coordinator	Prof. Dr. S. H. Patil
5.	Co Coordinator.	Prof. Amol K. Kadam
6.	Abstract	<p>One of the most challenging network security concerns for network administrators is the presence of rogue access points. Rogue access points, if undetected, can be an open door to sensitive information on the network. Many data raiders have taken advantage of the undetected rogue access points in enterprises to not only get free Internet access, but also to view confidential information. Most of the current solutions to detect rouge access points are not automated and are dependent on a specific wireless technology. In this paper, we present a rogue access point detection approach. The approach is an automated solution which can be installed on any router at the edge of a network. The main premise of our approach is to distinguish authorized WLAN hosts from unauthorized WLAN hosts connected to rogue access points network. Simulation results verify the effectiveness of our approach in detecting rogue access points in a WLAN network subnets.</p> <p>A fundamental problem for network intrusion detection systems is the ability of a skilled attacker to evade detection by exploiting ambiguities in the traffic stream as seen by the monitor. We discuss the viability of addressing this problem by introducing a new network forwarding element called traffic normalize.</p>
7.	Month and Year of Commencement	March 2011
8.	Month and Year of Completion	March 2013
9.	Amount received	4,50,000/-
10.	Amount spent till date	4,50,000/-
11.	Present Status	Complete

Department of Civil Engineering

1.	Title	Cavitation Spillways
2.	Funding/ Sponsoring Agency	BVDU
3.	Amount	50,000/-
4.	Coordinator	Dr.A.R.Bhalerao
5.	Co Coordinator.	V.B.Thombare
6.	Abstract	Physical Model studies are inevitable for modelling of flow over spillway. The numerical model is done using validation of results of physical model. The gain in discharge is at the cost of flow conditions over the spillway. Tendency of shear layer separation increased as the pier was placed downstream.
7.	Month and Year of Commencement	March 2012
8.	Month and Year of Completion	December 2014
9.	Amount received	50,000/-
10.	Amount spent till date	-
11.	Present Status	-

ACADEMIC YEAR 2010-11

Department of Production Engineering

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 lakh
4.	Coordinator	Dr.A.R.Bhalerao
5.	Co coordinator	Mr.S.S.Chavan
6.	Abstract	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.
7.	Month and Year of Commencement	September 2010
8.	Month and Year of Completion	September 2013
9.	Amount received	Rs. 10 Lakh
10.	Amount spent to till date	Rs. 10 Lakh
11.	Present Status	Completed

Department of Computer Engineering

1.	Title	Integrated Rogue Access Point system in WLAN
2.	Funding/ Sponsoring Agency	AICTE Research Promotion Scheme
3.	Amount Sanctioned	Rs. 4.5 lakh
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 lakh
10.	Amount spent to till date	Rs. 4.5 lakh
11.	Present Status	Completed

Department of Electronics Engineering

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

Department of Electronics Engineering

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

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 lakh
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 lakh
10	Amount spent to till date	Rs. 5.0 lakh
11	Present Status	Completed

ACADEMIC YEAR 2006-07**Department of Computer Engineering**

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 lakh
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 lakh
10.	Amount spent to till date	Rs.2.15 lakh
11.	Present Status	Completed

Department of Chemical Engineering

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 lakh
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

Department of Chemical Engineering

1.	Title	Modernization of various Chemical Engineering Laboratories
2.	Funding/ Sponsoring Agency	A.I.C.T.E. MODROBS
3.	Amount sanctioned	Rs.12.00 lakh
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 lakh
10.	Amount spent to till date	Rs.12 lakh
11.	Present Status	Completed

Department of Electronics Engineering

1.	Title	Fiber Optic sensors in biomedical applications
2.	Funding/ Sponsoring Agency	Institution of Engineers (India), Kolkata
3.	Amount sanctioned	Rs. 0.5 lakh
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 lakh
10.	Amount spent to till date	Rs. 0.5 lakh
11.	Present Status	Completed

Department of Electronics Engineering

1.	Title	Newspaper reader for blind people
2.	Funding/ Sponsoring Agency	IEI, Kolkata
3.	Amount sanctioned	Rs.0.2 lakh
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 lakh
10.	Amount spent to till date	Rs.0.2 lakh
11.	Present Status	Completed

Department of Mechanical Engineering

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 lakh
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	Completed
9.	Amount received	Rs. 21.54 lakh
10.	Amount spent to till date	Rs. 21.54 lakh
11.	Present Status	Completed

Department of Computer Engineering

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 lakh
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 electroencephalograph 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 lakh
10.	Amount spent to till date	Rs.4. 60 lakh
11.	Present Status	Completed

Department of Production Engineering

1.	Title	Modernization of Metallurgy Laboratory
2.	Funding/ Sponsoring Agency	AICTE (Under MODROBS), New Delhi
3.	Amount sanctioned	Rs.5.3 lakh
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 lakh
10.	Amount spent to till date	Rs.5.3 lakh
11.	Present Status	Completed

Department of Electrical Engineering

1.	Title	Microprocessor based Phasor Group Testing of Three Phase Transformer
2.	Funding/ Sponsoring Agency	Mahati Electrics
3.	Amount sanctioned	Rs.0.2 lakh
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 lakh
10.	Amount spent to till date	Rs.0.2 lakh
11.	Present Status	Completed

Department of Electrical Engineering

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 lakh
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 lakh
10.	Amount spent to till date	Rs.0.25 lakh
11.	Present Status	Completed

ACADEMIC YEAR 2005-06**Department of Mechanical Engineering**

1.	Title	MODROBS Heat Engines Laboratory
2.	Funding/ Sponsoring Agency	AICTE , New Delhi
3.	Amount sanctioned	Rs.10.0 Lakh
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 Lakh
10.	Amount spent to till date	Rs.10.0 Lakh
11.	Present Status	Completed

Department of Chemical Engineering

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 lakh
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	Completed
9.	Amount received	First Year of award Rs.4.6 lakh Second Year award Rs.3.1 lakh

Department of Civil Engineering

1.	Title	Modernization of Environment Engineering laboratory
2.	Funding/ Sponsoring Agency	AICTE,(MODROBS)New Delhi
3.	Amount sanctioned	Rs. 6.0 lakh
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 quantity 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 lakh
10.	Amount spent to till date	Rs. 6.0 lakh
11.	Present Status	Completed

ACADEMIC YEAR 2004-05**Department of Electronics Engineering**

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