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# INSTITUTE TENETS

## Vision

**“A leading institution imparting quality engineering and management education developing creative and socially responsible professionals.”**

## Mission

- To provide state of the art infrastructure, motivate the faculty to be proficient in their field of specialization and adopt best teaching-learning practices.
- To impart engineering and managerial skills through competent and committed faculty using outcome based educational curriculum.
- To inculcate professional ethics, leadership qualities and entrepreneurial skills to meet the societal needs.
- To promote research, product development and industry-institution interaction.

## Quality Policy

**” Highly committed in providing quality, concurrent technical education and continuously striving to meet expectations of stake holders”.**

## Core Values

**Professionalism**

**Empathy**

**Synergy**

**Commitment**

**Ethics**

**P.E.S. College of Engineering**

**Mandya - 571 401, Karnataka**

**(An Autonomous Institution Affiliated to VTU, Belagavi)**

**Grant -in- Aid Institution (Government of Karnataka)**

**Accredited by NBA, New Delhi, Approved by AICTE, New Delhi.**

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Late Sri. K.V.SHANKARAGOWDA, a Scholar and an Educationist, was the founder of People's Education Society ®, Mandya. He was also known as 'PURUSHA SARASWATHI' for his enormous contribution towards promotion of education in predominantly agriculture oriented Mandya district. Poet Laureate KUVEMPU called him as 'NITHYA SACHIVA' for his dedicated work towards upliftment of rural people, as Minister of Education in the Government of Karnataka.

Sri.K.V.Shankaregowda, who had great social concern was appalled by the educational backwardness of Mandya district and wanted to contribute to the development of education in the district. Encouraged by the idea of an over-all educational advancement of the district, eminent social workers of the era, under the guidance of Sri K.V.Shankaregowda, founded and registered People's Education Society in 1958. The Establishment of the People's Education Society at Mandya can be said to be a highly important voluntary effort made for the progress of education in the district. P.E.S College of Engineering was started in 1962 under People's Education Society.

Dr.H.D.CHOWDAIAH, former Member of Legislative Assembly and Council, Government of Karnataka, a great visionary and a strict disciplinarian, is presently the President of the People's Education Trust®. Honourable President is the eminent architect of all the institutions under People's Education Trust®. He has taken many constructive initiatives for the progress of different institutions under the trust. He has been conferred with many awards and honours by various associations and institutes for his service and contributions to the society, notable among which is honorary doctorate by Karnataka Open University in the year 2012 and Chunchashree award by Sri Adichunchanagiri Mahasamsthana Math in the year 2018.

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## Presidents Message:



I am immensely proud to congratulate the P.E.T Research foundation, PESCE, Mandya for their perseverance in crossing the major milestone of producing over hundred scholarly doctorates on this occasion. I am very happy to note that PESCE, Mandya is bringing out “*HONORIS CENTUM - 2018*” in recognition of accomplishing one hundred doctorates. This souvenir helps you to get acquainted with the scholars and guides in their successful educational journey. P.E.T Research foundation has taken significant steps in pursuit of academic excellence through scholarly research. While I am happy with the accomplishments of PESCE, Mandya, our vision is to emerge as one of the major educational institutions with global perspective.

I am happy to note that such an achievement is based on the outcome of active research work carried out by the researchers of our institute in recent years. I congratulate the Principal and faculty involved in research on this occasion for their achievements and further call upon all the faculty members and research scholars to work with greater zeal and dedication to achieve higher accolades in research.

With best wishes

**Dr. H D Chowdaiah**  
President  
People Education trust  
Mandya

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## Principal's Message:



Tribulations and sacrifices come along with punctuations of successes and failures. Happiness intertwines with disappointments. Research is something which one should desire, discover and experience. Our institute vision is simultaneously local and global. The special focus of our institution is to promote quality education, ethical research and selfless service. The exemplary infrastructural facilities, the team of highly qualified and dedicated faculty and panorama of vivifying landscapes of vast campus will surely take the institute to enviable heights in its capabilities and achievements.

In the meantime, my dear researchers, let us engineer our minds, hearts and hands so that we can go out and conquer this globalizing and material-oriented world. We must desire, discover and experience the essential things that will ease and accelerate our climb to this mountain of academic excellence. We may forget our location; but always bear in mind our direction.

I am happy to note that our institute has made great strides in the path of research by crossing the milestone of one hundred dissertations in its journey of academic excellence. On this occasion, I congratulate all the research guides and scholars for their sustained and dedicated efforts in accomplishing a milestone achievement in the history of our great institute.

Added to the above, a special mention is essential about TEQIP Phase-II, sub component 1.1 and TEQIP Phase-III, subcomponent 1.3 for providing extensive academic and financial support for many of our academic and Research activities.

With all good wishes

**Dr. H V Ravindra**

Principal

P E S College of Engineering, Mandya.

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## Dean's (R & D) message



Research in simple terms refers to search for knowledge. It is a scientific and systematic search for information on a particular topic or issue. It is also known as the art of scientific investigation. Thus, research is an original addition to the available knowledge, which contributes to its further advancement.

PESCE Research Foundation is coming out with its Research Bulletin “HONORIS CENTUM - 2018” in order to acknowledge the achievement of the research guides and research scholars of the institute in crossing the milestone of successfully submitting one hundred Dissertations.

I would like to congratulate our distinguished guides and research scholars for putting in consistent efforts, amidst their regular academic pressures, to reach this new height in research accomplishment. It is heartening to note that the Research activity, which started in a small scale at the beginning of this millennium in our institute, has grown steadily over the years and the achievements in the past two years is significant in terms of the number of successful submission of Doctoral Dissertations as well as Research publications. Today we have 104 Doctoral Dissertations and around 1300 technical articles {presented and published} to our credit.

Our core areas of research include Advanced Materials, Condition Monitoring, Tribology, Structural Analysis, Fluid Systems, VLSI Design, Signal Processing, Biomedical Engineering, Environmental Engineering, Image Processing, High Voltage Engineering, Basic Sciences to mention a few.

At this junction, I thank Dr.H.D.Chowdaiah, honourable Chairman of Peoples Education Trust, who is showing keen interest in enhancing the research output of the institute. Also I thank our Principal Dr. H.V.Ravindra for his motivational initiatives resulting in new accomplishments. I thank the assistance and contribution of TEQIP funding, for the research activities of our institute.

I thank all the research guides and scholars for their research contributions to this bulletin. I whole heartedly thank the editorial team and office staff of Research Centre for their unstinted efforts in bringing out this bulletin in the present form.

Dean (R&D)

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## Editorial



Dear Colleagues

It gives great pleasure to welcome you to the new edition of our research bulletin “HONORIS CENTUM - 2018” in pursuit of recognizing the successful accomplishment of over hundred doctorate from P.E.T Research Foundation, PESCE, Mandya. This issue of research bulletin “HONORIS CENTUM – 2018” highlights the span of expertise over years of research accomplishment.

Before looking ahead, however, we would like to offer a word of thanks to our scholarly researchers, readers, contributors, and our esteem faculty fraternity for their support to improve the quality of this edition of Research Bulletin. We are a team whose work is in progress actively seeking ideas from campus and community in terms of quality of research, goals, and vision. We remain open to where we are going and how we will get there.

We are happy to report that our research foundation is experiencing steady and healthy growth over years from its inception in the year 2002. In past years the research foundation was able to organize various conferences, workshops and research activities in order to facilitate the research scholar and guides. We are happy to state that P.E.T research foundation is able to produce over hundred doctorates and have over 55 research guides who are active in publishing and presenting scholarly articles in national and international journals/conferences. Also we have over 150 research scholars who are pursuing their doctorates. Research has been carried out in different streams of technological advancements in engineering streams and various social issues have been addressed by the humanities, with particular emphasis on quality, safety, systems, and research outcomes.

We would like to acknowledge the efforts taken by all the faculty members for their active participation to help us shape this Research Bulletin. We also thank research scholars from various institutes who have shown keen interest to their research publication.

Our special thanks to TEQIP (Phase-II, sub component 1.1 and Phase-III subcomponent 1.3) facility of our institution for extending academic and financial support for Researchers, to contribute in research activities/Publications/patent filing; for taking up research projects, providing Seed Money for R & D for faculty research projects and also for sponsoring Fees/expenditure meant for carrying out research.

Further, on behalf of the institution, Research bulletin team, we wish all the researchers a great success in all of their future endeavors. We look forward to our journey together as we develop PESCE into its fullest potential.

**Editorial team**

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# SHOWCASING RESEARCH

## Abstracts of Dissertations

## Dissertation No. 1

Research Scholar	Title of the thesis	Guide
 P N Ravindra Rtd Executive Engg, BWSSB Bangalore	<h3 style="margin: 0;">Modeling of Innovative Activated sludge process</h3>	 Dr. Ramalingaiah L Principal(Retd) P E S C E,Mandya
Registration for PhD	Aug 1993	
University /Branch	UOM/Environmental Science	
Viva-voce exam for Award of PhD degree	June 2001	
<b>Abstract</b>		
<p>The main aim is to develop an inexpensive biological oxidation system in the new integrated configuration of activated sludge process, for the treatment of domestic wastewater under varying hydraulic and organic conditions. Inexpensive in this context has been used to indicate reduced annualized cash flows and less requirement of land. This system is to be named as innovative activated sludge process (ISAP).</p> <p>The specific objectives of this research study are as follows:            To develop methodology for the design of the Innovative activated sludge process, to develop mathematical models to stimulate the process behavior under a variety of influent and alternative operating conditions, to examine control strategies with fast measurements of control variables and parameters to minimize the impact on effluent quality when the system is subjected to perturbations, and to develop a knowledge base system for the operational control of the Innovative activated sludge process.</p>		

## Dissertation No. 2

Research Scholar	Title of the thesis	Guide
 K V Lokesh Professor Dept. of Civil Engg Dr.AIT Bangalore	<b>Transmission of Pollutants            through Soils into            Subsurface water in            certain Industrial pockets            of Karnataka – Problems            and Mitigation</b>	 Dr. B Shivalingaiah Professor (Retd) Dept of Env Engg P E S C E, Mandya
Registration for PhD		Aug 1993
University /Branch		UOM/Environmental Science
Viva-voce exam for Award of PhD degree		July 2003
<b>Abstract</b>		
<p>The objective of this research programme is to provide methodologies that will permit accurate prediction of the effect of specific pollutant released into the subsurface from a particular source activity that will have on the quality of groundwater at a point of withdrawal or discharge.</p> <p>The work was carried out in 3 stages as detailed below.</p> <p>The subsurface water samples were collected from the selected two sites periodically for physical and chemical analysis in order to determine the nature and extent of pollution. The well water quality variation is correlated with different seasons. The mechanics of flow of pollutants through porous soil media is studied through an experiment. A computer model for validating the experimental data is developed and the same model is extended to the other field conditions. The results of study have been compared with the maximum allowable permissible levels of the pollutants in water this would serve as a basic for recommending quantities upto which an industry could be permitted to discharge its treated effluents for reuse for irrigation, gardening or recharging the aquifers.</p>		

## Dissertation No. 3

Research Scholar	Title of the thesis	Guide
 Rajakumara H N Professor & Head Venkateswara College Of Engg Bangalore	<b>Development of road            Traffic Noise prediction            Model for Indian roads</b>	 Dr. R.M. Mahalinge Gowda Professor, Dept of Civil Engg PESCE, Mandya
Registration for PhD		2003
University /Branch		VTU/Civil Engineering
Viva-voce exam for Award of PhD degree		April 2007
<b>Abstract</b>		
<p>The transportation system has contributed significantly to the development of human civilization. The largest share of transport activity is by road . Over the last 40 years, there has been a ten-fold increase in the number of motorized vehicles. In future if the same trend continues, there will be a substantial increase in the number of vehicles, leading to enormous increase in the traffic noise levels in the road side environment. Traffic flow will increase because of the expected demographic explosion, slower rate of road mileage growth and faster rate of vehicles growth in the market. Consequently, the increased traffic flows will use a large proportion of the road network with the attendant noise levels becoming higher. Based on recent trends, it is possible to conclude with reasonable certainty that the noise will increase in the future and that more people will be exposed to the disturbing noise. People residing near roadways will consequently be exposed to the increased noise due to increase in the density of traffic. The construction of multi-lane motorways at a rapid rate in developed countries and even in many developing nations during the last few decades has allowed large volumes of traffic to travel at a sustained speed. Another important source of noise on the roads is the speed of traffic. As a general rule, the faster the vehicles move, the greater is the volume of noise generated. Surveys conducted in many countries have shown that traffic noise is one of the principal environmental nuisances in urban areas. In a rapidly urbanizing country like India, the transportation sector is growing quickly and the number of vehicles on Indian roads is increasing at a rate more than 7% per annum. The environmental quality of Indian cities is gradually degrading due to the incessant growth in the number of vehicles and the ever-expanding road network, resulting in the increase of road traffic noise. In almost all Indian cities, traffic noise levels exceed the allowable standards as specified by regulatory agencies. Therefore, managing road traffic noise is a challenging task for environmental engineers and urban planners. Urban planners often have to rely on road traffic noise prediction models for their assessment. In India, research studies on road traffic noise pollution are limited. A few important studies were conducted at the Indian Institute of Technology Roorkee. To the best of knowledge of the authors, India does not have an indigenous model that encompasses Indian traffic characteristics and prevailing environmental conditions. At present, the Federal Highway Administration (FHWA) Traffic Noise Model from USA has been widely used in India for traffic noise assessment. But traffic conditions in India are quite different from those in USA. Moreover,</p>		

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differences in the noise emission level of vehicles and noise surveying methods, as well as the mixed traffic and environmental conditions in India, have been found to decrease the prediction accuracy of the FHWA model. Jain et al have carried out investigations on the development of a comprehensive highway noise prediction model for Indian conditions. However, the deficiency of this model lies in the fact that the correction models used in their study for distance, volume, speed, gradient, ground cover and barrier have been borrowed directly from the FHWA model (USA) and the CoRTN model (UK). In view of this, there was a need to develop an urban road traffic noise prediction model by taking into consideration the current road traffic conditions in India. Therefore, the main objective of this study is to develop an urban road traffic noise prediction model under uninterrupted traffic flow conditions, taking into account all the major causative factors that influence the outdoor propagation of road traffic noise.

The main objective of this study is to develop a noise prediction model under uninterrupted traffic flow conditions. In this study, Bangalore city in Karnataka, India, was selected as the study area. The study locations are so chosen as to represent the different zones within an urban area like residential zone, commercial zone, silent zone and heavy traffic zone. Traffic noise was measured using the Leq index with an A-weighted scale of decibel unit for a 1-hour period at each study location. Based on field observed traffic data, a multiple regression noise prediction model was developed by considering all major causative factors. In the process of model development, a mean standard error of 2.32 dB(A) with r<sup>2</sup> value of 0.82 was observed. The validation of the model was done by collecting traffic data from Mysore city in Karnataka, India. The results of the model validation indicated that the model is accurate to 2.6 dB(A) with r<sup>2</sup> value of 0.78. Statistical analysis was also done using the paired t-test technique on predicted and observed noise levels. The results indicated that the t-statistical value of the model is less than the t-critical value. This means that the values predicted by the model fit significantly with the field observed ones and that the independent variables used in the model provide a better explanation of the dependent variable (Leq). The model developed in this study was also compared with the Federal Highway Administration (FHWA) Traffic Noise Model from USA and the prediction results indicated that the values obtained from the present model are in good agreement with the field observed values than the FHWA model. Therefore, the present model can be used for managing urban road traffic noise in the Indian context.

## Dissertation No. 4

Research Scholar	Title of the thesis	Guide
 Mohan.S Al Yamamah University, Riyadh, Kingdom of Saudi Arabia	<b>Approaches to Image            based 3D Modeling and            Rendering of Uncalibrated            Images: Optimization            Methods for a Single View            from Multiple Views</b>	 Dr. Murali S Professor & Head, Department of IS & E PESCE, Mandya
Registration for PhD		Sep 2004
University /Branch		University of Mysore/Computer Science
Viva-voce exam for Award of PhD degree		April 2009
<b>Abstract</b>		
<p>The proposed work attempts in reducing the user interaction to a considerable amount and aimed to have user friendliness while generating the 3D models. Here we are proposing a few methods for 3D wireframe modeling from a single image based on the depth cueing and edge length. Depth cueing is a method of representing the 3D objects on a two dimensional plane with varying intensities from foreground objects to background objects. The user interaction involved is to describe only this cue, which gives information about the depth. The 3D points are identified according to the intensity values specified in the depth cueing.</p> <p>On the other side, we found that from the edge length the user interaction can be avoided and the process of wireframe modeling can be automated. In the perspective images, parallel lines appear to meet at vanishing point. It is observed that the vertical edges of same length in world space vary in image space due to the perspective distortion. The length of these lines decreases towards the vanishing point. If we measure the length of each vertical edge segment, the longest edge which is closer to the viewpoint can be found. Then the depth cueing method of representing the object is applied to estimate the approximate depth information on each edge segment.</p> <p>Extending these ideas, a tour into picture was introduced. Given a single view image, the planes are extracted with a fixed reference and then each plane is mapped on to a 3D cuboid. A walk through on this 3D cuboid with photo realistic result was achieved.</p>		

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## Dissertation No. 5

Research Scholar	Title of the thesis	Guide
 <p>Avinash N P.E.S. College of Engineering</p>	<p>View Metrology from Uncalibrated Images: Approaches to Find Distance Factors</p>	 <p>Dr. Murali S Professor &amp; Head, Department of IS &amp; E PESCE, Mandya</p>
Registration for PhD		September 2004
University /Branch		University of Mysore / Computer Science
Viva-voce exam for Award of PhD degree		February 2010
<p style="text-align: center;"><b>Abstract</b></p> <p>Work starts in developing computer vision based algorithms for the entire dissertation, which is pivoted on the idea of reconstructing the orthographic views of objects from their perspective views.</p> <p>This is the concept of graphics construction in perspective geometry, by computing in the Cartesian coordinate geometry.</p> <p>Based on the perspective geometry principles derived, the following are the findings presented in the Ph.D. thesis:</p> <p>Vanishing point determination techniques using Inverse Hough Transform based approach.</p> <p>A novel Camera Calibration Technique using rectangular prism as the calibration object.</p> <p>View Metrology Principles derived to calculate the 3D features from a single image. Based on the principles derived, some applications were presented, viz.</p> <p>Application of Mosaicing Perspective Images using View Metrology Principles.</p> <p>Application of Speed Measurement of Moving Objects in Video using View Metrology Principles.</p> <p>Application of Building 3D Models and Rendering the Views accurately to the measurements made from the images using View Metrology Principles.</p>		

## Dissertation No. 6

Research Scholar	Title of the thesis	Guide
 H N Suma Professor & Head, Department of Medical Electronics BMSCE., Bangalore	<b>Pattern Recognition            Techniques for            Regionalizing the Activity            Patterns of the Human            Brain using FMRI            (Functional Magnetic            Resonance Imaging) Data</b>	 Dr. Murali S Professor & Head, Department of IS & E PESCE, Mandya
Registration for PhD		September 2004
University /Branch		University of Mysore/Computer Science
Viva-voce exam for Award of PhD degree		March 2010
<b>Abstract</b>		
<p>Brain is a complex structure comprising of numerous neurons which perform diverse yet mutually supportive functions. Any task performed by the human is the result of activation of a cluster of neurons. This cluster of neurons in the brain in medical terminology is referred to as activity map. These activity maps are unique and precisely localized for every task that is performed.</p> <p>A recent but fast advancing technique for measuring the brain activity is the fMRI technique. It works by detecting the changes in blood oxygenation and flow that occur in response to neural activity referred to as Blood Oxygenation Level Dependent (BOLD) method and works on the principle that when a brain area is more active, it consumes more oxygen and to meet the increased demand, blood flow increases to the active area. The variations in the magnetic properties of the region due to increased blood flow are captured by an advanced MRI scanner resulting in fMRI scans.</p> <p>An approach towards automating the process of analysis of these activity patterns is thus the need of the day. It not only helps the radiologist/neurosurgeon in understanding the minute details of all the features of the activity pattern but also help in fast diagnosis. The speeding up of the diagnosis process helps them cater to larger patient population in a specified time.</p>		

## Dissertation No. 7

Research Scholar	Title of the thesis	Guide
 H.L. Shashirekha Associate Professor, Dept of Computer Science, Mangalore University, Mangalore	<b>Ontology-Based Mining            for the recognition and            classification of            conceptually similar            documents</b>	 Dr. Murali S Professor & Head, Department of IS & E PESCE, Mandya
Registration for PhD		September 2005
University /Branch		University of Mysore/ Computer Science
Viva-voce exam for Award of PhD degree		March 2010
<b>Abstract</b>		
<p>Texts being the important sources of knowledge need to be classified for various applications such as web search, sorting emails and email routing. Text classification, the task of assigning a predefined set of labels to a text is gaining importance with the increasing amount of textual documents available both offline and online. Most of the research in text classification is based on keywords or bag-of-words approach. Bag-of-words although simple and easy to implement suffers from low precision and recall. Hence, it is necessary to mine the text for extracting the knowledge conveyed in the form of concepts for effective classification of texts instead of inefficient and inaccurate classification based on keywords. The conceptual knowledge so extracted is modeled as Ontology, which is a collection of concepts and their interrelationships. It is observed that very little work is done on automatic constructing of Ontologies and also Ontologies are not fully utilized for the text classification task. The objective of this research is to devise efficient algorithmic models for automatic construction of Ontology by extracting the conceptual knowledge for proper recognition and classification of texts under more than one category.</p> <p>The proposed research attempts to devise a multistage model for constructing Ontology by extracting the knowledge from the text, so that a given text could be properly recognized and labeled under different categories. It is proposed to design a domain dependent lexicon for pre-processing. Graph theoretic approach would be adopted for Ontology representation so that assigning labels to a text could become convenient by computing ontological distance measures. The effectiveness of the new models will be demonstrated by working on classified matrimonial advertisements. A comparative study of the proposed algorithms will be made with the very well accepted contemporary algorithms.</p>		

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## Dissertation No. 8

Research Scholar	Title of the thesis	Guide
 <p>Indiramma M Professor Dept. of CS &amp; E BMSCE, Bangalore</p>	<p>Multi Agent System based Collaborative Decision Making Framework with Trust Computation Model for Distributed Organization</p>	 <p>Dr K R AnandaKumar Professor Dept. of CS &amp; E, PESCE, Mandya</p>
Registration for PhD	March 2004	
University /Branch	VTU/ Computer Science & Engineering	
Viva-voce exam for Award of PhD degree	August 2010	
<p style="text-align: center;"><b>Abstract</b></p> <p>Collaborative Decision Making (CDM) is an important human activity and it has many practical applications in society, economy, management and engineering, etc. Many real world decision problems are involving uncertainty in which information may be incomplete or not available. This situation makes decision making a complex task. In this research work we present a trust computational model for multi agent collaborative work and a social decision making algorithm capable of aggregating the decisions of individuals based on trust. This agent based framework for collaborative decision making supports a diverse problem space and a trust based social decision algorithm for a distributed environment.</p>		

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## Dissertation No. 9

Research Scholar	Title of the thesis	Guide
 <p>R Girisha Training &amp; Placement Officer, Prof of CS &amp; E, PESCE, Mandya</p>	Some New Methodologies to Track Humans in a Single Environment Using Single and Multiple Cameras	 <p>Dr. Murali S Professor &amp; Head, Department of IS &amp; E PESCE, Mandya</p>
Registration for PhD	January 2006	
University /Branch	University of Mysore, Computer Science	
Viva-voce exam for Award of PhD degree	October 2010	
<b>Abstract</b>		
<p>The Final objective of Human Motion Analysis to analyze and interpret human action and the interactions between people and other object; better understanding of human behavior is the most interesting issues but this research assumes this problem his beyond its scope. However the trace of a person within a view is produced to identify any suspicious movement.</p> <p>In summary, the main focus is to track people when they are within a common ground plane using single camera initially and subsequently with multiple cameras in a single environment.</p>		

## Dissertation No. 10

Research Scholar	Title of the thesis	Guide
 Kumar Gowda Professor & Head, Vivekananda Institute of Technology, Bengaluru	<b>Strength Evaluation in            Bladed disc and Blisk in            Aero engines</b>	 Dr.S.L Ajit Prasad Professor Dept of Mechanical Engg PESCE, Mandya
Registration for PhD	April 2003	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	November 2010	
<b>Abstract</b>		
<p>Modern military aero engines set very high technology standards for component design, as they operate in an increasingly hostile thermo-mechanical environment. Bladed disks are most flexible elements in high speed rotating machinery. A structural analysis of these elements presents some challenges. These challenges stem from high stress gradients due to contact faces, the non-linearity's attending conforming contact with friction. Investigations have been carried out to develop and improve "Blisks" an integrated version of blades and disk, offering significant savings of weights.</p> <p>The present thesis, proposes a design methodology for possibility of upgrading the conventional bladed disk of a I stage compressor to blisk, using the linear program, i.e. Finite element analysis tool for linear shape optimization, as a dedicated 'design-tool' with similar operating conditions and design constraints.</p> <p>The study involves static stresses, frequency mapping, fatigue, over-speed and burst criteria. With advancement of computational techniques numerical tools are capable of addressing multiple parameters of design simultaneously and simulate operating conditions for better design with high confidence levels.</p> <p>Employing 3D models, possible reduction in the weight of disk is achieved through topological optimization program (Linear) using base line model of Bladed disk employing a finite element package ANSYS at design speed. It resulted in a blisk configuration, with 30% weight reduction against conventional bladed disk. Further, the analysis is processed to check other design criteria.</p> <p>The study institute a design methodology and advocates blisk against bladed disk without, compromising on operating conditions, safe margins for strength, frequency, low cycle fatigue, high cycle fatigue, over-speed and burst criteria.</p>		

## Dissertation No. 11

Research Scholar	Title of the thesis	Guide
 K.V. Mahendra Prashanth Professor, Dept of ECE, S J B I T Bangalore – 560060	A study of the noise frequency components effects on the physiological parameters and development of a headset prototype for protection	 Dr. V Sridhar Professor E & C Engg P E S C E Mandya
Registration for PhD	March 2003	
University /Branch	VTU / Electronics & Communication Engg	
Viva-voce exam for Award of PhD degree	2010	
<b>Abstract</b>		
<p>The research work substantiated the importance of studying the contribution of noise frequencies in evaluating health effects and their association with physiological behavior within human body. The research project also describes the design of active noise control based headset prototype using DSP (TMS320C6713 DSK) and audio daughter board (DSK_AUDI04).</p> <p>The proposed setup implements FxLMS algorithm to reduce noise levels, The results of the experiments show a significant noise reduction of 21-29 dB for industrial noise samples, in the low frequency range (&lt; 500 Hz), and 20-26 dB for tonal noise has been achieved. The feature of detection of abrupt sound is incorporated into the headset prototype by designing and implementing the "sliding overlapping window" method.</p> <p>The passive hearing protectors available are ineffective against these signals and can interfere with the perception of speech. This problem has also been solved by unmasking noise interference from speech using "zero crossing rates" and "sub-band energy detection" methods, recovering the desired speech signal from the noise.</p> <p>Thus, this proposed design of a DSP-based safety headset prototype system, for the industrial community, showed the best overall performance. It not only provides features of noise reduction but also detection and perception of abrupt sounds and speech signals for industrial applications.</p>		

## Dissertation No. 12

Research Scholar	Title of the thesis	Guide
 G. V. Naveen Prakash Professor, Dept of Mechanical Engg V V C E, Mysuru	<b>Condition Monitoring            Studies on Spindle            Bearing of a Drilling            Machine Tool Using            FEM, Multiple            Regression &amp; GMDH</b>	 Dr. H. V. Ravindra Professor, Dept of Mechanical Engg PESCE, Mandya
Registration for PhD		March 2003
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		March 2011
<b>Abstract</b>		
<p>Major concern in manufacturing is the quality of product. Machine tools are liable to deterioration in their performance level with respect to time due to various causes viz., wear, ageing, unbalance, looseness of parts etc. Among the machine tool elements, proper performance and functioning of bearings has always been a major concern since all the forces are transmitted to the bearings. During the machine tool operation, heat generated in the bearings is transferred to the surrounding through thermal conduction and convection. In the process, structure gets heated up causing thermal distortion. Thermal distortion is undesirable and need to be investigated. Drilling machine is a versatile machine tool used for drilling holes in the work piece. The quality of finished product depends mainly upon stability of different components of a drilling machine. Performance of the spindle bearings in terms of vibration for various disturbances has been studied using transient dynamic analysis. A single local defect in a spindle bearing outer race was simulated. The analysis was performed considering various depths of defect in different orientation. The pitting defect on spindle driver gear teeth was simulated. Performance of the spindle bearing has been studied in terms of vibration and Acoustic Emission signals during various drilling conditions. The experimental work consisted of drilling S.G cast iron block using high-speed steel drill bit. To investigate the dependence of vibration and AE parameters on the independent parameters, estimation of vibration and AE parameters was carried out using Multiple Regression Analysis and Group Method of Data Handling (GMDH).</p>		

## Dissertation No. 13

Research Scholar	Title of the thesis	Guide
 K. M. Sathish Kumar Associate Professor Dept of Mechanical Engg B M S I T, Bengaluru	<b>Monitoring the            Performance of Spindle            Bearings of a Lathe using            Multisensory Approach by            FEM, Multiple Regression            &amp; GMDH.</b>	 Dr. H. V. Ravindra Professor, Dept of Mechanical Engg PESCE, Mandya
Registration for PhD	March 2005	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	July 2011	
<b>Abstract</b>		
<p>In modern manufacturing environments, machinery failures are predictable. Condition monitoring identifies the characteristic changes of a process based on evaluation of signatures without interrupting the normal operations. Lathe is one of the most versatile and complex machine tools used for producing parts of different shapes with desired precision. By placing the sensors at various locations on the lathe structure, it is possible to extract more information about the health of the machinery. Quality of the finished products depends mainly on stability and rigidity of different elements of lathe. Vibration can be caused by a variety of factors which include unbalance, misalignment, looseness of parts, and wear of elements. Among the machine elements, bearings and gears contribute to the dynamics of machine-drives. The presence of unbalance forces and any defect in spindle bearing of lathe tool structure may induce vibration, which can ultimately impair dimensional accuracy.</p> <p>The broad area of research work involves performance study of spindle bearing of a lathe tool structure using FEM, Multiple Regression and GMDH. Here the lathe structure was modeled using finite element software with suitable elements. Modal analysis was performed to know the mode shapes and natural frequencies. Harmonic analysis was done to study the effect of unbalance forces on the structure. Transient response analysis was carried out to study the vibration of the spindle bearing due to induced defect on the inner race of a spindle bearing and on the gear tooth. The experimental analysis on the same lathe was done to determine the parameters such as vibration, Temperature, shock pulse, Acoustic emission signals for various cutting conditions. The lathe structure was analyzed experimentally. Finally the theoretical (FEA) and experimental results were compared. Further, by selecting the various independent parameters measured, the dependent parameter like the vibration and the AE signals were estimated using the tools such as multiple regression analysis and Group Method of Data Handling (GMDH).</p>		

## Dissertation No. 14

Research Scholar	Title of the thesis	Guide
 H K Srinivas Yellamma Dasappa Institute of Technology Raguvanhalli, 14 KM, Kanakapura Main Road, Bangalore-560062	<b>Applications of Artificial            Neural Network and            Wavelet Transform for            Vibration Monitoring of            Rotating Machinery</b>	 Dr.K.S.Srinivasan Professors Mechanical Engineering
Registration for PhD	December 2004	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	June 2011	
<b>Abstract</b>		
<p>The present work involves the simulation of rotor faults and studying their effects on the frequency components of vibration signals. The diagnostics of rotor faults has gained importance in recent years. Many papers in the literature have dealt with single faults, but normally more than one fault can occur in a rotor. The vibration analysis of rotating machinery can give an indication of the condition of potential faults such as unbalance, bent shaft, shaft crack, bearing clearance, rotor rub, combined unbalance and shaft bow, and shaft crack, and bearing clearance, combined shaft crack and bearing clearance. Artificial neural network (ANN) and wavelet transform (WT) have been applied for quantifying and classifying the rotor faults using frequency domain data.</p> <p>The experimental studies of the above faults are carried out. The rotor test rig is used to simulate the above mentioned rotor faults. The frequency analysis of the vibration signatures due to these faults has been carried out. In case of rotor rub, the effects have also been studied on the shape of orbits of shaft center motion. The experimental simulation studies of the rotor faults have shown that the faults affect the magnitude of the various harmonics of vibration signatures significantly. Further, the shapes of orbits in the case of rub are also affected.</p> <p>This work also describes the application of Artificial Neural Network (ANN) for the prediction of the effect of individual and combined faults of rotor on the frequency components of vibration signature of the rotating machinery. The network is trained using multilayer feed forward back propagation. Levenberg Marquardt algorithm is used to diagnose the rotating machinery faults using frequency domain data as input to train the network. The networks have been trained and tested with error goals and neurons.</p> <p>A new technique combining the wavelet transforms (WT) with Artificial Neural Network (ANN) is applied for the prediction of the effect of combined faults of unbalance and shaft bow and unbalance and shaft crack on the frequency components of vibration signature of the rotating machinery is used. The wavelet transform approach enables the discrete manner observation of different frequency components over the full spectrum. This method is tested successfully for combined faults of unbalance and shaft bow and unbalance and shaft crack.</p>		

## Dissertation No. 15

Research Scholar	Title of the thesis	Guide
 B.S. Shivakumar Associate Professor Dept of I & P Engg P E S C E, Mandya	Investigation of the effects of the Posture and Vibration on the Heart rate during motorcycle riding in Indian context	 Dr. V Sridhar Professor E & C Engg P E S C E Mandya
Registration for PhD	August 2004	
University /Branch	University of Mysore /Electrical & Electronics	
Viva-voce exam for Award of PhD degree	October 2011	
<b>Abstract</b>		
<p>Transport, in particular motorcycle, has taken a prime place in modern life. At the same time, patient rate is growing at 14% per year. Amongst the health problems, cardiovascular diseases are playing a major role. Heart rate is a good indicator of the health of the human body. Hence, the present study investigates the presence of any relation between the use of motorcycles and heart rate in particular. The investigation focused on two major parameters of riding, i.e., posture and vibration.</p> <p>In surveys, motorcycle respondents rated heart disease more than respondents who use the public transport vehicle. In overall, above 50% of the respondents of both surveys felt that either vibration or posture is the important parameter responsible for their ill health. The preferred healthy postural angle of riding position was stated to be between 60° and 90° by rider respondents.</p> <p>Experiments revealed that average relative heart rate (ARHR) is more at trunk inclination of 60° and also at 105° compared to 90°. Finite element modeling and analysis (FEMA) also showed that Vms is more at trunk inclinations of 60° and 105° compared to 90°.</p> <p>Also, experiments revealed that ARHR has a high correlation with hand arm vibration (HAV) and whole body vibration (WBV) average accelerations. However, magnitudes of HRs are more sensitive to variation of HAV ave acceleration than variation of WBV ave acceleration. In FEMA, it was noticed that the increase in any one of either HAV or WBV forces increases Vms. However, magnitudes of Vms are more sensitive to variation of HAV force than variation of WBV force.</p> <p>The present research work proposes rider's posture around 90° trunk inclination with provision for mobility. The dangerous limits of HAV and WBV accelerations were calculated in order to observe the safety standards while riding. Suggestions have been made in the thesis to the manufacturers of motorcycle to incorporate necessary design changes to reduce both WBV and HAV with top priority to be given to reduce or eliminate HAV. It is also suggested that riders perform relevant yoga exercises to overcome the ill effect of riding on HR.</p>		

## Dissertation No. 16

Research Scholar	Title of the thesis	Guide
 Meghana Kulkarni Dept. of PG Studies, VLSI Design and Embedded Systems, VTU, Belgaum	<b>TIQ Technique Based            Low Power Flash Analog            to Digital Converter</b>	 Dr. V Sridhar Principal, P E S C E Mandya
Registration for PhD		May 2006
University /Branch		VTU, Belgaum.
Viva-voce exam for Award of PhD degree		November 2011
<b>Abstract</b>		
<p>This thesis addresses the design of Flash ADC using Threshold Inverter Quantizer (TIQ) Comparator, Quantized Differential (QD) Comparator, CMOS Linear Tunable Transconductance Element (CMOS-LTE) Comparator and Leakage Current Threshold (LCT) Comparator. The TIQ comparator uses two cascaded inverters as a voltage comparator and the QD Comparator uses Differential amplifier with cascaded inverters as a comparator. The TIQ Comparator is single ended and is very sensitive to power supply noise. The power dissipation in QD Comparator is relatively more. To overcome these problems, CMOS-LTE Comparator has been designed, which improves the Power Supply Rejection Ratio (PSRR) and also reduces the power dissipation. Reference voltages in all these comparators are generated by systematically sizing the transistors of the comparators, thus completely eliminating the resistive ladder network required for the architecture.</p> <p>The thesis also discusses LCT Comparator that uses the TIQ concept and leakage current for the generation of reference voltages. Accordingly, it is observed that, there is a substantial improvement in the PSRR and power dissipation. Finally the Optimized Flash ADC design with <math>2^n/2</math> comparators is discussed.</p>		

## Dissertation No. 17

Research Scholar	Title of the thesis	Guide
 G.S. Munawar Pasha Professor Dept of Civil Engg, G C E,Ramanagara	<h3 style="margin: 0;">Urban and Rural Bulk Precipitation Chemistry</h3>	 Dr.G.P. Shivashankara Professor, Dept of Civil Engg, PESCE, Mandya
Registration for PhD	November 2003	
University /Branch	VTU/ Civil Engineering	
Viva-voce exam for Award of PhD degree	2011	
<b>Abstract</b>		
<p>To examine the chemical composition of both urban and rural areas, we have undertaken a study during 2005–07 and have collected 580 bulk precipitation samples from nine pre-determined sites in Karnataka state, India, and analyzed them for various parameters such as pH, electrical conductivity, cations, and anions. The procedure of Standard Methods of 1995 was adopted for the analysis of the samples. The unit for all ionic concentrations is expressed in <math>\mu\text{eq}^{\text{L}^{-1}}</math>. To ensure accuracy of major ions, the samples were tested by calculating cation/anion ratios and charge balances (CB). Based on this analysis, the mean value of charge balance was found to be 3.38 and the ratio 0.90, which indicates that all the major ions were considered in the analysis.</p> <p>GIS maps were drawn for rainfall, pH and major cations and anions. The spatial variability of <math>\text{H}^+</math>, <math>\text{SO}_4^{2-}</math>, and <math>\text{NO}_3^-</math> showed a higher concentration in urban areas and minimum in rural areas. The spatial variability of rainfall quantity indicates that the Bangalore urban area received maximum rainfall (1270 mm) than other areas. A highly significantly positive correlation was obtained between <math>\text{H}^+</math> and <math>\text{NO}_3^-</math> in Hebbal urban area and positive correlation was obtained between <math>\text{H}^+</math> and <math>\text{NO}_3^-</math> in Jayanagar urban area. ANOVA test shows that in the urban areas the mean values of the parameters of <math>\text{H}^+</math>, <math>\text{Mg}^{2+}</math>, <math>\text{SO}_4^{2-}</math> and <math>\text{NO}_3^-</math> were highly significant at 1% level. This means that there was a spatial variation among different locations of urban area with respect to these parameters, whereas the mean values of the parameters <math>\text{Ca}^{2+}</math> and <math>\text{NH}_4^+</math> were found to be not significant. In rural areas, all the parameters are highly significant among different locations (1% level) except <math>\text{Ca}^{2+}</math> and <math>\text{Mg}^{2+}</math>. This indicates that a variation was observed from location to location with respect to all parameters in the rural areas. <math>\text{Ca}^{2+}</math> was found in homogeneous ions among different sites in urban and rural areas. Factor analysis indicates the sources of pollution detected in urban bulk precipitation including fuel combustion (<math>\text{SO}_4^{2-}</math> and <math>\text{NO}_3^-</math>), dust/soil-derived fractions (<math>\text{Ca}^{2+}</math>) and human excreta, sewage (<math>\text{NH}_4^+</math>) in the first component. In rural areas, dust/soil-derived fractions (<math>\text{Ca}^{2+}</math>), human excreta, sewage, livestock and agricultural activities (<math>\text{NH}_4^+</math>), and biomass burning and fertilizer applications (<math>\text{NO}_3^-</math>) are considered in the first component and soil resuspension (<math>\text{Mg}^{2+}</math>) in the second. The present study shows that the sources of <math>\text{Ca}^{2+}</math>, generated from dust-derived fractions in both urban and rural areas.</p>		

## Dissertation No. 18

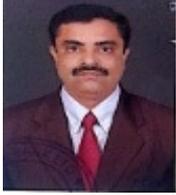
Research Scholar	Title of the thesis	Guide
 Sidde Gowda Professor, Dept of Civil Engg., SJCIT Chikkaballapur,	<b>Rural to urban migration            and Household            Environmental problems            in slums of Bangalore            Metropolitan city</b>	 Dr.G.P. Shivashankara Professor, Dept of Civil Engg, PESCE, Mandya
Registration for PhD	March 2003	
University /Branch	VTU/ Civil Engineering	
Viva-voce exam for Award of PhD degree	2011	
<b>Abstract</b>		
<p>Eighty percent of India's population resides in rural areas, but investments for growth are directed at capital-intensive urban centers forcing the rural poor migrate to urban areas for livelihood. This rural-urban divide in development is root cause for unprecedented growth of urban centers and slums. Population explosion is one of the most threatening issues facing contemporary India, particularly the Indian cities, owing to large-scale migration from rural areas and consequent rapid urbanization. India is a part of the global trend towards increasing urbanization. As per Census of India 2001, 27.8% of India's population (285 million) lives in urban areas and 72.2% in rural areas. Though the percentage decadal growth (1991-2001) of population in rural and urban areas is 17.9% and 31.2% respectively. The city of Bangalore, the capital of the Southern state of Karnataka, has grown to become the fifth largest urban center in India. It accounts for 33.98% of the urban population of Karnataka. Incidentally, it is also one of India's fastest growing cities. Its extra-ordinary transformation since the early 1990s from a sleepy and leafy greeny city into a people from neighboring states of Andhra Pradesh, Tamil Nadu and Kerala. The pattern of urban population in Bangalore during 1901-2001 shows that from 14.5 in 1911 to 50% in 2001. The area of Bangalore in a conurbation of 439square kilometer with a "green-belt" of 839 square kilometers. Bangalore is ill-equipped to respond to the explosive growth of population and changes it brought about. Rapid growth has taken its toll and it is now plagued by the ill-effects of urbanization with pollution, inadequate infrastructure and loss of open spaces. This growth has impacted the environment significantly leading to its degradation and formation of slums. While Bangalore has relatively fewer slums compared to India's major cities, the numbers are relative approximately 15-20% of metro-Bangalore's residents are slum dwellers compare to over30% in Kolkata and Mumbai. Slums are a major cause for health and environmental degradation. The major objective of this study is to examine the reasons for migration of rural people to urban areas and its impact on environment and health.</p> <p>The study has used both primary and secondary data. The primary survey is mainly composed of observations and interview through questionnaires method. Twelve main questions have been formulated which include particulars of household, dwelling details, demographic characteristics, reasons for migration, utility services, health and medical facilities, market and recreation facilities, disposal of garbage and sullage, solid waste, drainage system and toilet facilities and space index. Bangalore metropolitan city has 473</p>		

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slums (declared in 2004) and since it is difficult to innumerate all the households to conduct socio-economic survey, it has been spatially stratified into three ecological zones (core, intermediary and periphery) on the basis of population density characteristics. Data was collected with the help of questionnaire from the survey of 4560 households selected for slums from core areas, 43 from intermediary areas and 35 from periphery of the city. The questionnaire used in the survey is modeled on lines of similar studies by the Stockholm Environment Institute (SEI, 1993, 1994 and 1995) and Aligarh Environment Study Project (AESP, 1994, 1995). Of the 45,600 households in slums in the cities, we have sampled 10% for the study, i.e., 4560.

It is due to increasing population that many environmental problems come to surface. The study established that the high density reflects overcrowding, congestion in slums leading to problems like lack of accommodation, basic amenities and environmental problems. The study shows that the slums are spatially distributed with varying density, area, caste, language and religious groupings, and to availability of land (private and public). The determinants of migration are of two kinds: one is “pull” and other “push”. Multivariate logistic regression analysis suggests that unemployment, extreme poverty, natural disaster and wage rate contribute significantly to migration. Poverty, job search and joining relatives/ family have influenced in out-migration, while better opportunity, prior migrants and availability of jobs are the main pull factors for to-urban migration. The study will assist the planners and social scientist to implement and extend rural development programs as it provides an overview of the people involved in rural out-migration process and also identify the root causes of migration at individual and household levels. Slums in developing countries are characterized by inadequate shelter, overcrowding, inadequate water supply, poor sanitation, and contaminated food, solid waste and indoor pollution and are the greatest environmental threats to human health. These conditions are often compounded by poor nutrition and lack of education, which make people more vulnerable to and less able to cope with environmental threats. The low quality of life in slums is as much a result of unhygienic living condition as it is of the lack of economic sources. The chi-square analysis established that income and household environment conditions are significant at 1%. The study establishes that drinking water quality also get polluted because of bad storage of containers in the houses. The study concludes that water pollution is due to lack of hygienic practices. The prevailing practices of storage, collection and disposal of solid waste and their management in the slums are unsatisfactory resulting the accumulation of waste in hap hazardous manner. The study shows that lower-income households are familiar with the hazards of keeping open at homes but inefficient institutional arrangements for its periodic collection as made them helpless. The waste remains uncollected for weeks and months. Since the low-income households do not have any fly doors and windows because of poor economic condition, they are unable to do anything about the garbage collected in their households. Simple analysis regressions were used to assess the degree of relationship between diseases and other variables in the slums. The related variables of the diseases are highly significantly (at 1% level) related to dysentery, jaundice, malaria and respiratory diseases in various slums. It means that as the related variables and the diseases are positively correlated multiple regression models were used for pooled data to find out contributing variables to diseases in slums. The study demonstrates a few key environmental problems facing the households in the slums of the city. Due to inadequate access to environmental health facilities, in addition to overcrowding at sanitation facilities and hygiene, children of poor households face the greatest obstacles to health. The major limiting factor in achieving a sound environmental health in slums of any city is poverty. Poverty is a great polluter.

## Dissertation No. 19

Research Scholar	Title of the thesis	Guide
 Aswatha Associate Professor, Dept of Mechanical Engg B I T, Bangalore	Numerical Investigations and Parametric Studies of Flow and Heat Transfer Characteristics in Enclosed Cavities for Varied Aspect Ratios and Boundary Conditions	 Dr. C. J. Gangadhara Gowda Professor Dept of Mechanical Engg, PESCE, Mandya
Registration for PhD	June 2004	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	January 2012	
<b>Abstract</b>		
<p>The numerical studies on natural convection in cavities reported in the literature are limited. The correlations between the average Nusselt numbers versus Rayleigh numbers required to design an effective heat transfer cabinets are limited in the current literature. In this thesis, numerical studies on natural convection in cavities with different types of boundary conditions have been carried.</p> <p>The enclosure used for flow and heat transfer analysis has been bounded by adiabatic top wall, constant temperature cold vertical walls and a horizontal bottom wall. The bottom wall is subjected to temperature/heat flux/convective boundary conditions. The temperature and heat flux boundary conditions are varied as uniform / sinusoidal / linearly varying along the bottom wall. Nusselt numbers are computed for Rayleigh numbers (Ra) ranging from <math>10^3</math> to <math>10^7</math> and aspect ratios (H/L) from 0.5 to 3. Also, three Prondtl numbers have been studied in the case of convective boundary conditions for all Ra considered earlier.</p> <p>It is found that as Rayleigh number increases, average Nusselt number increases in all cases, as expected. The constant temperature at the bottom wall gives higher average Nusselt number. Similarly the constant heat flux at the bottom wall also gives higher average Nusselt number. Average Nusselt number increases with aspect ratio for bottom wall. However, average Nusselt number decreases with aspect ratio for side wall. Correlations have been developed between the average Nusselt number and the Rayleigh number so that the results from the present thesis can be used in future.</p>		

## Dissertation No. 20

Research Scholar	Title of the thesis	Guide
 Anant R Koppur Chairman and CEO KTwo Technology Solutions, Bangalore	<b>Effective and Affordable            Quality Healthcare            Delivery System in Rural            India: A Model Based on            Information Technology</b>	 Dr. V Sridhar Principal, P E S C E, Mandya
Registration for PhD	March 2007	
University /Branch	Computer Science, Mysore University	
Viva-voce exam for Award of PhD degree	April 2012	
<b>Abstract</b>		
<p>The Research work embodies a progressive and innovative use of information technology in improving the healthcare delivery system in India by employing very cost effective and affordable model for rural areas. The prime factors that affect healthcare delivery are non availability of doctors and distances between patients and health centers. This problem is more pronounced at rural areas primarily in India and as a result healthcare delivery systems in big centers get overloaded. The current challenges in the rural healthcare in India are addressed by the model designed and developed as part of this research:</p> <ol style="list-style-type: none"> <li>1. The challenge of easy availability of electronic health records at the point-of-care is addressed by our model / kiosk by providing simple and pragmatic health records. The non-essential data is excluded from the standard EHRs in this implementation by designing Employable EHR with all essential but minimal data sets.</li> <li>2. Non-availability of doctors at the primary healthcare centers in rural India is overcome by our kiosk through a facility to record vital signs of patients by a trained nurse or technician. Doctors can look at the recorded patient details at their convenience and provide diagnosis and medication to patients.</li> <li>3. Non-availability of experts in the primary healthcare centers is overcome by the use of telemedicine facilities provided by the kiosk. The kiosk has communication modules that increase the efficiency of data transfer and use low bandwidths to transfer data between the patient-end and the doctor-end.</li> </ol> <p>The research addresses the current challenges in the rural areas. The kiosk offers medical diagnosis, ongoing patient care and has an ability to monitor patients remotely by using innovative applications with the underlying cost-effective technologies. Kiosk unifies diagnostic hardware like Microscope and Vital Signs Monitor with the diagnostic software. The software consists of modules for Electronic Health Records, Pathology, Radiology and Vital Signs Monitor. Kiosk offers simplicity and cost efficiency making it an ideal solution for use in rural areas where efficiency of healthcare delivery systems is critical. The research work helps in increasing the efficiency of healthcare delivery by improving the processes and creating information database that can help the policy makers to take decisions to build more robust healthcare system in India. The research aims at reducing the cost of healthcare by employing automation tools and use of Information Technology.</p>		

## Dissertation No. 21

Research Scholar	Title of the thesis	Guide
 K.R. Jayakumar Professor and head Dept of Mathematics K S I T, Bangalore	<b>Laminar Boundary Layer            Flow Problems Through            Finite Difference Methods</b>	 Dr.A.T. Eswara Professor and Head, Dept of Mathematics PESCE, Mandya
Registration for PhD		April 2006
University /Branch		University of Mysore, Mathematics
Viva-voce exam for Award of PhD degree		April 2012
<b>Abstract</b>		
<p>The present thesis deals with numerical studies of some problems in laminar, incompressible boundary layer theory. Indeed, the present investigation aims at exploring the nature of nonlinear partial differential equations, governing the boundary layer flow and convective heat transfer over different geometries, having wide engineering and technological applications. Due to the nonlinearity and split two-point nature of boundary conditions, the coupled boundary layer equations governing the flow situations in the above problems have been solved by numerical methods. Among the popular numerical methods that are available today, the finite difference methods are fast, efficient and well-suited to boundary layer flow and heat transfer problems. In the present work implicit finite difference methods which are known to be unconditionally stable and hence reliable, have been used. Indeed, attempts have been made to use few finite difference schemes along with quasilinearization technique and also a finite difference scheme due to Keller along with Newton's method, known as Keller Box method. These methods besides having second order convergence, are fast and hence reliable in getting numerically stable results.</p>		

## Dissertation No. 22

Research Scholar	Title of the thesis	Guide
 Nixon Kuruvila Principal, SCET, Kodakara, Thrissur Kerala	<b>Optimization and            Influence of Process            Parameters for            Machining various            Materials in Wire EDM.</b>	 Dr. H. V. Ravindra Professor, Dept of Mechanical Engg PESCE, Mandya
Registration for PhD	June 2006	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	April 2012	
<b>Abstract</b>		
<p>Wire-cut Electro Discharge Machining (WEDM) is a special form of conventional EDM process in which electrode is a continuously moving conductive wire. The selection of optimum machine setting or cutting parameters in Wire-EDM is significant in achieving better surface finish, dimensional accuracy and cutting speed. An effective way to accomplish these responses is to determine the relationship between the performance indicators of the process and its controllable input parameters. The present study aims at determining parametric influence and optimum process parameters of Wire-EDM using Taguchi's robust design approach and Genetic algorithm. As far as optimization algorithms are concerned, the Taguchi's robust design approach for single response optimization and Genetic algorithm for multi-response optimization have been employed/attempted in this study. The variation of the performance parameters with machining parameters was mathematically modeled by Regression analysis method. In single response optimization using Taguchi's robust design approach, the objective functions are defined based on Taguchi's quadratic loss function for each performance parameters viz, Dimensional Accuracy (DA), Surface Finish (SF) and Volumetric Material Removal Rate (VMRR). Experiments were designed as per Taguchi's <math>L_{16}</math> Orthogonal Array (OA) where in Pulse-on, Current, Pulse-off, Bed-speed and Flushing rate have been considered as the important input parameters. The matrix experiments were conducted for the three different materials such as Hot Die Steel (HDS), Oil Hardened Non-shrinking Steel (OHNS) and High Carbon High Chromium Steel (HCHCr) each having the thickness of 40 mm. The Heat Affected Zone (HAZ) characteristics of the eroded materials was assessed by Scanning Electron Microscope (SEM) and the microhardness of the materials was tested using Vickers microhardness tester. The results of the study reveals that HCHCr steel has to be machined with relatively low heat input and less flushing rate to maintain good productivity and surface integrity where as HDS requires high heat input and flushing rate. It is observed that OHNS demand high pulse-on time, medium current with high flushing rate. An important conclusion drawn from the present study is that all the three materials should be machined with minimum pulse-off duration with a view to avail good production and surface integrity. Finally the validation exercise performed with the optimum levels of the process parameters provide the best outcome there by confirm the efficacy of the approach employed for optimization of process parameters encountered in this study.</p>		

## Dissertation No. 23

Research Scholar	Title of the thesis	Guide
 Sudev L. J Professor Dept of Mechanical Engg V V C E, Mysore	<b>Tool Condition            Monitoring in Drilling            using Thrust Torque,            Tool-tip Temperature and            AE Signals</b>	 Dr. H. V. Ravindra Professor, Dept of Mechanical Engg PESCE, Mandya
Registration for PhD	March 2005	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	July 2012	
<b>Abstract</b>		
<p>The objective of the work is to develop automatic diagnostic tools to diagnose the condition of the cutting tool in drilling using thrust, torque, tool tip temperature and AE signals by signal analysis methods like Multiple Regression Analysis (MRA), Group Method of Data Handling (GMDH) and Pattern Recognition Techniques (PRT).</p> <p>An attempt was made to estimate flank wear of the drill bit by MRA and GMDH based on AE signal Parameters. Both MRA and GMDH were found to be dependable methods to estimate drill flank wear based on acoustic emission signal parameters also. Regularity criterion of GMDH was again proved to be a better method over MRA to estimate drill flankwear. Measured acoustic emission parameters were found to associate well with maximum flank wear of the drill.</p> <p>Drill flank wear was also estimated by employing Back-propagation Neural Network based on AE parameters. The influence of network architectures were studied during training, and the best trained network architecture was tested for the estimation of drill flank was the best architecture to predict average flank wear. Similarly, 8-5-5-1 architecture trained with 200000 epochs was the best architecture to predict maximum flank wear. The testing result of these optimized network architecture confirmed that the correlation coefficient was close to unity.</p> <p>The work has resulted in successful investigation of the measured signals that react to progressive tool wear and implementation of intelligent approaches like MRA, GMDH and PRTs for tool wear monitoring in drilling process.</p>		

## Dissertation No. 24

Research Scholar	Title of the thesis	Guide
 B.C.Nagendra Prasad Associate Professor Dept of Civil Engg. MIT Mysore	<b>Chemical Composition            and Variability of Wet and            Bulk Precipitation in            Urban Area</b>	 Dr.G.P. Shivashankara Professor, Dept of Civil Engg, PESCE, Mandya
Registration for PhD		March 2005
University /Branch		VTU/ Civil Engineering
Viva-voce exam for Award of PhD degree		2012
<b>Abstract</b>		
<p>In this study, our research work will examine the temporal/seasonal and annual variability of wet and bulk precipitation chemistry in urban areas during the study period of 2005–07. We have collected 268 wet and 252 bulk precipitation samples, and 48 aerosol samples from four pre-determined urban areas of Karnataka State, India, and analyzed them for various parameters such as pH, electrical conductivity (<math>\mu\text{S}/\text{cm}</math>), cations, and anions. We have followed the procedure of Standard Methods of 1995 to analyse the samples. Manual wet and bulk precipitation collectors were used to collect wet and bulk precipitation samples. The unit for all ionic concentrations is <math>\mu\text{eq}\ell^{-1}</math>. High-volume air sampler was used to collect aerosols and to determine the scavenging ratios. The study reveals that the highest magnitude of rainfall was recorded during southwest monsoon and the lowest during summer. Bangalore urban area has received the maximum rainfall than any other urban area. The completeness of measured parameters of major ions in wet and bulk precipitation samples were tested by calculating cation/anion ratios and charge balances (CB). Based on this analysis, the annual and seasonal CB% were within <math>\pm 10\%</math> in both wet and bulk precipitation and the annual ratio of anions and cations was 1.09 in wet precipitation and 0.99 in bulk precipitation, which indicates that all the major cations and anions were considered in the analysis of both wet and bulk precipitation. The linear correlation coefficient between measured conductivity and calculated conductivity was 0.98. Determination of marine and non-marine components in both wet and bulk precipitation showed that <math>\text{Ca}^{2+}</math>, <math>\text{Mg}^{2+}</math>, <math>\text{K}^+</math> and <math>\text{SO}_4^{2-}</math> ions were of non-marine origin.</p>		

## Dissertation No. 25

Research Scholar	Title of the thesis	Guide
 K.Arunkumar Government Engineering College, Ramanagar, Karnataka state	<b>Adsorption of dyes by            using agricultural-by-            product based activated            carbons</b>	 Dr.S.M.Prakash Principal K N S I T Bangalore
Registration for PhD		Nov 2004
University /Branch		VTU/ Civil Engineering
Viva-voce exam for Award of PhD degree		Sep 2012
<b>Abstract</b>		
<p>The present work aims at finding out the effectiveness of Malachite Green (cationic) and Remazole Red RGB (anionic) dyes removal using arecanut peel, silk cotton hull, corn stem and banana stem agricultural wastes as activated carbons. This research explores the possibility of using low cost adsorbents for the removal of both dyes from aqueous solution at lower dye concentration and compare with commercial activated carbon.</p> <p>The low cost activated carbons were prepared in the laboratory by carbonization followed by activation. The prepared carbons were used to remove simulated Malachite Green and Remazole Red RGB dyes from aqueous solution by a batch adsorption technique under varied conditions like concentrations of adsorbate, dosage of adsorbent, contact time and pH of dye solution at particular adsorbent particle size, agitation speed and at room temperature. The equilibrium of adsorption was modeled by using the Langmuir and Freundlich isotherm models, the kinetic parameters were determined for the studied adsorption systems and statistical approach for interpretation of the results using regression analysis is carried out. The physical and chemical properties of low cost adsorbents used in this study were determined.</p> <p>From the studies, it is found that the arecanut peel carbon dosage of 0.5 g/L is optimum as it removed 91 % of the dye at pH 10 for a contact time of 35 minutes for dye concentration of 5 mg/L for Malachite Green dye and dosage of 0.625 g/L is optimum as it removed 83 % of the dye at pH 4 for a contact time of 45 minutes for dye concentration of 5 mg/L for Remazole Red RGB dye. The silk cotton hull carbon dosage of 0.5 g/l is optimum as it removed 86 % of the dye at pH 8 for a contact time of 40 minutes for dye concentration of 1 mg/L for Malachite Green dye, and dosage of 0.25 g/L is optimum as it removed 81% of the dye at pH 4 for a contact time of 35 minutes for dye concentration of 2 mg/L for Remazole Red RGB dye. The corn stem carbon dosage of 0.75 g/L is optimum as it removed 90 % of the dye at pH 8 for a contact time of 40 minutes for dye concentration of 2 mg/L for Malachite Green dye and dosage of 0.75 g/L is optimum as it removed 83 % of the dye at pH 4 for a contact time of 40 minutes for dye concentration of 3 mg/L for Remazole Red RGB dye. The banana stem carbon dosage of 0.75 g/L is optimum as it removed 99 % of the dye at pH 8 for a contact time of 45 minutes for dye concentration of 2 mg/L for Malachite Green dye and dosage of 0.5 g/L is optimum as it removed 85 % of the dye at pH 4 for a contact time of 35 minutes for dye concentration of 2 mg/L for Remazole Red RGB dye. The commercial activated carbon dosage of 0.5 g/L is optimum as it removed 93 % of the</p>		

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dye at pH10 for contact time of 25 minutes for dye concentration of 4 mg/L for Malachite Green dye and dosage of 0.625 g/L is optimum as it removed 88 % of the dye at pH 4 for a contact time of 40 minutes for dye concentration of 4 mg/L for Remazole Red RGB dye.

For Freundlich isotherm the value of 'n' found to be more than one for all adsorbents for Malachite Green dye except commercial activated carbons (0.829) and sorption data favorable for all adsorbents except commercial activated carbon. For Remazole Red RGB dye systems values of 'n' was less than one for arecanut peel (0.538) and commercial activated carbon (0.832) indicates unfavorable and for other adsorbents it is favorable. The  $R^2$  values varies from 0.819 to 0.998 for all the adsorbents for both the dyes.

For Langmuir isotherm the value of  $R_L < 1$  for all the studied adsorption systems and value of  $R^2$  were in between 0.816 to 0.971 for both dyes, which is favorable for all the studied adsorption systems. At lower dye concentration the maximum adsorption capacity of Malachite Green and Remazole Red RGB dyes onto the adsorbents used in this study is 27.02 mg/g and 18.51 mg/g by commercial activated carbon, respectively. The least adsorption capacity for Malachite Green and Remazole Red RGB dyes onto the adsorbents used in this study is silk cotton hull (4.85 mg/g) and arecanut peel (3.89 mg/g), respectively. In the present studies all the adsorptive systems were favorable for Langmuir isotherm.

For kinetic studies the  $R^2$  values for first order kinetic model varying from 0.8264 to 0.996 and second order kinetics varying from 0.9243 to 0.9998 for all the studied adsorption systems. The calculated  $q_e$  values fit quite well with the experimental data. So, all the adsorption process studies obey the second order kinetic model which gives an indication of the chemisorption's nature of the adsorption processes. In the present studies intra particle diffusion is not the only rate- limiting step ( $C \neq 0$ ) for all the adsorbents and dyes used.

From the linear regression analysis it reveals that, the most significant controlling parameter of all the adsorption systems for both dyes (except banana stem carbon for removal of Malachite Green dye) affecting percentage of color removal is the pH of the dye solution and the least significance parameter is the contact time. In case of banana stem, Malachite Green dye adsorption shows that slight significant controlling parameter of the system affecting percentage of color removal is the contact time of the dye solution when compared to pH of the dye solution. The correlation coefficient  $R^2$  values of actual and predicted values of percentage of color removal for all the adsorption systems in this present studies were nearly equal to 1.

Finally, it can be concluded that the raw materials used for preparation of adsorbents in this study were available in the countrywide, so the use of such low cost materials by small scale dyeing unit using batched or stirred tank flow reactors is recommended for dilute solution.

## Dissertation No. 26

Research Scholar	Title of the thesis	Guide
 V Muralidhara Professor Jain College Bangalore	<b>Quality Analysis of            Insulators For DC            Applications – A            Detailed Study</b>	 Dr. B. Ramachandra Professor Dept of E&E Engg P.E.S.C.E, Mandya
Registration for PhD		2006
University /Branch		Kuvempu university
Viva-voce exam for Award of PhD degree		Feb 2013
<b>Abstract</b>		
<p>Insulators are considered to be the most important constructional element in any transmission system. With the ever increasing complexity of power systems, there is a requirement of millions of line insulators in all levels of transmission voltages. The reliability of any given transmission line depends on how much less the failure rate of insulators. To have a lesser rate of failure, the insulators must be of good quality having sufficient dielectric strength and withstand capability. The failure of insulators under DC voltages is due to several factors such as thermal runaway, ion-migration inside the insulator volume, anode growth, surface erosion, cement growth etc.,. Even though the failure of insulators may not cause a line drop, it reduces the creepage distance and increases the probability of flashover. Therefore, DC insulators must be of very good quality (having negligible Na<sup>+</sup> and K<sup>+</sup>), so that failure due to the above causes may be reduced.</p> <p>The voltage distribution along a string of insulator is generally uneven even under clean conditions. This is influenced by ambient atmospheric conditions mainly Relative humidity (RH). This information is useful to know the possible maximum voltage that may be permitted to appear across any given insulator in the string for any particular ambient conditions that may cause single unit flashover or result in puncturing or shattering if conditions of surface erosion and ion migration are favourable. Therefore, tests were carryout in order to assess the maximum voltage appearing across a given insulator under various ambient conditions. A detailed study on voltage distribution along strings of four and six insulators were carried out and the result showed that the voltage across a given insulator may go as high as 50% of the applied voltage.</p> <p>After analyzing various factors that influence the failure of DC insulators researchers have evolved a standard [IEC 61325] in order to check the quality of DC insulators. Insulators were subjected to various tests prescribed in IEC standard namely electrical body resistance measurement, ion-migration and thermal runaway tests. All the insulators withstood the tests. Therefore, it was difficult to assess the quality of DC insulators.</p> <p>Tests were carried out at higher temperatures than prescribed in the standards</p>		

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especially in thermal runaway tests. Failures were encountered during the thermal runaway tests at higher temperature. The results showed that it is possible to assess the quality of DC insulators by performing thermal runaway tests at elevated temperatures. Hence it is suggested that thermal runaway tests at higher temperature have to be carried out in order to assess good quality insulators. A revision in the standard is suggested to carry out the thermal runaway tests at higher temperatures.

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## Dissertation No. 27

Research Scholar	Title of the thesis	Guide
 <p>H.S.Suresh Chandra Associate Professor Dept of Civil Engg PESCE,Mandya</p>	<p>Structural Characteristics of Masonry units, Mortar &amp;Masonry.</p>	 <p>Dr. B.G. Naresh Kumar Principal, MIT, Mysore</p>
Registration for PhD		November-2004
University /Branch		VTU, Civil Engineering
Viva-voce exam for Award of PhD degree		June 2013
<p style="text-align: center;"><b>Abstract</b></p> <p>Masonry is an assemblage of masonry units and mortars. Masonry construction is known since ancient times and has been used continuously for several type of constructions throughout the world. Masonry properties and behavior are controlled by the characteristics of masonry units and mortar as well as the bond between them. Apart from bricks several types of masonry units and mortars are used.</p> <p>The thesis is intended to enhance the knowledge about the alternate masonry units, mortars and masonry. Extensive experimental investigations on masonry to understand the following aspects. Water transport phenomena in alternative masonry units to know the soaking period and water availability for cement hydration so as to achieve higher masonry efficiency. Compressive strength and shear bond strength of Stabilized mud block in cement soil mortar and cement soil quarry dust mortars to know the suitability of using alternate mortars and replacement of sand in mortar by quarry dust. Mortars have been taken up for the study.</p> <p>Theoretical studies using 2D and 3D finite element method to understand the behaviour of one of the alternative masonry under axial compression. The alternative masonry unit Stabilized mud block and soil cement mortar have been taken up for the study.</p>		

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## Dissertation No. 28

Research Scholar	Title of the thesis	Guide
 <p>T M Prakash Associate Professor, Dept. of Civil Engg, PESCE, Mandya</p>	<p>Strength and Elastic Properties of ACB Masonry</p>	 <p>Dr. B.G. Naresh Kumar Principal, MIT, Mysore</p>
Registration for PhD	2005	
University /Branch	VTU/ Civil Engineering	
Viva-voce exam for Award of PhD degree	June 2013	
<p style="text-align: center;"><b>Abstract</b></p> <p>The quest for finding a light weight Material as a replacement for conventional masonry unit has been there since nearly three decades. In India, over the past two decades a significant time has been utilized for making attempts to promote Aerated Concrete Blocks (ACB) as an alternative to the conventional masonry units. Alongside with this growth of development of manufacture of ACB masonry blocks, concrete industry has seen a small but significant growth in usage of aerated (foamed) concrete. Simultaneously, there has been a very significant change in the replacement of burnt clay bricks by concrete masonry unit. It appears that the usage of ACB masonry may become more common in the coming years.</p> <p>The broad objectives in this research are outlined here under:</p> <ol style="list-style-type: none"><li>i) Investigation of the strength and elastic properties of ACB masonry and its constituents.</li><li>ii) Load carrying capacity estimation of ACB masonry walls- studies on the estimation of load – bearing wall design parameters (stress reduction factor)</li><li>iii) Studies on the performance of ACB masonry in fill in RC frames with a particular focus on the behavior under in plane loading – Experimental and Analytical studies.</li></ol>		

## Dissertation No. 29

Research Scholar	Title of the thesis	Guide
 Siddesh.G.K Associate Professor, Dept of ECE, J.S.S A T Bangalore	<b>Neuro Fuzzy Model Based            Routing Protocol for            Mobile Adhoc Networks</b>	 Dr.K.N.Muralidahra Professor and Head, Dept of E& C, Engg PESCE,Mandya
Registration for PhD		MAY 2006
University /Branch		VTU/ Electrical and Electronics
Viva-voce exam for Award of PhD degree		JULY, 2013
<b>Abstract</b>		
<p>Recently, Mobile Ad-Hoc Networks (MANETs for short) are drawing the attention of engineers and scientists in the field of mobile networks. The interesting feature of MANET is that they can be deployed immediately in demanding situations and made to work within short time spans. Also, they don't need infrastructure like base stations of traditional mobile networks or cables of wired network. MANETs help to provide effective communication solutions in the case of natural disaster management, military operations, anti terrorist attacks etc. Extensive research in MANET's has made the optimal usage of channels and development of protocols that provide efficient and flawless communication.</p> <p>The objective of the proposed research work is to solve complex network problems like route finding and protocol optimization using neural networks, fuzzy logic and genetic algorithms. A MANET built around this concept becomes a learning and self-improving systems. An intelligent system has been proposed to select an optimum route for various contexts.</p> <p>During the research work, simulations of various protocols have been performed using NS-2 simulator and the proposed HYPER-NF-NET simulator for different contexts. The main context parameters considered are the number of nodes, node mobility and extent of congestion. Simulations are also conducted for proposed HYPER-NF-NET (HFNET) protocol and other popular protocols The simulation results showcase a superiority of HYPER-NF-NET simulator over NS-2 and associated protocol, HFNET over other existing protocols. In the proposed research work, an attempt is made to develop an effective protocol in route finding in MANETs that will fulfill the real-time needs.</p>		

## Dissertation No. 30

Research Scholar	Title of the thesis	Guide
 Usha Surendra Professor and Head, Dept of E&E Engg NIEIT, Mysore.	<b>Robust Optimization            Techniques for Location            of FACTS Controllers to            Improve Power System            Stability</b>	 Dr. S.S. Parthasarathy Professor Dept of E&E Engg PESCE, Mandya
Registration for PhD		July 2009.
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		September 2013.
<b>Abstract</b>		
<p>The research work carried out has two strategies – Conventional method called sensitivity method &amp; computational intelligence technique (Genetic Algorithm and Particle Swarm Optimization) for optimal location of series FACTS controller. The research work presents an effective comparison of conventional method and evolutionary method for locating TCSC - a series FACTS device. The work also emphasizes the line flows and line losses in both the cases. It can be observed from the result that TCSC can be optimally located for any IEEE standard bus system using GA and PSO methods. The effect of placing TCSC in particular branch, results in loss variation in the lines. The total loss effectively reduces and it increases the power transfer capability of the line. The comparison of proposed GA and PSO methods for standard test systems clearly indicated that the GA method validates the superior performance than other PSO or Conventional methods.</p> <p>A practical 220kV, 14 bus system a part of Karnataka Power System Network, in India for optimal location of FACTS device, has been considered to test the credibility of the two strategies. The results obtained are quite encouraging &amp; will be useful in electrical restructuring.</p> <p>Simulation studies have been carried out on a 220kv Basthipura real system. The most sensitive lines have been identified using conventional reactive power loss index method. TCSC has been effectively placed among the identified sensitive line using GA and PSO methods. It has been observed from results that the reactive power loss reduces by placing TCSC in the most sensitive line and the power flows in the line has been enhanced by 32%. In this case also GA performed more superior than PSO.</p> <p>Shunt controllers like Static Var compensator (SVC) and Static Synchronous Compensator (STATCOM) are capable of effectively controlling the voltage profile by dynamically adjusting the reactive power output at the point of connection. However, these controllers are very expensive and, hence, their optimal locations in the network must be ascertained. Among these two FACTS controllers, SVC is more popular due to its lesser cost/size as compared to the STATCOM. Shunt Flexible AC Transmission System (FACTS) devices, when placed at the mid-point of a long transmission line, plays an important role in controlling the reactive power flow to the power network and hence controls system voltage fluctuations and improves transient stability. This thesis also deals with Impact of Shunt Facts Controllers on Transient System Stability of Power System using Matlab blockset simulink models. With different shunt FACTS devices, namely SVC</p>		

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and STATCOM in a long transmission line for a 3 bus system has been tested using the simulink model. It has been observed from the simulation results that by locating the STATCOM at the midpoint of the transmission line, transient stability has been enhanced compared to SVC. Self tuning regulator has also been adopted in the present research work by locating TCSC optimally at a specific bus for a 5 bus system and verified the parameters like voltage, current and power using simulink blockset models and results found to be satisfactory during normal and contingency conditions, which shows that stability has been improved.

Finally using conventional and heuristics methods for location of FACTS devices, the stability of the system has been improved and congestion in the overloaded lines has also been reduced, which in turn improved stability of the power system.

## Dissertation No. 31

Research Scholar	Title of the thesis	Guide
 Harbi Mohammad Ahmad Almahafzah Dept. of Computer Science College of Information Technology, Al-Hussein Bin Talal University, Ma'an, Jordan	<h3 style="margin: 0;">Person Verification Based On Multibiometric Systems</h3>	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD		2010
University /Branch		University of Mysore /Electronics
Viva-voce exam for Award of PhD degree		September 2013
<b>Abstract</b>		
<p>The need for reliable identification of genuine user is obvious. Biometrics offers a natural and reliable solution to many aspects of identity management by the use of fully automated or semi- automated schemes to recognize individuals based on their inherent physical and/or behavioral characteristics. Most of the current biometric systems deployed in real-world application are unimodal biometric system depends on the evidence on the evidence of one of biometric traits such as fingerprints, hand geometry, iris, retina, face, etc. to authenticate an identity.</p> <p>The unimodal systems have to contend with a variety of problems. This in turn increases false Acceptance Rate (FAR) and false reject Rate (FRR).A Good system needs very low FAR and very low FRR. This can be achieved by the multimodal system. The multimodal system is a subset of multibiometric system which establishes identity based on the evidence of multiple biometric traits. Unique Identification Number(UID) or AADHAAR in India is best example for a multibiometric system. Thus, in this thesis, we address critical issues in designing a multi-biometric biometric system i.e., feature extraction algorithms and fusion strategies for defferent systems (multi-instance systems, multi-modal systems, feature extraction algorithms and fusion strategies).</p>		

## Dissertation No. 32

Research Scholar	Title of the thesis	Guide
 K. M. Jagadeesha Professor Dept of Automobile Engg P E S C E, Mandya	<b>Transient Non-Newtonian            Thermoelastohydrodynamic            Analysis of Dynamically            Loaded Journal Bearings            with Surface Roughness            Effects</b>	 Dr. T. Nagaraju Professor, Dept. of Mechanical Engg, PESCE, Mandya
Registration for PhD	March 2004	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	October 2013	
<b>Abstract</b>		
<p>The work presented in this thesis was mainly concerned with the theoretical study of 3D area distributed surface roughness effects on transient non-Newtonian thermoelastohydrodynamic behavior of dynamically loaded journal bearing systems under their realistic operating conditions by including bearing deformation, thermal and non-Newtonian (both shear thinning and viscoelastic) behavior of lubricant effects. The finite element method with appropriate iteration schemes was used to solve the modified average Reynolds, energy, heat conduction and elasticity equations.</p> <p>The influences of 3D surface roughness, bearing flexibility, thermal, shear thinning and viscoelastic behavior of lubricant on transient non-Newtonian TEHD response of engine bearings were studied under the sinusoidal loading as well as realistic engine loading conditions of bearing. The results for the minimum nominal fluid-film thickness, maximum fluid-film pressure, lubricant side leakage, maximum fluid-film temperature, frictional torque, heat flows into journal and bearing bush and journal centre trajectory were computed for both motored engine and connecting rod big-end bearings. The transient performance characteristics of motored engine and connecting rod big-end journal bearings were found to significantly affected by the surface roughness effects.</p>		

## Dissertation No. 33

Research Scholar	Title of the thesis	Guide
 Arun Kumar M N Associate Professor Dept. of CSE F I S T, Angamaly, Kerala-683577	<p>Techniques Towards the            detection and            classification of clustered            microcalcification in            digital mammograms</p>	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD	November 2008	
University /Branch	University of Mysore /Electronics	
Viva-voce exam for Award of PhD degree	October 2013	
<p><b>Abstract</b></p> <p>The factors that lead to the missed detection of breast cancer include nature of radiographic findings, poor image quality and oversight by the radiologist. 15- 25% of biopsy proven cancerous is not detected for various reasons such as technical problems and abnormalities that are not observable. There are many challenges that determine the efficiency of many CAD systems starting from the preprocessing steps to the classification steps. Most of these systems tend to overemphasize the sensitivity in their detection ability at the expense of specificity. This in many cases result in increased unnecessary biopsies when using such CAD systems. Addition of accurate pre-classifier (classifier) to classify the potential microcalcification into the ‘true microcalcification’ is not done effectively in many CAD systems. This increases in false positive detection. Most of the research work on classification of microcalcification cluster deal with feature extraction and classification using a suitable classifier. Many classification approaches are developed by assuming the underlying training set is evenly distributed. However, those approaches are faced with a severe bias problem when the training set is a highly imbalanced distribution. There are many real-world problems those are faced with severe problem of learning for imbalanced class. The imbalanced data cause classifiers to perform poorly on the minority class. When the data are highly imbalanced many existing methods tend to misclassify the minority class. In the mammogram data set there is an unbalanced distribution of cases between the malignant class and the benign class, since the number of instances of benign class is much higher than the malignant class. When learning from imbalanced datasets the tendency is that the classifier obtains a high predictive accuracy over the majority class, but predict poorly over the minority class. Many CAD systems have not well addressed these issues. We developed a CAD system that solve these issues.</p>		

## Dissertation No. 34

Research Scholar	Title of the thesis	Guide
 B Nageshwar Rao Central Power Research Institute Bangalore	<b>Dielectric Diagnosis Of            Power Equipment By            Electrical, Analytical And            Spectroscopic Techniques</b>	 Dr. B. Ramachandra Professor Dept of E&E Engg P.E.S.C.E, Mandya
Registration for PhD	2006	
University /Branch	Kuvempu university	
Viva-voce exam for Award of PhD degree	Oct – 2014	
<b>Abstract</b>		
<p>Electric Power System comprise of a large number of power equipments like high voltage generators, motors, transformers, cables which are quite expensive and form a significant portion of plant assets. More importantly, they are vital components for reliable delivery of electric power. However, the reliability of these equipment depends to a large extent on the healthy condition of their insulation. Failure of the insulation, directly or indirectly, will result in failure of power equipment, which in turn results in forced outages, reduced reliability and increased maintenance and repair costs. Insulation systems for power equipment are a complex combination of materials and have undergone changes in the last few years. Insulating materials do comply with the required performance at the beginning of their life, though during their course of operation ageing and deterioration occur due to the effects of various stresses. The insulation of these equipment ages under thermal, electrical, mechanical (vibration) and thermo-mechanical stresses, environmental stresses during service and one of them may be predominant depending on the type of the equipment. The ageing processes are complicated and take place under stresses simultaneously or sequentially and may result in deterioration of physical / chemical properties. Therefore dielectric diagnosis plays a vital role in assessing the insulation condition of the power equipment and also in trend analysis regarding the extent of degradation ensuring reliability of power equipment.</p> <p>Dielectric diagnosis is the application of suitable procedures and measurements to evaluate insulation degradation and deterioration caused by service conditions. The deterioration criteria are either tailored to the material or to the equipment and may be classified as direct or indirect. The direct criteria are connected with the properties like electrical strength, flexural strength etc. while indirect criteria have a relationship with properties required in service like loss angle, insulation resistance, partial discharge, moisture content, non-ohmic behavior etc. The other criteria are specific to one kind of material or one type of equipment. During ageing the insulation undergoes structural changes both at molecular level and macroscopic level and can be studied by thermo analytical &amp; spectroscopic techniques. However, its correlation with parameters obtained by diagnostic tests, is not fully explored which is an absolute necessity to achieve reliability of the system. CIGRE Working group 33/15.08 [1] has emphasized that there is need to apply the physical / chemical tools like structural, morphological and spectroscopic procedures which have not been in extended use for dielectric diagnosis.</p> <p>In the present research investigation a study is made on the dielectric diagnosis of stator windings of high voltage rotating machines based on structural changes due to ageing. Stator windings of high voltage machines like generators and motors are considered.</p>		

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A critical survey of the existing literature revealed that though there are several diagnostic test methods, there is no conclusive evidence to show that the available tools provide reasonable estimate of the remaining life of the insulation. The progressive deterioration of high voltage machine insulation is assessed through nondestructive techniques like measurement of Insulation Resistance, Polarization Index, Dissipation factor, Loss angle and Capacitance, Partial Discharge (PD) measurements, mainly for trend analysis. However, from these quantities determination of remaining life is the most difficult part of analysis because of lack of well defined deterioration models, lack of adequate data, multiplicity of failure mechanisms which are not well understood in quantitative form and their dependence on environmental and operating factors. The existing methods are inadequate for reasonable evaluation and hence there is a need for considering other methods of analysis of deterioration mechanism of stator winding insulation. Due to various degradation processes, the insulating material undergoes structural changes which can be studied by Spectroscopic and analytical techniques and correlated to parameters obtained by diagnostic evaluation for reasonable and comprehensive understanding of state of electrical insulation of stator winding of high voltage rotating machine. The application of Dielectric spectroscopy, thermo analytical techniques and Recovery voltage measurement for assessment of stator winding insulation has been very rarely used. The need for a comprehensive study with the application of all the techniques for stator winding degradation is always felt and is even recommended by CIGRE Working group 33/15.08 [1]. Physical / chemical tools like structural, morphological and spectroscopic procedures have not been in extended use for dielectric diagnosis and as such this approach is very much necessary to increase the reliability of measurements for better condition assessment of the stator winding insulation.

The principal goal of this research investigation is to make a detailed study of the subject by reviewing the ageing mechanisms of stator winding insulation leading to failure, and then understand the symptoms and causes for insulation deterioration. The investigation also proposes to review the various diagnostic evaluation techniques currently employed worldwide to assess the ageing of stator winding insulation and bring out their limitations and possibly suggest thermo analytical and spectroscopic methods to supplement the dielectric parameters.

In the present research programme, the stator winding insulation prepared under resin poor and resin rich processes were studied. Investigations were undertaken to study the deterioration mechanisms of stator winding insulation under accelerated electrical and thermal ageing. Two types of Class F insulation (155° C class) system viz. epoxy - mica: resin rich and resin poor systems were studied. Sample generator bars and laminates made of resin poor epoxy mica and motor coils and laminates made from resin rich epoxy mica insulation system were evaluated in the present investigation. The dielectric diagnostic techniques like IR/PI,  $\tan \delta$  and Capacitance measurements both in time domain and frequency domain and PD measurements were suitably adopted for insulation condition assessment. Laboratory studies were undertaken to understand the dielectric response of thermally degraded stator winding insulation at lower frequencies. The dielectric diagnostic methods of capacitance and  $\tan \delta$  measurements at different frequencies (dielectric spectroscopy, a frequency domain method) and Recovery voltage (time domain) method have been adopted to study the dielectric response of epoxy mica insulation. Low voltage measurements at 140 volts peak were made in the frequency range of 1 mHz to 1 kHz using Dielectric spectroscopy. The Recovery voltage measurement technique was adopted to investigate the slow polarization process in the dielectric and to assess the insulation ageing based on the analysis of polarization spectrum.

In addition, spectroscopic techniques like Fourier Infrared Transform Spectrometry, x-ray energy spectrum analysis for the study of structural / chemical changes are used. To supplement the results, thermo analytical techniques like Differential Scanning Calorimetry, Thermo Gravimetric Analysis, Thermo Mechanical Analysis were used for the understanding of chemical kinetics.

Studies were also conducted on several motors and generators in service located in different industries, hydro, thermal and nuclear power stations. Non-destructive techniques like measurement

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of Insulation Resistance, Polarization Index, Dissipation factor, Loss angle and Capacitance, Partial Discharge (PD) measurements were used to assess the insulation condition.

## Dissertation No. 35

Research Scholar	Title of the thesis	Guide
 A. H. Srinivasa Professor and Head, Dept of Mathematics MIT, Mysore,	<h3 style="margin: 0;">Numerical Studies of Incompressible boundary layer flow Problems</h3>	 Dr.A.T. Eswara Professor and Head, Dept of Mathematics PESCE, Mandya
Registration for PhD	January 2008	
University /Branch	University of Mysore/ Mathematics	
Viva-voce exam for Award of PhD degree	December 2013	
<b>Abstract</b>		
<p>My thesis deals with numerical studies of some problems in Unsteady laminar, incompressible boundary layer flow problems with Analytical solutions. Indeed, the present investigation aims at exploring the nature of nonlinear partial differential equations, governing the boundary layer flow and convective heat transfer over different geometries, having wide engineering and technological applications. Due to the nonlinearity and split two-point nature of boundary conditions, the coupled boundary layer equations governing the flow situations in the above problems have been solved by numerical methods. Among the popular numerical methods that are available today, the finite difference methods are fast, efficient and well-suited to boundary layer flow and heat transfer problems. In the present work implicit finite difference methods which are known to be unconditionally stable and hence reliable, have been used. Indeed, attempts have been made to use few finite difference schemes along with quasilinearization technique and also a finite difference scheme due to Keller along with Newton's method, known as Keller Box method. These methods besides having second order convergence are fast and hence reliable in getting numerically stable results.</p>		

## Dissertation No. 36

Research Scholar	Title of the thesis	Guide
 Surekha Manoj Professor and Head Dept of E & E Engg, V V I E, Mysore	<b>Power Quality            Improvement of Grid            Integrated Hybrid Wind-            Solar Distributed            Generation Using Facts            Controllers</b>	 Dr Puttaswamy P S Professor, Dept of E&E Engg, PESCE, Mandya
Registration for PhD		Sept 2009
University /Branch		University of Mysore / Electronics
Viva-voce exam for Award of PhD degree		January 2014
<b>Abstract</b>		
<p>Present energy scenario is not only to satisfy demand but also maintaining higher power quality along with the rising concern - global warming. The drawbacks of centralized generation such as, long gestation period, high transmission and distribution losses, poor efficiency, high carbon footprint and peak demand management through load shedding caused the rapid development of DG technology.</p> <p>Integrating renewable technologies especially wind energy system, with the traditional power grid may face many challenges such as voltage quality problems, grid connection codes, reactive power compensation, stability of the system and overall power quality issues.</p> <p>There are several ways offered to fulfil the requirements of reactive power compensation and to overcome the drawbacks. Traditionally tap changers and mechanical switched capacitor are used to serve the purpose but the frequent switching causes resonance and transient overvoltage. The present research work concentrates on the study of the grid integrated wind energy system and the capabilities of FACTS controllers to improve power qualities. The effect of STATCOM on wind DG and at the point of common coupling is studied on IEEE test system and real system to resolve the problems associated using simulation tool MATLAB/SIMULINK. An attempt is also made to suggest PV plant installation along with the existing wind farm.</p>		

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## Dissertation No. 37

Research Scholar	Title of the thesis	Guide
 <p>Minsvathi Professor &amp; Head, Dept of Information Science P E S C E, Mandya</p>	Techniques to analyze Suspicious Tissue Patterns for early detection of breast Tumors	 <p>Dr. S Murali Professor, MIT, Mysore</p>
Date of Registration for PhD	October 2009	
University /Branch	University of Mysore/ Computer Science	
Date of Award of PhD degree	March 2014	
<b>Abstract</b>		
<p>In our research work we have conducted detailed study to understand the suspicious patterns such as AD, spiculations and micro calcification in mammography and ultrasound images. We have improved the suspicious patterns detection in mammography by devising novel techniques to overcome some of the bottlenecks in the existing methods. New features are retrieved to improve the speculated tissue detection in mammograms and ultrasound images. Further to leverage the complimentary information available in mammography and ultrasound images we have proposed novel fusion methodology to improve the overall suspicious tissue detection which in turn helps in early detection of breast cancer</p>		

## Dissertation No. 38

Research Scholar	Title of the thesis	Guide
 Anil Kumar M N Associate Professor, Dept of ECE, F I S T Mookkannor, Angamaly, Kerala	<h3 style="margin: 0;">Area Efficient Arithmetic Unit of Elliptic Curve Cryptography Processor with High Throughput</h3>	 Dr. V Sridhar Principal, P E S C E Mandya
Registration for PhD	August 2009	
University /Branch	Mysore/Electronics	
Viva-voce exam for Award of PhD degree	March 2014	
<b>Abstract</b>		
<p>The data security, authentication and integrity have become an important and urgent need for healthcare information, confidential communication, storage and financial services etc. Public key cryptosystem is the most effective way to secure data transaction and messaging. Elliptic Curve Cryptosystem (ECC) has been considered as an alternative to Rivest, Shamir and Adleman (RSA) because the same security level can be obtained with shorter keys in ECC.</p> <p>The focus of the most of the research in ECC is the implementation of the fundamental operation <math>Q=k.P</math> (point operation) with the optimal hardware resources with an increase in the throughput of the point operation. The point operation <math>Q=k.P</math> involves the addition, subtraction, multiplication, squaring and inversion over Galois field <math>GF(p)</math> or over a Binary field. Inversion is the costliest operation in terms of area and speed among other field operations. Binary Inversion Algorithm (BIA) is the most suitable algorithm for the computation of inversion over <math>GF(p)</math> of National Institute of Standards and Technology (NIST) recommended prime field <math>p-521</math> which is a Mersenne prime number. The NIST recommend prime field <math>p-521</math> has the highest key length and hence there is a need to implement this prime field with less hardware resources with throughput improvement. Considering the above all aspects specified, an area efficient inversion unit of elliptic curve cryptography processor with high throughput specifically for NIST recommended prime field <math>p-521</math> has been focused and designed.</p> <p>Area efficiency in the architectural area of Binary Inversion Algorithm has been obtained by applying new property of Mersenne prime number in the architecture of BIA. This new property has replaced the computation of two operations by a single operation with less hardware resources. Another property has been used to increase the throughput but with extra hardware resources. The proposed architecture of the inversion implemented by integrating these two properties in the architecture of BIA offered less hardware resources with an increase in the throughput. The proposed architecture of inversion unit has 1042 number of two -input EXOR, 1042 number of two-input OR and 2084 number of two-input AND gates lesser than the earlier reported architecture with an increase in throughput of approximately .1% .</p>		

## Dissertation No. 39

Research Scholar	Title of the thesis	Guide
 T.V.Mallesha Assistant Professor Dept of Civil Engg SSIT, Tumkur	<b>Water Quality Assessment            of Cauvery River Basin            Rivers and Prediction of            Water Quality In the            Mixing Zone of River            Kabini</b>	 Dr.S.M.Prakash Principal K N S I T Bangalore
Registration for PhD		November 2003
University /Branch		VTU/ Civil Engineering
Viva-voce exam for Award of PhD degree		Mar-2014
<b>Abstract</b>		
<p>The Research work has been planned and carried out as per the following specific objectives</p> <ul style="list-style-type: none"> <li>• To conduct preliminary survey and inventory of pollution sources in river Cauvery &amp; Kabini.</li> <li>• To review existing 2-D water quality prediction models and validation of models</li> <li>• To conduct intensive field work for water quality monitoring</li> <li>• Water quality assessment of Cauvery basin including the mixing zone of river Kabini with application of 2-D model for DO</li> <li>• To predict water quality dependent parameters using Artificial Neural Networks</li> <li>• Statistical analysis of river Kabini &amp; Cauvery water quality data &amp; trend predictions</li> <li>• Evaluation of knowledge and perception on water quality models through a questionnaire</li> </ul> <p>This research is a practical approach towards the application of different models for water quality predictions. The assessment of river water quality is made on the available data using statistical techniques. Firstly, the study helps in understanding the cause and effect relationships operative on water quality. Secondly to apply that understanding to aid the decision making process which helps in quality management, thereby conservation of natural resources.</p> <p>As far as this research is concerned, for explicit detailing and clarity of presentation of the outcome of the research work, the thesis is divided into seven chapters for convenience, readability, continuity &amp; easy understanding, as well as to sequentially relate the planned activities.</p>		

## Dissertation No. 40

Research Scholar	Title of the thesis	Guide
 E. Sujith Prasad Associate Professor Dept of Mechanical Engg T. John Institute of Technology Bangalore	<b>Mixed Non-Newtonian            Thermoelastohydrodynamic            Analysis of Journal            Bearings</b>	 Dr. T. Nagaraju Professor, Dept. of Mechanical Engg, PESCE, Mandya
Registration for PhD		March 2004
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		March 2014
<b>Abstract</b>		
<p>This work was planned to predict the influence of surface roughness and fluid-inertia on mixed non-Newtonian thermoelastohydrodynamic (TEHD) performance of hydrodynamic journal bearing systems under more realistic operating condition of bearing by considering bearing flexibility, thermal and non-Newtonian behavior of lubricant. The modified form average Reynolds equation was derived in terms of Patir and Cheng's flow factors and inertia functions to include the surface roughness and fluid-inertia. The mean pressure induced velocity components were also modified to include surface roughness in fluid-inertia analysis. Computationally efficient and robust iterative schemes and their solution algorithm for the simultaneous solution of non-linear Reynolds equation and three-dimensional elasticity, energy and heat conduction equations were presented.</p> <p>The coupled solutions of the modified average Reynolds, energy, heat conduction and elasticity equations were obtained using finite element method and appropriate iterative schemes.</p> <p>A significant interaction between the influences of surface roughness, bearing flexibility, thermal, non-Newtonian behavior of lubricant, operating speed or eccentricity on the mixed performance characteristics of journal bearings was found.</p>		

## Dissertation No. 41

Research Scholar	Title of the thesis	Guide
 Krishna Murthy K Professor, Dept of Mechanical Engg, A I T, Chikmagalur	<b>Experimental Investigations on Machining properties of Tib2 reinforced Al-6063 composite Materials using K20 Inserts</b>	 Dr. J Venkatesh Professor & HOD, Dept of Automobile Engg, PESCE, Mandya
Registration for PhD	April 2004	
University /Branch	VTU/ Mechanical Engineering	
Viva-voce exam for Award of PhD degree	April 2014	
<b>Abstract</b>		
<p>Aluminum based particulate reinforced metal matrix have emerged as an important class of high performance materials for use in aerospace, chemical and transportation industries because of their improved strength, high elastic modulus and increased wear resistance over conventional base alloys. Recently, In- site techniques to fabricate aluminum- based metal matrix composites, which can lead to better adhesion at the interface and hence better mechanical properties. Among the reinforcement, TiB2 has emerged as a promising candidate for Al-based composites. This is due to the fact that TiB2 is stiff, hard and more importantly, does not react with aluminum to form reaction product at the interface of reinforcement and matrix. TiB2 is a refractory compound that exhibits outstanding features such as high melting point (2790°C), high hardness (86 HRA or 960 HV) and high modulus characteristics. Its resistance to plastic deformation even at high temperatures portrays it to be a good potential reinforcing candidate in an aluminum matrix.</p> <p>In this present research work, optimization model for machining parameters based on taguchi method is employed, it uses standard taguchi L27(313) orthogonal array to assess and optimize the chosen factors to attain minimum surface roughness(Ra) and maximum material removal rate (MRR) by incorporating response table and analysis of variance (ANONA) technique for dry machining of TiB2 reinforced Al-6063 composite material fabricated through stir casting technique, using two different types of carbide tools of K10 and K20 type employed with CNC machine. The present investigative research analysis shows optimum condition of machining parameters for minimum surface roughness(Ra) and maximum material removal rate (MRR) for TiB2 reinforced Al-6063 composite materials. The reinforced TiB2 particle into the Al-6063 matrix alloy increases the surface roughness and decreases the material removal rate. The taguchi analysis predicts the optimum conditions are similar for both type of carbide tool and K20 type carbide tool emerged as better tool compared to K10 type of carbide tool, based on the achieved and analyzed values for surface roughness and material remove rate. The confirmatory tests for the optimum conditions of machining parameters for TiB2 reinforced Al-6063 composite material also shows that K20 type carbide tool is better performer than the K10 type of carbide tool in imparting low surface roughness and high material removal rate.</p>		

## Dissertation No. 42

Research Scholar	Title of the thesis	Guide
 K.R. Sudhindra Associate Professor, Dept of ECE, B M S C E, Bangalore	<b>Study of Radio Network            Planning and            Optimization for GSM            Network</b>	 Dr. V Sridhar Principal, P E S C E, Mandya
Registration for PhD		May 2008
University /Branch		VTU / Electronics & Communication Engg
Viva-voce exam for Award of PhD degree		May 2014
<b>Abstract</b>		
<p>The GSM (Global System for Mobile Communication) services dominancy especially in developing and under developed countries calls for experts to strive and provide an error free network. In this research work, the ground realities in operational live GSM network were assessed by evaluating various parameters that influence the quality of service.</p> <p>In this thesis, key radio parameters such as RXLEV_ACCESS_MIN (Receiving level Access Minimum), CRO (Cell Reselection Offset) and Antenna Tilt are identified as tuning parameters to handle the transitory traffic of live GSM network. Based on these parameters, a hybrid model of congestion relief is designed which dynamically tunes the chosen parameters to offload the traffic from the congested cell to its non-congested neighboring cells.</p> <p>In this thesis, a novel method to identify the root cause of call drops is designed. The proposed design uses feed forward (FF) neural network which is trained for root cause detection of call drops using Levenberg-Marquardt (LM) training algorithm. Here, the call drops trend due to three different hardware faults are collected from live network for the duration of '10' days whose features are extracted to train the neural network. The statistical features such as mean, maximum, standard deviation, variance and signal power are used to construct feature vector. Six unique group of feature vector from each type of call drops trend are constructed which constitutes to a total of 18 groups of data. These 18 groups of data that are obtained are used as training sample to train the network. In addition, feature vectors are also constructed as detecting sample to test whether the network is working as per design. After training, the neural network is capable of predicting the root cause of call drops due to any of the three selected hardware faults. The thesis also discusses a novel radio resource allocation algorithm which optimally shares the 'single' available channel among multiple attempting users. In the proposed algorithm, the channel is allocated to the subscribers based on channel request, availability of channel and priority value assigned to each of the calling subscriber. The priority value is a function of total success and channel usage time which reflects the user satisfaction factor. Simulation results reveal that the proposed algorithm outperforms existing resource allocation algorithm by an average of '21.6%'. The algorithm is not suitable for generic conditions when number of available channels in a particular cell is more than one.</p>		

## Dissertation No. 43

Research Scholar	Title of the thesis	Guide
 H.V Ravish Aradhya Professor, Dept of ECE R V C E, Bangalore	<b>Design optimization and            Synthesis of low power            reversible logic alu            components</b>	 Dr.K.N.Muralidahra Professor and Head, Dept of E& C, Engg PESCE,Mandya
Registration for PhD		Dec- 2006
University /Branch		VTU/ Electrical and Electronics
Viva-voce exam for Award of PhD degree		May 2014
<b>Abstract</b>		
<p>Power dissipation is a crucial issue today's VLSI system design. Different design abstraction levels in system design offer various power optimization methods. One such methods. One such method at circuit/logic level is reversible logic which is based on energy recovery method. Reversible logic is an emerging research area and provides the advantage of theoretically zero power dissipation. Reversible logic computer is needed to increase the system's rate of computation per unit power consumed. The reversible logic has application is several leading technologies such as quantum computing, quantum dot cellular automata computing, spintronics, conventional CMOS design, adiabatic CMOS design, optical computing, nanotechnology etc.</p> <p>Conventional circuits are irreversible which usually dissipate power. Reversible circuits which are based on reversible logic dissipate nearly zero power. Reversible circuits are built from reversible gates. Reversible gates follow bi-jection function functionality, with one-to-one mapping between the input and output. This means that the number of input is equal to the number of outputs. Unlike conventional logic circuits, reversible logic circuits do not lose information during the entire computation. Reversible gates achieve reversibility through constant 'ancilla inputs' and unused 'garbage output'. The research attempts are made to construct logic circuits which may be implemented in emerging nanotechnology areas.</p>		

## Dissertation No. 44

Research Scholar	Title of the thesis	Guide
 G. N. Rajappa Professor and Head Dept of Mathematics A I T, Chikmagalur	Some Studies in Theory of Hypergeometric Series, Continued Fractions and Modular equations Motivated by the Works of Ramanujan	 Dr.A.T. Eswara Professor and Head, Dept of Mathematics PESCE,Mandya
Registration for PhD	March 2010	
University /Branch	University of Mysore/ Mathematics	
Viva-voce exam for Award of PhD degree	May 2014	
<b>Abstract</b> In the thesis we have proved some modular equations, which will be further used in the explicit evaluations of Ramanujan's cubic continued fraction $G(q)$ . We establish further evaluations of the class invariants $g_n$ using Ramanujan's modular equations. Also we establish some modular equations using Maple and we obtain relationship between $U(q)$ , $U(-q)$ and $U(q_n)$ for $n = 2, 3$ and $5$ by using P-Q type modular equations.		

## Dissertation No. 45

Research Scholar	Title of the thesis	Guide
 Anand Raju M B Professor and Head Dept of E&C Engg B G S I T, Mandya	<b>Modeling &amp; Designing of            Auto tuning PID            Controller using            Evolutionary            Computational Techniques</b>	 Dr Puttaswamy P S Professor, Dept of E&E Engg, PESCE, Mandya
Registration for PhD		August 2009
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		June 2014
<b>Abstract</b>		
<p>Proportional-Integrated-Derivative (PID) Controllers play a significant role in many industrial and commercial applications. Design of PID controller is always a challenging problem for high order systems. Self-Tuning method for PI Controller using Evolutionary Computational (EC) Techniques can generate robust design. It is known that PID Controller is employed in every aspect of industrial automation.</p> <p>EC techniques are a stochastic global search method that emulates the process of natural evolution. EC have been shown to be capable of locating high performance areas in complex domains without experiencing the difficulties associated with high dimensionality or false optima which may occur with gradient decent techniques.</p> <p>Genetic Algorithm (GA) is a stochastic global adaptive search optimization technique based on the mechanism of natural selection of Genes to develop an new human being.</p> <p>Once the new mutation is formed that is used to tune the PID Controller until it stabilizes. There are many error models are developed and are used in the present study. The results from the study show the robust controller design which can fulfill the requirements of current day technologies.</p>		

## Dissertation No. 46

Research Scholar	Title of the thesis	Guide
 Abhijith.C.C Professor & H O D, Dept Of Civil Engg, Y D I T, Bangalore	<b>Studies on the            Performance of Ultra Thin            Cement Concrete            Overlays on Flexible            Pavements</b>	 Dr S P Mahendra Professor Dept. of Civil Engg PESCE, Mandya
Registration for PhD		2005
University /Branch		VTU/ Civil Engineering
Viva-voce exam for Award of PhD degree		2014
<b>Abstract</b>		
<p>Traditionally, Cement concrete has been perceived as a material for new pavement construction, in particular for roads with heavy axle loads. However, with respect to pavement rehabilitation, construction agencies many a times consider Bituminous overlays as the first option, regardless of the condition of the existing pavement structure. It is in this environment that Ultra Thin White Topping (UTW) and Thin White Topping (TWT) overlays are gaining popularity all over the world.</p> <p>Sub arterial and residential main streets with considerable high volume of traffic within cities have been strengthened periodically with Bituminous overlays. These streets exhibit well stabilized base due to the repeated wheel load applications, but the riding quality of these streets are not satisfactory due to the deterioration of the surface layer and hence it is required to rehabilitate these pavements. At present these pavement are being rehabilitated with a Bituminous layer almost every year which is increasing the maintenance cost and causing hindrance and delay to the traffic and the road user. To overcome this it is advisable to rehabilitate these pavement sections with such rehabilitating methods which will not require repeated maintenance and also provide the road user a better riding quality for a long duration of time, which in turn will reduce the overall life cycle cost.</p> <p>Ultra-Thin Whitetopping (UTW) is a pavement rehabilitation technique that involves the placement of a thin Portland Cement Concrete (PCC) overlay, 50 mm to 100 mm thick, over a distressed Bituminous pavement. The bond between the two layers promotes composite action of the pavement section and as a result has a direct impact on the performance of the UTW Pavement. This composite action allows for the reduced thickness in the UTW layer. Additionally, a short joint spacing is typically used, which reduces the UTW flexural and curling stresses.</p> <p>The study resulted in a modified UTW design methodology that takes into account the stiffness of all underlying pavement layers. Additionally, the study provides insight into the effects of pavement section, UTW mix design, mechanical loading and bond conditions on the performance of UTW.</p>		

## Dissertation No. 47

Research Scholar	Title of the thesis	Guide
 Rangaraju H G Associate Prof and Head , Dept of E& C Engg G C E, Bedarapura, Chamarajanagara	<b>Design and Optimization            of Multiply Accumulate            and Comparator Units            Based on Reversible            Logic</b>	 Dr.K.N.Muralidahra Professor and Head, Dept of E& C, Engg PESCE,Mandya
Registration for PhD		May 2006
University /Branch		VT U/E&C
Viva-voce exam for Award of PhD degree		November 2014
<b>Abstract</b>		
<p>In recent years, the power dissipation is becoming important as packaging density increases in Complementary Metal-Oxide-Semiconductor circuits. Power reduction is the key parameter in low power designing of portable computing and sophisticated communication equipments.</p> <p>Various power optimization methods are available for the system designer at different abstraction levels namely device level, circuit/logic level, architecture level, algorithmic level and system level. One such method at circuit/logic level is reversible logic which is based on energy recovery method. Conventional circuits are irreversible circuits which dissipate power. Reversible circuits based on reversible logic do not dissipate power. Reversible logic is an emerging research area and a promising computing paradigm offering the main benefit of theoretically zero power dissipation. Reversible logic circuits and systems are popular now-a-days due to low power consumption and have applications in futuristic computing technologies like quantum computing, quantum cellular automata, DNA computing, optical computing, low power CMOS-VLSI, nanotechnology etc. This research work includes the design and synthesis of eight-bit reversible parallel binary adder/subtractor, the reversible binary multiplier to multiply two 4-bit numbers, the reversible sequential circuits such as reversible D-latch, D-flip-flop and shift register and the design of reversible n-bit binary comparator to compare two n-bit binary numbers. Integrating these components, the reversible Multiply-Accumulate unit is constructed.</p>		

## Dissertation No. 48

Research Scholar	Title of the thesis	Guide
 Champa H N Associate Professor U V C E, Bangalore University, Bangalore	<b>Mind Behavioral Model:            A Model For Handwriting            Feature Extraction And            Behavior Analysis</b>	 Dr K R AnandaKumar Professor Dept. of CS & E, PESCE, Mandya
Registration for PhD	May 2006	
University /Branch	Mysore University / Computer Science	
Viva-voce exam for Award of PhD degree	December 2014	
<b>Abstract</b>		
<p>Handwriting Analysis or Graphology is a scientific method of identifying, evaluating and understanding personality through the strokes and patterns revealed by handwriting. Handwriting reveals the true personality including emotional outlay, fears, honesty, defences and over many other individual personality traits. It is not document examination, which involves the examination of a sample of handwriting to determine the author. Handwriting is often referred to as brain writing. Each personality trait is represented by a neurological brain pattern. Each neurological brain pattern produces a unique neuromuscular movement that is the same for every person who has that particular personality trait. When writing, these tiny movements occur unconsciously. Each written movement or stroke reveals a specific personality trait. Graphology is the science of identifying these strokes as they appear in handwriting and describe the corresponding personality trait.</p> <p>When we look at handwriting, there is not only a message conveyed by what is written, but there is also how the writing is done: the size, slant, pressure, speed etc. In school all are taught to write the same way. How we choose to vary our handwriting is a result of our individual and unique personalities. Different writing characteristics are called handwriting features or writing traits. No single trait totally defines a person. The interpretations of all traits must be considered together.</p> <p>The wide range of applications and the related research show that professional handwriting examiners called graphologist often identify the writer of a piece of handwriting. Accuracy of handwriting analysis depends on how skilled the analyst is. Although human intervention in handwriting analysis has been effective, it is costly and prone to fatigue. The review indicates the existence of much scope for research in the area of handwriting analysis. Hence this work proposes a method which aims at developing a tool for behavior analysis that can predict the personality traits automatically with the aid of a computer without the human intervention. An intelligent system would definitely enhance the performance of the tool, by combining the skill of graphologist</p>		

## Dissertation No. 49

Research Scholar	Title of the thesis	Guide
 M.K. Krishna Professor Dept of Civil Engg, SJBIT,Bengaluru	<b>Vehicular Emission            Dispersion in Urban            Areas—Comparison            Between Field            Measurements and Wind            Tunnel Simulations</b>	 Dr. R.M. Mahalinge Gowda Professor, Dept of Civil Engg PESCE,Mandya
Date of Registration for PhD		1 <sup>st</sup> November 2005
University /Branch		VTU/ Civil Engineering
Date of Award of PhD degree		February 2015
<b>Abstract</b>		
<p>The main contribution of the present study was to analyze the problem of plume dispersion around urban buildings and has been investigated by physical modeling using arrays of obstacles with two types of building models configuration in a boundary layer wind tunnel. The particular effect of obstacle width-to-height ratio (<math>S/H</math>) was examined for a fixed obstacle packing density. The study was carried in a single storied buildings model obstacles which represent having a height (<math>H</math>) of 35 mm with a spacing (<math>S</math>) between elements of 85 mm, and the plan area density was found to be 8.5% (or <math>S/H=2.4</math>). On the other hand, for double storied buildings, cubical blocks having a height (<math>H</math>) of 70 mm with a spacing (<math>S</math>) between elements of 140 mm, and the plan area density was found to be 11.0% (or <math>S/H=2.0</math>). The wind tunnel results are reported and discussed in detail, and some comparisons are drawn to the outdoor field trial and previous studies of plume dispersion within obstacle arrays, as well as open terrain. The analysis covers a wide range of concentration statistics and other quantitative descriptions of plume behavior, involved in the development of a dispersing plume within an urban-like environment. Emphasis is placed on the description of concentration fluctuations within the wind tunnel. Some discussion is also centred on the physical similarities and differences between scaled model simulations and wind tunnel dispersion experiments. It was concluded that from the present study, distribution of concentration and dispersion of contaminants very little in the vicinity of groups of obstacles embedded in an array of cubes in line and staggered array configurations single storied buildings model. Compared to the wind tunnel double storied buildings model inline and staggered array configuration, there was more scatter in the field result due to the effect of larger scales of turbulence.</p>		

## Dissertation No. 50

Research Scholar	Title of the thesis	Guide
 Usha. A Associate Prof. Dept of E & E Engg B.M.S.C.E, Bangalore	Synthesis and Characterization of Sensor for Biological Real Time Applications using Conducting Polymers and Nanocomposites	 Dr. B. Ramachandra Professor Dept of E&E Engg P.E.S.C.E, Mandya
Registration for PhD		January 2010
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		April 2015
<b>Abstract</b>		
<p>Research activity and applications of biosensors for measurement of analytes has been of clinical interest over the last decade. Nanotechnology has been applied to improve performance of biosensors using electrochemical, optical, mechanical &amp; physical modes of transduction and to allow arrays of biosensors to be constructed for parallel sensing. Biosensor measurements have been proposed for biomarkers for detection of cancer, cardiac issues, infectious diseases; DNA analysis etc. Novel applications of biosensors include measurements in alternate sample types such as urea and saliva. Biosensors based on immobilized whole cells have found new applications, for example to monitor the response of cancer cells to chemotherapeutic agents. This will drive to decrease the cost of health care, to shift some of the analytical tests from centralized facilities to “frontline” physicians and nurses, and to obtain more precise information more quickly about the health status of a patient.</p> <p>Many investigators have worked in the area of glucose biosensors to miniaturize the sensor design which requires only 10 micro liters of blood sample. However no attempt has been made to determine leukocyte counts for leukemia. Hence there is a need to investigate biosensors for biological real time applications. The present work is focused on the design, synthesis, and characterization and testing of sensor for biological real time applications.</p>		

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## Dissertation No. 51

Research Scholar	Title of the thesis	Guide
 <p>Suman V Patgar PETRF, PESCE, Mandya</p>	Analysis and Detection of Forgery in Photocopying Process	 <p>Dr. T. Vasudev Professor Department of MCA, MIT, Mysuru</p>
Registration for PhD		September 2009
University /Branch		University of Mysore/ Computer Science
Viva-voce exam for Award of PhD degree		April 2015
<b>Abstract</b>		
<p>Many authorities in countries like India trust and consider the photocopied documents submitted by citizens as proof and accept the same as genuine. Few such applications like to open bank account, applying for gas connection, requesting for mobile sim card, the concerned authorities insist self attested photocopy documents like voter id, driving license, ration card, pan card and passport as proof of address, age, photo id etc to be submitted along with the application form.</p> <p>Certain people exploit the trust of the authorities, and indulge in generating a fabricated photocopy document. The frauds that are noticed in the application areas where photocopy documents are just enough raise an alarm to have an expert system that efficiently detects or supports in detecting a forged photocopy document. The need of such requirement to the society has motivated us to take up research through investigating different approaches to detect / fabricated photocopy documents.</p> <p>The research carried out was focused on development of a supporting system to detect fabrication in the variable region of photocopy documents. Initially, the work segments the handwritten contents from variable regions of photocopy document. Further, detection of fabrication in the contents of segmented variable region is performed using 3 different approaches. Finally, the result is validated through estimating the recursive order number of the photocopy document.</p>		

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## Dissertation No. 52

Research Scholar	Title of the thesis	Guide
 Archana N.V. Professor and Head, Dept of E&C Engg NIEIT, Mysore.	<b>Adaptive Controller Strategies for FACTS Devices in Power System to Enhance Stability</b>	 Dr. S.S. Parthasarathy Professor Dept of E&E Engg PESCE, Mandya
Registration for PhD		July 2009
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		April 2015
<b>Abstract</b>		
<p>Most, if not all of the World's electric power supply systems are widely interconnected, involving connections inside utilities own territories which extend to inter – utility interconnections and then to inter – regional &amp; international connections. This is done for economic reasons, to reduce the cost of electricity &amp; to improve reliability of power supply.</p> <p>In recent years, continuous and reliable electric energy supply is the objective of any power system operation. Over last decade FACTS devices have become popular and are very effective solution for many power system transmission problems. FACTS controllers can be used for steady state voltage regulation and control, steady state control of power flow on a transmission line stability enhancement, along with this it also reduces the problem of sub synchronous resonance. It also improves HV DC link performance.</p> <p>Parameter variations in the plant of a control system can have severe impact on performance &amp; stability. For this reason, control system designers have desired a control algorithm which somehow automatically redesigns itself as the plant changes. This is an adaptive controller.</p> <p>FACTS along with an effective adaptive controller can be used to improve power system stability. The outcome of this research work is the comparing different location techniques like location of FACTS devices using loss reduction method and optimal method. Application of self tuning TCSC and comparison of performance of two FACTS devices such as SSSC and TCSC. The research also dealt with the application of MRAS type of adaptive controllers for stability studies.</p>		

## Dissertation No. 53

Research Scholar	Title of the thesis	Guide
 Pushpa D Asst.Professor, Dept of ISE M I T, Mysore, Mandya	<b>Homography Based            Detection and tracking of            single person in dense            crowd using multiple            cameras</b>	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD	August 2009	
University /Branch	University of Mysore. Electronics	
Viva-voce exam for Award of PhD degree	May 2015	
<b>Abstract</b>		
<p>The present work introduce a cost efficient technique of distinctive detection as well as tracking multiple object in real time street scene with highly uncertainty of the types of objects ,their movements and their count rates .These issues accomplished using unscented kalman filter ,where this algorithm that has used both foreground and background model and the framework detects even the minor movements of the leaves of the trees. This property might be little unwanted when we want to design an application specific to analyze pedestrian or some major moving object visually that keeps highest importance in application. Thus, the further work concentrated on detection and tracking single object in a crowded scene using homographic transformation. Here in this work the six dimensional views of dataset are considered. A unique technique has been used in the present system for both inliers and outliers are detected and are considered for increasing the precise of tracking system. The corresponding points for each frame are considered for evaluation to see that ,they precisely can compute the similarity matrixes followed by computation of homography matrix. The system uses negligible storage area illustrating that the system can be directly put into real time practices. Hence it can be said that the proposed system exponentially enhance the throughput by 97% compared to other prior studies till date.</p>		

## Dissertation No. 54

Research Scholar	Title of the thesis	Guide
 Manju Devi Peofessor, Dept of E& C Engg, Oxford College of Engg, Bangalore	Novel Design and Performance Analysis of High Speed and Low Power Pipeline ADC	 Dr.K.N.Muralidahra Professor and Head, Dept of E& C, Engg PESCE,Mandya
Registration for PhD		Dec 2006
University /Branch		VTU/Electrical
Viva-voce exam for Award of PhD degree		June 2015
<b>Abstract</b>		
<p>The VLSI Technology has evolved so much recently that millions of transistors are integrated on a single chip. Many sub system components are nothing but integrated circuits. The integration of complete electronic system is achieved by combining both analog and digital functions on a single board. CMOS technology plays a key role in mixed signal implementations as it provides high density and low power consumption. The specific implementation such as format conversion, testing interface and layout standards are considered while designing the analog and mixed mode VLSI circuits.</p> <p>Advancement in analog to digital converter technology has achieved high speed, low power consumption and hence low cost in implementation. Some of the good ADC architectures suiting different applications are flash ADC, two-step ADC, pipeline ADC, Successive-Approximation-Register (SAR) ADC, Delta-Sigma ADC, Integrating ADC etc. Among many ADC architectures, the pipeline ADC has the attractive features of maintaining high accuracy at high conversion rate with low complexity and low power consumption.</p> <p>The analog to digital converters play a vital role in today's world of electronic systems. At present, the demand of many is high speed and low power analog to digital converter. The Flash ADC is known for highest conversion rate and low cost and hence used in applications such as wireless communications, digital audio and video systems. The Flash ADC is chosen to work with Pipeline ADC due to high speed and reduced inter-stage delay, which reduces the delay to generate final digital output.</p> <p>In this research work, as Flash ADC is a critical component in pipeline ADC, main focus is given on improvement of Flash ADC. The improvement of Flash ADC improves the performance of pipeline ADC. The Flash ADC mainly depends on comparator and thermometric to binary encoder. Here, the comparator designed has power dissipation in terms of <math>\mu\text{W}</math>. The thermometric to binary encoder is done using full adder logic and multiplexer logic. The results obtained are good and these blocks are used in the construction of 9-bit pipeline ADC. Architecture is designed based on a novel approach of mixed Flash and SAR type and the algorithm is used to design the required sub- ADC block.</p>		

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## Dissertation No. 55

Research Scholar	Title of the thesis	Guide
 <p>A B Rajendra Professor and Head, Dept of CSE V V C E, Mysuru</p>	<p>A new approach to analyze secret sharing schemes using biometric authentication</p>	 <p>Dr.H.S.Sheshadri Professor Dept of E &amp; C PESCE,Mandya</p>
Date of Registration for PhD	March 2010	
University /Branch	VTU/ Electrical and Electronics	
Date of Award of PhD degree	July 2015	
<p style="text-align: center;"><b>Abstract</b></p> <p>Visual Secret Sharing (VSS) or Visual Cryptography (VC) is mainly used to secure the secret image among group of users, where the secret image is encrypted into n shares (dotted black and white image) which individually yields no information, secret image comes out only when shares are stacked on one another. The schemes present in VSS are k-out-of-n and n-out-of-n. In k-out-of-n scheme, by stacking any k (<math>k \leq n</math>) of these shares, the secret image can be recovered, but stacking less than k of them will not disclose any information about the secret image. In n-out-of-n scheme all n shares have to be stacked to get the secret image. The contrast, security and size are the main significant parameters in VSS. Generally the decrypted image will be darker and larger than the secret image. Our proposed designs improve contrast, provide greater security and also generates image with ideal size.</p>		

## Dissertation No. 56

Research Scholar	Title of the thesis	Guide
 S Gayathri. Associate Professor, Dept of ECE, S J C E, Mysuru-570006	<b>A Novel Architecture-            Design of Fingerprint            Recognition Process on            Field Programmable Gate            Arrays</b>	 Dr. V Sridhar Principal, P E S C E, Mandya
Registration for PhD	August 2010.	
University /Branch	University of Mysore. Electronics	
Viva-voce exam for Award of PhD degree	September 2015	
<b>Abstract</b>		
<p>The present works introduce fingerprint recognition process on reconfigurable hardware (FPGA) which is portable, cost effective, faster, reliable, accurate and requires less maintenance. The procedure adapted is as follows: Grey scale image is filtered using parallel architecture to improve the quality of image to lower FAR. The processing time is reduced by adapting fast improved parallel thinning algorithm which is not being handled in earlier FPRS. Proposed thinning algorithm based on IP core not only reduces processing time but also minimizes data size. The proposed work is carried out on three platforms: MatLab, FPGA and ASIC in different stages like pre-processing stage, FPRP and FPRS. Two special hardware methods CORDIC algorithm and IP cores are employed on FPGA to make the proposed work more efficient in terms of processing time, resource utilization, power consumption and recognition rate. Performance evaluation of the proposed work in terms of FAR, FRR, GAR and EER were carried out by considering 100 and 500 samples of individuals between the age of 10 and 65 years. Results with and without preprocessing stage show up 10-15% variations in the recognition rate and with and without post processing, 12-15% variations. Feature extraction without pre-processing and post processing, causes the recognition rate to fall to 70-78%. To analyze the similarity among family members, fingerprint images of 2-G and 3-G family members were considered.</p>		

## Dissertation No. 57

Research Scholar	Title of the thesis	Guide
 Nagaraju C Associate Prof Dept of E&C Engg B G S I T, Mandya	<b>Development and            Performance Study of            Novel algorithms to            Embed Patient            Information in Medical            Images</b>	 Dr. S.S. Parthasarathy Professor Dept of E&E Engg PESCE, Mandya
Date of Registration for PhD		August 2010
University /Branch		University of Mysore/ Electronics
Date of Award of PhD degree		October 2015
<p><u>Brief synopsis</u></p> <p>Recently, Medical image watermarking is an appropriate method suggested by the researchers as a solution for embedding diagnosis report with medical image for enhancing security and authentication of medical data. Embedding patient data such as patient information and bio-signals in medical images and advantage of data security with efficient memory utilization can be done through a traditional method using medical image watermarking techniques. If the capacity of the information embedded inside the medical image is more, it results degradation in embedded image. Hence development of a new technique is required to embed maximum information in medical images at the bit level rather than at the pixel level in order to trade off the drawbacks of earlier methods.</p> <p>The main problem addressed in this thesis is embedding high volume of data in the medical images, embedding patient information and bio-signal, compression using pixel rotation and finally the impact of noise on medical images.</p> <p>In the present work high volume of patient information is embedded in medical image using Local Ternary Pattern (LTP). Along with the enhancement of embedding capacity, LTP is used for the encryption of patient information, to provide more security. The proposed method provides enormous embedding capacity with permissible visual degradation, high security and accurate recovery of patient information.</p> <p>Embedding of patient information in medical image is not sufficient to analyze the condition of the patient. Electro Cardio Gram (ECG) is the one of the important bio-signal which gives status of the patient to the doctors. Hence in this research a novel algorithm is implemented to develop a technique to embed Patient data (patient information and ECG) in medical images.</p> <p>In addition to the embedding process a novel technique on compression has been devised in this work. Medical imaging is used to produces excessive amounts of image data. Along with this, huge amount of patient data has to be embedded in medical image. So compression is necessary for storage and communication purposes. The proposed compression method is based on rotation of the pixel. This technique plays an important role in the transmission and storage of image information. This technique is applicable for medical image with patient information and even along with ECG signal. The research work is a lossless compression in maintaining the quality of the medical images and patient data is recoverable without distortion.</p> <p>In medical image processing, various types of noises corrupt the image quality due to the embedding and transmission. It is very important to obtain precise images to facilitate</p>		

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accurate analysis and estimation of noise in embedded medical image. Instead of studying impact of noise on medical image, the current work is focused towards studying the effect of specific noise which affects particular medical image modality. The proposed embedding techniques used for hiding patient information in medical images are highly robust against compression and attacks.

## Dissertation No. 58

Research Scholar	Title of the thesis	Guide
 K.B.Sidde Gowda Associate Professor, Dept of Automobile Engg, PESCE, Mandya	<b>Studies on the properties            of lubricating oil and            performance of MPFI            Engine using gasoline            Ethanol Blends</b>	 Dr. J Venkatesh Professor & HOD, Dept of Automobile Engg, PESCE, Mandya
Registration for PhD		2004
University /Branch		VTU/Automobile
Viva-voce exam for Award of PhD degree		December 2015
<b>Abstract</b>		
<p>Transportation is unique among the energy consuming sections and it is largely dependent on the conventional gasoline and diesel fuels. It has got a greater impact in the country's economy. These petroleum based fuels are stored fuels and they are irreplaceable. With our present known reserves and the growing rate of consumption, it is feared that they will be exhausted soon.</p> <p>In this project an experiment has been performed so as to study the performance of the MPFI engine using a) gasoline and b) gasoline- ethanol blend (E10,E20, E30), Emission and also study the effect on the properties of the lubricating oil for both gasoline and gasoline-ethanol run engine under similar test conditions and to find out what are the changes that have taken place on the lubricating oil on using ethanol- gasoline blend compared to the gasoline. Various tests were performed on the lubricating oil used for gasoline and gasoline- ethanol run engine.</p>		

## Dissertation No. 59

Research Scholar	Title of the thesis	Guide
 Shylashree N Associate Professor Dept of E& C Engg. R N S I T, Bengaluru	<h3 style="margin: 0;">Implementation of High Speed FPGA Based Scalar Multiplication for Elliptic Curve Cryptography</h3>	 Dr. V Sridhar Principal, P E S C E, Mandya
Registration for PhD		November 2009
University /Branch		VTU/ Electrical and Electronics
Viva-voce exam for Award of PhD degree		January 2016
<h3>Abstract</h3> <p>Security of data plays a vital role in an organization. Normally data is transmitted or shared through insecure channels. In order to protect the confidential data, cryptography has come to its rescue. Accordingly cryptography finds its usage for confidentiality, authentication, data integrity, and non-repudiation. Cryptography can be divided into two types: secret-key cryptography and public-key cryptography. Elliptic curve cryptography (ECC) is one type of public key crypto-system. Its attractive feature is smaller key size with the same level of security compared to other cryptographic algorithms like RSA.</p> <p>In ECC, the message that needs to be transmitted is converted as a point (Coordinate) on the elliptic curve. Since the scalar multiplication is the most time consuming operation in ECC, the objective of the research is focused on how to increase the speed of point or scalar multiplication in ECC.</p> <p>In general, the binary field is suitable for hardware applications and the prime field is suitable for software applications. Still lot of challenges exists in hardware realization of ECC over GF(p) to accomplish better speed. To meet this objective, we have investigated several hardware realizations of fast elliptic curve point multiplication over prime field GF(p).</p>		

## Dissertation No. 60

Research Scholar	Title of the thesis	Guide
 Maheshwari P.G Assistant Professor Dept. of Mathematics, Govt First Grade College, Vijayanagara, Bangalore	<h3 style="margin: 0;">A Study of Fixed Point Theorems and their Applications</h3>	 Dr. Giniswamy Associate Prof and Head, Dept of Mathematics, P E S College of Science, Arts and Commerce, Mandya -571401
Registration for PhD	September 2010	
University /Branch	University of Mysore/ Mathematics	
Viva-voce exam for Award of PhD degree	February 2016	
<b>Abstract</b>		
<p>Fixed point theory is a major branch of functional analysis and has a wide range of applications in almost all branches of Mathematics and also many branches of quantitative sciences like Chemistry, Biology, Computer science, Statistics, Engineering etc.</p> <p>The thesis mainly concerned with the existence and uniqueness of common coincidence points and fixed points of mappings satisfying different types contractive conditions like nonexpansive, expansive, lipschitz, strict contractive, Hardy-Rogers type etc. in the realm of metric spaces and generalized metric spaces. Also the consequent applications were obtained.</p> <p>In this thesis, the concept of f-reciprocal continuity, f-weakly reciprocal continuity and <math>(\psi - \phi) - (\alpha, \beta, \gamma)</math> weakly contractive condition in metric space, multiplicative w-distance in multiplicative metric space were defined and by employing these new notions many results were obtained in the realm of metric space, cone metric space, G-metric space, partially ordered metric space and multiplicative metric spaces. And we provide suitable examples to illustrate that the proven results are more generalized versions of the existing results present in the literature of fixed point theory. Also as applications, the concept of multiplicative w-distance is applied to prove the existence and uniqueness of solution for multiplicative differential equations</p>		

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## Dissertation No. 61

Research Scholar	Title of the thesis	Guide
 <p>Akshatha A Dept. of Chemistry, P. E. T Research foundation, P.E.S Engineering Collage, Mandya</p>	Detection and Monitoring of Sulphur in Mineral Insulating oil and Methods to prevent Copper Corrosion in Power Apparatus	 <p>Dr. H. Ramachandra Prof. &amp; Head Dept. of Chemistry PESCE, Mandya</p>
Registration for PhD	March 2013	
University /Branch	University of Mysore, Chemistry	
Viva-voce exam for Award of PhD degree	February 2016	
<p style="text-align: center;"><b>Abstract</b></p> <p>Corrosion in transformer is one of the major problem affecting the performance of power transformer. Reaction of sulphur compounds from oil on copper conductors in transformers leads to the formation of copper sulphide which degrades both the oil and paper insulation. Dibenzyl disulphide (DBDS) is observed to be a major sulphur source in oil which undergoes thermal degradation, finally leading to copper corrosion. A thorough study of the mechanism of formation of copper sulphide, its migration into paper insulation and its migration techniques will be of great importance to the power sector. Hence, transformer oil containing DBDS were thermally aged at different temperatures. Mercaptan sulphur, total sulphur and DBDS content were analyzed periodically. Ageing was carried out in presence of metal passivators. Copper aged in oil samples were analyzed by EDAX. Efforts were made to remove sulphur compounds from oils and extracted oils were tested for physical, chemical and dielectric properties</p>		

## Dissertation No. 62

Research Scholar	Title of the thesis	Guide
 N.L.Murali Krishna Professor Dept of I &P Engg, PESCE, Mandya	<b>Precision Finishing of            Internal Primitives            Through Extrusion            Honing Process</b>	 Dr. H.P.Raju Professor Dept of Mechanical Engg, PESCE, Mandya
Registration for PhD	April 2004	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	April 2016	
<b>Abstract</b>		
<p>Surface roughness is an index which determines the quality and attribute of machined components and is influenced by the cutting edges. Components that are machined formed or worked usually results in sharp edges (burr) and which is not normally an accepted finished part. Therefore, a secondary finishing operation or process is normally required to remove the sharp edges (burr) and/or smooth out the surface irregularities before the component can be used in its final application. Due to the development of new difficult-to machine materials and complex geometrical shapes of engineering components, the available traditional finishing processes alone are incapable of producing required surface finish and other characteristics.</p> <p>Due to extraordinary properties of material, miniature features of component and complex geometries, the micro/nano-level surface finish on components are not possible to obtain by any conventional methods. Such micro/nano-level surface finish can be achieved only through the advanced machining methods –AFF, EEM, CMP, MAF, MRF, MRAFF, ELIP, MFP. Extrusion Honing (EH) is one among these newly emerged surface finishing methods. EH is a process for the honing of edges and surfaces by the extrusion of an abrasive laden semisolid grinding media across those edges or surfaces. EH process has become more popular unconventional machining process capable of machining hard metals with intricate and irregular shapes especially internal geometries with small holes.</p> <p>The present research initiates to identify the process parameters through the review of literature survey on EH process. Inconel 718 and Inconel 625 nickel based alloy components have been used as work piece for present research. Experimental investigation have been performed on one way Extrusion Honing Machine set up designed, developed and fabricated by the author. A polymer based carrier (Silicone) and silicon abrasives particles SiC were blended and mixed with typical proportion by laboratory built silicone abrasive mixing machine. The major parameters identified in this research are extrusion pressure, abrasive particles, material, shape, size, number of passes and primary machining process.</p>		

## Dissertation No. 63

Research Scholar	Title of the thesis	Guide
 M.N Veena Professor Dept. of CS & E P.E.S.C.E, Mandya	<b>Knowledge Driven            Approaches for Automatic            Detection and Recognition            of Registration Number            for Road vehicles in India</b>	 Dr. T.Vasudev Professor Department of MCA, MIT, Mysuru
Registration for PhD	July 2009	
University /Branch	University of Mysore/ Computer Science	
Viva-voce exam for Award of PhD degree	May 2016	
<b>Abstract</b>		
<p>The Intelligent Transportation system development has grown rapidly over the last two decades with the progress of the computer vision technologies. Major applications of computer vision are: automatic reading of data or information from documents, face recognition, objects recognition etc. A Number plate recognition system uses image processing techniques to detect vehicles by their number plates. Recognition of characters and computer vision procedures for NPR are used as center modules for intelligent infrastructure systems such as freeway, vehicle tracking, involvement in crimes, movement of suspicious vehicle, attack by terrorists, arterial management and electronic payment systems for traffic surveillance.</p> <p>The proposed research work focuses on the image processing component of the system. Literature survey reveals that many researchers are making efforts in detecting and recognizing number plate. The main challenges that come across in the identification process are the differences observed in number plates and environmental conditions. The differences observed in number plates are the color, size, font, location, occlusion, inclination, and multi plates. The changes in environmental conditions are dust, rain, background, illumination etc.</p> <p>The vehicle number plates in India are not standardized in terms of plate position, size, font style and size. In addition, no standard datasets are available and good amount of time is spent on construction of Indian vehicle datasets for experimentation. The dataset collected contain images obtained in different illumination conditions and environment conditions. The dataset are collected by considering, variations in size, location, color, inclination, style and with single/multiline number plates. The dataset also include oriented, mirrored and skewed number plates in which some are naturally obtained by camera and some are generated synthetically. Two better methods are further investigated in this research to segment the vehicle number plate. The first method uses the knowledge of edge information to segment the number plate. This is an effective segmentation method and shows an average segmentation result of 85%. The second method uses shape and color knowledge of number plate. This knowledge about hybrid feature is used to segment number plate through employing watershed and visualization technique. The approach provides an average segmentation result of 93%. An integrated parallel model has been developed for the number plate segmentation employing visualization and watershed technique. The parallel approach gives much faster results compared to sequential model and closer to the requirement of real time applications. Every number plate segmented from the vehicle</p>		

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images are not suitable to read by OCR, as some of the segmented number plates are skewed/tilted, mirrored and oriented. Such number plates require an enhancement stage that detects and performs correction for better readability by OCR. Three methods are explored to enhance the number plates and subject the number plate for reading by OCR. The first approach uses geometric moment to detect the mirror image number plate and shows 93.98% of detection efficiency. The second approach uses autocorrelation feature from GLCM to detect orientation in number plate and shows 65.05% of detection efficiency. The third method is developed using Radon transformation to estimate skew in number plate and shows an average detection efficiency of 97.53%.

A complete NPR system is constructed by integrating different modules which are developed to recognize the number plate from vehicles. The number plate is segmented from a pre processed input image through parallel model based on watershed and visualization technique. The segmented number is further enhanced through detection and correction of oriented, mirrored and skewed segmented number plates. Finally the enhanced number plate is taken as input to the OCR with a post processing stage to read the contents in number plate. The post processing stage is based on knowledge of Indian vehicle registration number patterns. The system is tested with sufficient number of samples to analyze the outcome of the system.

## Dissertation No. 64

Research Scholar	Title of the thesis	Guide
 H B Nagesh Associate Prof Dept of E&E Engg., B I T, Bagalore.	<b>Voltage Stability            Assessment And            Enhancement In Power            Systems</b>	 Dr Puttaswamy P S Professor, Dept of E&E Engg, PESCE, Mandya
Registration for PhD	November 2006	
University /Branch	VTU/ Electrical engineering	
Viva-voce exam for Award of PhD degree	June 2016	
<b>Abstract</b>		
<p>Present energy scenario is not only to satisfy the demand but also maintain higher power quality along with the rising concern about problems related to power system stability. There are new challenges are encountered in the event of the system becomes unstable due to increase in load, outages and tripping of relays etc. On one side there is more demand for power, whereas on the other hand stability of the system becomes a major concern. The demand in power can be met with increase in generation and for this there is a threat from environmentalist. That means there are new challenges with the power grids to operate and is expected to perform better and to be greener. Another task in front of us is to operate the system with more stability to provide better quality power.</p> <p>When the power system experiences a disturbance then the system may result in instability. To restore back to normal condition we need to supply appropriate amount of reactive power compensation. A new approach has been identified to solve the discussed problems which had taken a turn with the power electronics revolution in power systems. Flexible AC transmission systems (FACTS) are power electronic devices, which are not only offers the advantages of high speed and reliability of switching but enhances the value of electric energy.</p> <p>The research work deals with case studies to implement FACTS controllers both shunt and series controller provide required amount of reactive power compensation has been discussed. In addition this identification of proper placing of controller and sizing studies are also considered for the studies.</p>		

## Dissertation No. 65

Research Scholar	Title of the thesis	Guide
 A.R. Vinod Assistant Professor Dept of Civil Engg., R V C E, Bengaluru	<p>Comparative pilot plant studies of selective packing medias as fixed bed for sewage treatment</p>	 Dr. R.M. Mahalinge Gowda Professor, Dept of Civil Engg PESCE, Mandya
Registration for PhD	March 2009	
University /Branch	VTU/ Civil Engineering	
Viva-voce exam for Award of PhD degree	June 2016	
<p><b>Abstract</b></p> <p>The present investigation aims to study the applicability of four naturally available fibrous materials such as coconut coir (packing density 40 kg/m<sup>3</sup> and 70 kg/m<sup>3</sup>), coffee husk blended with wooden chips, sisal and Oil palm Empty fruit bunch fibers (OPEFB) having higher specific surface area, to be used as packing media to treat domestic wastewater under different phases of experimental conditions. The removal efficiency of parameters such as BOD<sub>5</sub>, COD, NH<sub>3</sub>-N, TSS and PO<sub>4</sub><sup>3-</sup> from the domestic wastewater were studied at pre-defined detention time, Organic loading rate and MLSS concentration ranging from 1500-3000 mg/L.</p> <p>Bench scale experiments were conducted for both batch mode and continuous mode of operation. Initial trial run experiments were conducted using two fibrous materials, sisal and OPEFB before investigating the treatability status of other selected organic bed materials. Two packed bed reactors filled with sisal (RS-1) and OPEFB (RP-2) were studied preliminarily for their applicability in wastewater treatment under batch mode of operation with a packing density of 50 kg/m<sup>3</sup> considering detention time as major controlling factor. Two trial of experiments were conducted to know the removal efficiency of predefined parameters such as BOD<sub>5</sub>, COD, NH<sub>3</sub>-N and PO<sub>4</sub><sup>3-</sup>. The reactors performed better and hence further treatability studies were instituted with appropriate experimental conditions.</p>		

## Dissertation No. 66

Research Scholar	Title of the thesis	Guide
 C S Vijayashree BORQS Software Solutions Pvt Ltd, Senior Director, Bangalore	<b>New Approaches to            Enhance the Readability            of Printed Documents by            OCR Systems</b>	 Dr. T. Vasudev Professor Department of MCA, MIT, Mysuru
Registration for PhD		August 2009
University /Branch		University of Mysore/ Computer Science
Viva-voce exam for Award of PhD degree		October 2016
<b>Abstract</b>		
<p>Optical Character Reader (OCR) systems perform the translation of scanned images of handwritten, printed or typewritten text into machine-encoded text. Typical OCR systems consist of photo-scanning of the text character-by-character, analysis of the scanned-in image and translation of the character image into character codes such as American Standard Code for Information Interchange (ASCII) or other commonly used character codes in data processing. OCR systems enable us to feed in a book or an article into an electronic computer file. This allows us to store data more compactly, edit text, search for words or phrases etc. OCR systems are being used by libraries to digitize and preserve their holdings, process checks and credit card slips, sort mails, computerize record-keeping systems in an office and many such tasks having far reaching implications. In addition, OCR systems play a major role in building automatic data transcription systems for many data processing applications.</p> <p>An experimental study on some of the OCR systems was performed and the gist of the study is as follows. Readiris Pro10, SimpleOCR and GOCR are some of the available OCR systems considered for the experimental study. Images in the form of non-linear text, artistic text, handwritten text and text with different character styles and fonts were provided as input to the OCR systems. The study conducted, highlights the shortcomings or limitations in the generic OCR systems which results in incorrect translation of the input image. Automatic detection and segmentation of the text from a document image is a challenging problem. The performance of the OCR depends on the type of input provided to it. The OCR technology available today is capable of reading text which are horizontally linear and limited to a few font styles of specific languages. However, a considerable range of limitations still persists in all the existing OCR systems and some of the limitations can be reduced through preparing the document image with proper preprocessing thus making it more suitable for the OCR to read. The objective of the current research work is to explore few pre-processing approaches for enhancement of OCR input, through which the readability of the OCR systems is improved considerably. Some of the limitations identified are discussed subsequently.</p> <p>The first limitation is translation of oriented text. Orientation in a document image is due to the direction of placing the document into the scanner. Feeding of documents in different directions into the scanner introduces corresponding orientations in the image. Oriented text, is text which is not at 00 orientation to the page. Text can be oriented at 900, 1800 or 2700 with respect to the normal position. Reading or extracting oriented text is one</p>		

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of the major limitations found in existing OCR systems.

The second limitation is tilt in text. Tilt is the slight angular slant to the base line introduced in the character while printing/writing. It is the characteristic of some font styles to print characters with some tilt, either to the left or right of the base line. The tilt in characters contributes a major share in affecting the efficiency of recognition algorithms. Few OCR systems are capable of reading right tilted (italics) characters whereas they are found inefficient in recognizing left tilted characters.

The third limitation is boundary deformation. This refers to the deformation introduced in document images while using the image acquisition device. This deformation is exhibited by bending of text lines at the page borders. The deformation is caused due to copying a page of a thick bound book because of non-planar surface created by the book on the flat copying surface or by non-linearity in copying the contents at the start and finish ends of scanning, such bending deformations lead to incorrect translation by OCR systems.

The fourth limitation is recognition of Artistic text. Artistic text is non-linear text which may consist of stylized characters, shadow effects, 3D effects etc. In addition, an artistic text may have shapes such as circular, triangular, curve, telescopic etc. Reading or extracting the contents of the text which appear in an artistic-form in a document is another major limitation found in almost all the existing OCR systems.

Thus, the advantages of the digital approach includes the flexibility provided by the computer, the accessibility of digitally stored data, and the rapidly decreasing cost of digital computation. Hence, there is a great need for software, which automatically extracts, analyzes and stores information from physical documents for preservation and access whenever necessary. The above mentioned limitations of OCR systems demands the need for research, in preparing the document images before subjecting the same for automatic reading by OCR systems. This need has motivated us to work on enhancing the readability of OCR systems.

The current research work is focused on the development of few approaches for developing transformation models to pre-process the data input to the OCR by removing deformations and distortions. This will result in significant improvement in the translation capability of OCR systems as confirmed by the experimental studies conducted.

## Dissertation No. 67

Research Scholar	Title of the thesis	Guide
 Bhagyashree S R Professor, Dept of ECE, A T M E C E, Mysore	<b>A Novel Approach in the            Diagnosis of Alzheimer            Disease (AD) and            Designing an Embedded            System for Patients            Suffering from AD</b>	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD	May 2013	
University /Branch	University of Mysore/ Electronics	
Viva-voce exam for Award of PhD degree	December 2016	
<b>Abstract</b>		
<p>With the developments in the field of medicine, no doubt, the life span of the mankind is increasing, but eventually the number of age related diseases is also increasing. Alzheimer Disease is one such disease.</p> <p>There is limited data on the use of Machine learning methods for automating clinical aspects of dementia in low and middle income country (LMIC) settings including India. A culture and education fair battery of cognitive tests was developed, validated and normed for use in LMICs including south India by the 10/66 Dementia Research Group. The researcher explored the machine learning algorithms to determine if the analysis of neuropsychological data from the 10/66 battery of cognitive tests along with the demographic and population based normative data can be automated for the diagnosis of Dementia in south India.</p> <p>The data sets for 466 men and women for this study were obtained from the on- going Mysore Studies of Natal effect of Health and Ageing (MYNAH), in south India.</p> <p>For diagnosing the subjects, psychiatrists use CSID battery derived from 10/66 research group. Approximately 3 hours is required for diagnosing each subject which is a time consuming task. The current study focuses on deriving an equation to identify minimal number of the 10/66 cognitive function tests required for diagnosing dementia by considering 10/66 as gold standard. This pilot exploratory study indicates that machine learning methods can help to identify community dwelling older adults with 10/66 criterion diagnosis of dementia with good accuracy in a LMIC setting like India. This should reduce the duration of the diagnostic assessment from 3hours to 15 minutes and make the process easier and quicker for both the clinicians and patients.</p> <p>The equation so derived has very good sensitivity and specificity and hence it can be used in both health checkup camps and hospitals. The outcome of the research is a diagnostic procedure which is simple, fast and cost effective.</p> <p>The AD patients have common symptoms like loss of memory, Aimless wandering and problems in performing day to day activities. This will have lot of impact on caregivers and family members. In this work an embedded system is designed to address one of the issues, that is aimless wandering. The patient module informs the caregiver regarding the location of the system. In this work both diagnosis and caregiving problems are addressed.</p>		

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## Dissertation No. 68

Research Scholar	Title of the thesis	Guide
 <p>Puttegowda D Associate Professor Dept of CS&amp; E, ATMECE,Mysore</p>	<p>Automatic Event Classification using Video Mining Algorithms</p>	 <p>Dr. M C Padma Professor and Head Dept. of CS &amp; E, PECSE, Mandya</p>
Registration for PhD	December 2010	
University /Branch	University of Mysore / Computer Science	
Viva-voce exam for Award of PhD degree	January 2017	
<p style="text-align: center;"><b>Abstract</b></p> <p>The surveillance and security applications with large video data requires systems capable of handling videos automatically to detect and classify events to decrease the load on humans and preventive measures are taken when events are detected. An Automatic Video Surveillance system involves distinctive functions such as foreground segmentation, object detection/tracking, object analysis and finally, activity or behavioral analysis. These functions are implemented using Computer Vision techniques and video mining algorithms alleviating the load on humans The first part of research work is abnormality event detection based on motion features and content based features and to carry out this, two novel approaches have been developed. The second part of research work is Human action classification based on human motion and semantic learning. Two novel approaches have been developed to carry out this. In particular, the research work is geared towards solving two problems: (1) Human action classification in public scenes (2) detection of unusual events in crowded public scenes. Experiments for the above developed approaches are performed on different datasets like KTH, Weizmann, MSR, UCSD, Self created dataset. The results obtained are convincing and proves the efficiency of the proposed approaches.</p>		

## Dissertation No. 69

Research Scholar	Title of the thesis	Guide
 Punith Kumar M B Associate Prof, Dept. of E& C Engg, PESCE, Mandya	Investigations on Real Time Video Shot Detection and Summarization Using Face and Motion Detection Approaches	 Dr Puttaswamy P S Professor, Dept of E&E Engg, PESCE, Mandya
Registration for PhD	May 2012.	
University /Branch	University of Mysore, Electronics	
Viva-voce exam for Award of PhD degree	March 2017	
<b>Abstract</b>		
<p>Nowadays, all human being largely depending on the media to know the information about the things that are happening across the globe. Due to the constraint of time and commitment every individual may not find time to go through entire media coverage regarding the happenings in the society. Hence, there is a need to have storing option with our communication devices like TV and others to watch only the desired highlights or only the interested events. In case of TV news, the overall video stored in storing device consists of anchors, reporter, advertisements, etc. and all of them may not be interested to watch by a viewer.</p> <p>In order to view the interested events there is a need to identify and classify any videos with the help of frame analysis there are number of methods are generally used for this purpose such as face detection eye detection, histogram, etc. Most of the advanced technologies like Tata Sky, Dish TV, Sun Direct, etc. works basically on storing concept. Instead of watching the whole video, we can use video shot detection for the summarization of only anchors, non anchors, text detection and other related videos contents which are required for a viewer. In a similar manner, the video shot detection can be adopted even for games to watch the only particular event like batting, bowling or the crowd.</p> <p>There are number methods are available to carry out the video shot boundary detection namely pixel value based, block difference based, histogram based and edge feature based shot detection, etc. Among them color histogram and face detections are more prominently used because their accuracy in terms of better classification of news video. The face detection often forms the first step in shot detection of news videos. The detection of face can be done using various techniques like principal component analysis, independent component analysis, <i>eigenvalues and eigenvectors</i>, support vector machine, etc. but among them, skin color based technique has been considered for the face detection to achieve proper classification. However, during this process of classification there is a chance of multiple faces appears hence there may be a chance that anchoring and non anchoring shots are not efficiently classified.</p>		

## Dissertation No. 70

Research Scholar	Title of the thesis	Guide
 B.S. Anil Kumar Professor Dept of Mechanical Engg BNMIT, Bangalore	<b>Computational investigation of flow separation in incompressible Aerodynamic regime</b>	 Dr. Ramalingaiah Professor Dept of Mechanical Engg, P E S C E, Mandya
Registration for PhD	November 2009	
University /Branch	VTU/ Mechanical Engineering	
Viva-voce exam for Award of PhD degree	April 2017	
<b>Abstract</b>		
<p>Numerical simulation of flow past airfoils in the stalled region is a challenging problem due to various complex phenomena like strong vortex dynamics, boundary layer separation due to adverse pressure gradient etc. For accurate numerical prediction of separated flow, correct modeling of boundary layer is essential to capture the flow details.</p> <p>In the present work 2D Computational Fluid Dynamics (CFD) analysis for flow around NACA 23024 subsonic airfoil at Reynolds number of 3 million and 6 million have been carried out for a range of angle of attack (0 to +20 degrees) covering both the linear slope and stalling region using ANSYS FLUENT CFD software package. CFD analysis results are compared with the wind tunnel test results available in literatures.</p> <p>The performance of Spalart-allamaras one equation turbulence model, Standard K-epsilon turbulence model with near wall corrections, Mentors K-omega Shear Stress Transport Turbulence model and K-omega SST model with flow transition are analyzed. Lift and drag coefficients measured in wind tunnel are compared with the CFD analysis results. Deviation between wind tunnel test results and CFD analysis results in the stalled region is analyzed and accurate methodology for capturing the aerodynamic flow phenomena is established.</p> <p>The established accurate CFD methodology is helpful for Industrial aerodynamic CFD simulation applications like flow past automotive vehicles, wind turbine rotor blades etc. in order to get accurate and reliable CFD analysis results close to the actual values.</p>		

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## Dissertation No. 71

Research Scholar	Title of the thesis	Guide
 Anitha. M.L. Associate Professor, Dept of C S & E, P E S C E Mandya	Novel Approach In Multimodal Biometric Based Recognition System For Performance Enhancement	 Dr. K.A.Radhakrishna Rao Professor and Head, Dept of E&C PESCE Mandya
Registration for PhD		January 2010
University /Branch		University of Mysore/Electronics
Viva-voce exam for Award of PhD degree		May 2017
<b>Abstract</b>		
<p>Biometric based recognition systems have gained a lot of importance in recent years by providing a convenient way to identify an individual by their reliability, invariant and discriminating features. With the advent of modern computing technology, there is an increased demand for developing recognition systems that have the capability of verifying/establishing the identity of individuals. Traditional recognition systems which are based on physical identities are not sufficiently reliable to satisfy the security requirements as forgery and identity impersonation methods have advanced to a great extent. Recognizing individuals based on his/her unique physiological and/or behavioral characteristics known as biometric traits is a reliable technique, since these traits are not transferable and cannot be stolen or lost. The state of art reveals that the majority of the work proposed in literature uses a fixed combination of traits and decision threshold to achieve desired performance. However, there are many applications that require multiple level of security/accuracy. The design and development of such multimodal biometric systems that can automatically select the combination of features is investigated in our work. In the proposed research work we have developed our own hand image database consisting of 3,584 images from 448 individuals. This database is used in developing two approaches for multimodal biometric system. The first approach is adaptive framework which is used for verification. This approach automatically selects the combination of geometrical features to ensure the optimal performance for the desired level of security. The second approach is the binning and an indexing approach which can be used for identification. This approach reduces the search space leading to reduction in identification time and improving identification accuracy.</p>		

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## Dissertation No. 72

Research Scholar	Title of the thesis	Guide
 Umesh D R Assistant Professor, Dept of CS & E, PESCE, Mandya	A Study of Knowledge Based Approach For The Prediction of Recurrence of Breast Cancer	 Dr. B Ramachandra Professor, Dept. of E&E Engg, PESCE, Mandya
Registration for PhD		March 2010
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		June 2017
<b>Abstract</b>		
<p>The main focus of the research work is the design and implementation of a knowledge based approach for the prediction of breast cancer recurrence on SEER dataset. Data mining can reveal new knowledge from retrospective data. The findings of the breast cancer recurrence could be acquired from the dataset without the requirement of domain experts. Historical data that are stored in the health records provide new possibilities for researchers to use these data sources for a wide range of studies. However, it should be kept in mind that the complexity of these data and the necessity for pre-processing before data mining are important aspects of such analysis. Further, the quality of data is critical to the success of knowledge discovery. Analyzing medical data with data mining along with big data analytics is a challenging task and should be done by following the KDD methodology in order to get satisfactory results.</p> <p>The results of medical knowledge discovery can be used to support decision-making for a clinical oncologist in the prediction of breast cancer recurrence. One of the challenges for researchers in the field of biomedical informatics is to make this possible. New methodologies for revealing knowledge from retrospective medical data has been adopted in accord with circumstances in medicine. Both the biomedical informatics and medical disciplines will be enriched by developing methods and applications in this field.</p>		

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## Dissertation No. 73

Research Scholar	Title of the thesis	Guide
 Bindu N.S Assistant Professor Dept of E& C Engg VVCE, Mysuru	Investigation and Modification of stereo algorithm for Moving Object detection and Tracking	 Dr.H.S.Sheshadri Professor Dept of E &C Engg PESCE, Mandya
Registration for PhD		November 2012
University /Branch		VTU/ Electrical and Electronics
Viva-voce exam for Award of PhD degree		August 2017
<b>Abstract</b>		
<p>Video surveillance for single and multiple objects is a very challenging research area in the field of computer vision. This surveillance system consist of two components that are correlated to each other namely object detection and the object tracking. These two components are the key requirements for varieties of applications namely automated surveillance, event detection, recognition of abnormal activities that are taking place, advanced driver assistant, robot navigation, etc. Object detection, as the name itself defines that it identifies the neighborhood or the position in the given scene whereas the object tracking aims at associating the objects that have been detected over a string of frames. This research work has investigated most of the existing methods and developed an efficient object detection and tracking system for moving objects using 3D stereo vision techniques.</p>		

## Dissertation No. 74

Research Scholar	Title of the thesis	Guide
 Sharmila G V Professor Dept of Civil Engg, S J C I T, Chickballapur	<b>Assessment and A            Role of            Precipitation on            Groundwater            Quality</b>	 Dr. G P Shivashankara Professor Dept of Civil Engg, P E S C E, Mandya
Registration for PhD		November 2007
University /Branch		VTU, Civil Engineering
Viva-voce exam for Award of PhD degree		August 2017
<b>Abstract</b>		
<p>Precipitation is a form of manifestations of water on Earth's atmospheric system and it is the face of meteorological processes at the ground surface. Once the precipitation hits the ground surface, it passes from the meteorological sphere to the hydrological or hydro-meteorological sphere. At this point, it is possible to measure its distribution with time and space, and its rate of fall, since these factors are important to explain human activities in producing atmospheric pollution. Based on the study of previous investigations by different authors, it is clear that Bangalore (urban area) is receiving acid precipitation. So, on this basis of authors' recommendation, the present study is undertaken to conduct the assessment and role of precipitation on groundwater quality, which helps in understanding the effect of precipitation on groundwater quality. The purpose of the present work is to identify the source of groundwater recharge in urban, semi urban and forest region by studying stable isotopes of Oxygen (<math>\delta^{18}\text{O}</math>) and Deuterium (<math>\delta^2\text{H}</math>) and to assess the precipitation, soil and groundwater composition to establish the statistical relationship between the various parameters to study the role of precipitation on groundwater quality. The stable isotopes study proves that precipitation is one of the recharge sources for groundwater replenishment in urban, semi urban forest region. The urban North received the acid rain with VWM pH 4.54. The semi urban and forest region received alkaline precipitation with mean pH 6.11 and 6.39 respectively. In bulk precipitation of urban region, the positive significant correlation between <math>\text{H}^+</math> with <math>\text{SO}_4^{2-}</math> &amp; <math>\text{NO}_3^-</math> shows the formation of strong acidic acids of <math>\text{H}_2\text{SO}_4</math> and <math>\text{HNO}_3</math> and the sources of <math>\text{SO}_4^{2-}</math> and <math>\text{NO}_3^-</math> are from industries and automobile emissions. At semi urban and forest region, <math>\text{Ca}^{2+}</math> showed good positive correlation with <math>\text{SO}_4^{2-}</math> indicating <math>\text{Ca}^{2+}</math> is in the form of <math>\text{CaSO}_4</math> as an important compound in bulk precipitation. <math>\text{H}^+</math> showed poor correlation with <math>\text{SO}_4^{2-}</math> and <math>\text{NO}_3^-</math>, which means complete neutralization of acidity in both semi urban and forest region and these regions received alkaline precipitation. The CEC of soil samples at study region has been observed in the order urban &lt; semi urban &lt; forest region and CEC of soil has increased from rainy season to post monsoon season in urban, semi urban and forest region and it may be due to more exchangeable sites availability in soil. The concentration of ions (<math>\text{Ca}^{2+}</math>, <math>\text{Mg}^{2+}</math>, <math>\text{SO}_4^{2-}</math> and <math>\text{Cl}^-</math>) in groundwater are slightly enhanced from pre monsoon to post monsoon season due to which hardness is imparted to groundwater. Gibb's diagram reveals that, in pre monsoon season, samples fall in rock dominance field represents that groundwater quality is influenced by rock-forming minerals leached by chemical weathering and precipitation</p>		

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dominance in groundwater during post monsoon season at urban, semi urban and forest region. Chadha diagram construction shows that the overall distribution of sampling point exhibits temporary hardness in groundwater during pre monsoon season and permanent hardness in post monsoon season. Factor analysis revealed likely sources in the urban area, first includes  $\text{SO}_4^{2-}$  and  $\text{NO}_3^-$  which are the contribution of anthropogenic sources ( $\text{H}_2\text{SO}_4$  and  $\text{HNO}_3$ ) where  $\text{Ca}^{2+}$  contributed by hydrogeochemical processes. So, the present study concludes, precipitation is one of the recharge sources to groundwater and precipitation plays a significant role on groundwater quality during the post monsoon season only at urban, semi urban and forest region. In other words, quality of groundwater has changed from pre monsoon to post monsoon season. In the urban region, there is no impact of acid deposition through bulk precipitation on groundwater quality due to the buffering capacity of soil which has not been lost.

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## Dissertation No. 75

Research Scholar	Title of the thesis	Guide
 G.Ashwini Assistant Professor Department of Mathematics Govt. College for Women, Mandya	A Numerical Study of Unsteady Laminar Boundary Layer Flow Problems	 Dr.A.T.Eswara Professor Dept of Mathematics P.E.S College of Engineering Mandya
Registration for PhD		March 2010
University /Branch		University of Mysore, Electronics
Viva-voce exam for Award of PhD degree		September 2017
<b>Abstract</b>		
<p>In our research work, a numerical study of partial differential equations arising in the laminar boundary layer theory is undertaken. The mathematical modeling of the problems of industrial and technological applications is being done systematically so that they are amenable for numerical treatment. Further, implicit finite difference scheme which are unconditionally stable have been used to obtain non-similar, semi-similar and self-similar solutions. Also the variation of flow rate and heat transfer coefficients along with flow and thermal fields are analyzed under the influence of relevant physical parameters. The results of the problems considered are certainly favorable to the scientific and technological fields.</p>		

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## Dissertation No. 76

Research Scholar	Title of the thesis	Guide
 <p>C. Poornima Research Scholar P.E.T Research Foundation, P.E.S College of Engineering Campus, Mandya</p>	<p>Numerical Studies of Unsteady Incompressible Boundary Layer Flows</p>	 <p>Dr.A.T.Eswara Professor Dept of Mathematics P.E.S College of Engineering Mandya</p>
Registration for PhD	March 2010	
University /Branch	University of Mysore/ Mathematics	
Viva-voce exam for Award of PhD degree	August 2017	
<p style="text-align: center;"><b>Abstract</b></p> <p>In the present research work, we have undertaken the system of partial differential equations governing laminar, incompressible boundary layer flow and heat transfer problems. The typical problems in the area of science and engineering with technological applications have been identified. Numerical computations have been done in order to obtain the solutions for the above problems using finite-difference method. Further, effects of unsteadiness, suction, injection, magnetic field, stratification and localized wall heating (cooling) have been included in the present study to explore their significance on the skin friction and heat transfer rate.</p>		

## Dissertation No. 77

Research Scholar	Title of the thesis	Guide
 Keerthi Gowda B S Assistant Professor Dept of Structural Engg, Centre for Post Graduate Studies, VTU - Mysuru	<b>Study of Natural Fiber            Reinforced Polymer            Composite as an            Alternative Building            Material</b>	 Dr. G L Easwara Prasad Principal, MITE, Moodabidri
Registration for PhD		November 2010
University /Branch		VTU/ Civil Engineering
Viva-voce exam for Award of PhD degree		September 2017
<b>Abstract</b>		
<p>In the present research study an effort is made to study the mechanical properties of coir/sisal fiber reinforced composite materials. Here, randomly oriented coir/sisal fiber reinforced polyester matrix composite specimens of thicknesses 2 mm, 3 mm, 4 mm, 5 mm and 6 mm were fabricated by using hot compression moulding technique. Treated/untreated fibers of length 10 mm is used as reinforcement for casting the composite specimens. A mixture of polyester resin, methyl ethyl ketone peroxide and cobalt naphthenate of ratio 50:1:1 is used as matrix solution for the fabrication. Each composite panels of fiber volume fraction 10 %, 15 %, 20 %, 25 % and 30 % were tested for its tensile strength, flexural strength and Impact strength as per ASTM D- 3039, ASTM D-7264 and ASTM D-256 norms respectively. A soft computing technique is adopted by developing an artificial neural network to predict the mechanical properties of composite materials, which reduced the manual involvement and its related errors and difficulties to explore the properties of composites. Finally, probabilistic study of mechanical properties of composites are done, by which probable range of properties of composites are achieved. By using all the derived results of the present investigation, a case study is performed to analyze the adoptability of coir/sisal composite panels as alternative building materials (non load bearing wall panels).</p> <p>Present investigation demonstrates that feed forward ANN model could be very good mathematical tool for prediction of mechanical properties of treated and untreated, randomly oriented coir/sisal reinforced polyester matrix composite materials, using data driven technique rather than complicated experimental procedure. It demonstrates that where conventional method feels difficult to estimate mechanical properties of treated and untreated, randomly oriented coir/sisal reinforced polyester matrix composite materials, ANN model supports to predict it. Probabilistic analysis of coir/sisal fiber reinforced polymer matrix composites indicates the range of its tensile and flexure strength. This help user in selecting the ingredients of coir/sisal fiber reinforced polymer matrix composites based on desired value of its tensile and flexure strength. Usage of this kind of (coir/sisal fiber reinforced composites as non load bearing wall panels) alternative building materials adequately decreases the utilization of river sand (now a day, it is one of the eco-social issues) in construction practice and thus, it upgrades the use of agriculture squanders. It also adequately increases the speed of construction practice contrasted with traditional conventional methods. Further, the commercial value of coir/sisal fibers will also increase.</p>		

## Dissertation No. 78

Research Scholar	Title of the thesis	Guide
 Mahesh Gowda N M Asst.Professor, Dept. of E&C Engg., PESCE, Mandya	<b>Optimal Design of            Controlling DC-DC            Switching Power            Converter</b>	 Dr. S. S. Parthasarathy Professor, Dept. of EE&E, PESCE, Mandya
Registration for PhD	May 2012	
University /Branch	University of Mysore, Electronics	
Viva-voce exam for Award of PhD degree	September 2017	
<b>Abstract</b>		
<p>The research presents a high-efficiency non-isolated bidirectional synchronous DC-DC switching power converter with different mode and feed-back control method. The converter is made to operate in Forced Continuous Current Mode (FCCM) /Synchronous Discontinuous Current Mode (SDCM) of operation, where the inductor current goes from positive to negative direction and then changes back to positive direction, to minimize the inductor value, size, cost and weight of the converter. The turn off loss of the switch induced by SDCM of operation is minimized by connecting snubber capacitor across the transistor switch. For zero turn-on loss the energy stored in the capacitor need to be discharged before the switch is turned ON. The discharged energy is stored in the inductor. Thus the Zero Voltage Resonant Transition (ZVRT) of transistor switch is realized. A complementary gate signal control scheme is used to turn ON and OFF the transistor switch. Anti-paralleled diode of the transistor switch helps to discharge the capacitor. FCCM of operation due to complementary gate signal control scheme, minimum turn-on loss and low diode reverse recovery loss are achieved and also removes the parasitic ringing in inductor current. This work proposes an inductor and snubber capacitor optimization. A serial of MATLAB scripts are executed to find the optimum value of snubber capacitor and inductor based on the minimal overall device and switch conduction loss condition for maximum efficiency. In this research work, a general purpose power stage circuit is considered based on complementary gate signal control scheme and by using state space average technique; control duty cycle to inductor current transfer function model is derived. The model features a third order system and sets up a basic for the unified controller concept and optimization. Using the derived transfer function model, PID controller is tuned using PID tuner software available in MATLAB simulink control design block.</p>		

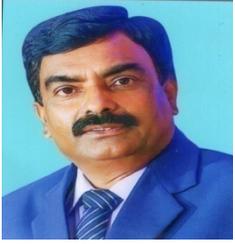
## Dissertation No. 79

Research Scholar	Title of the thesis	Guide
 Chandrika Sudhendra Scientist 'G' Aeronautical Development Establishment, Bengaluru	<b>Design and            Development of Novel            Wide Band Radar            Absorbers for Aircraft            Stealth Applications</b>	 Dr. K.A. Radhakrishna Rao Professor and Head, Dept of E&C PESCE Mandya
Registration for PhD	August 2010	
University /Branch	Mysore/Electronics	
Viva-voce exam for Award of PhD degree	December 2017	
<b>Abstract</b>		
<p>Aircraft stealth primarily involves reduction of electromagnetic signature, quantified in terms of its radar cross section (RCS), for evading detection by the enemy radar. RCS reduction (RCSR) by design involves external shaping and mandatory application of radar absorbers (RA). Unique design and development challenges need to be addressed by electromagnetic designers as RA for air vehicle stealth applications need to be designed for wide bandwidths with weight and thickness constraints, which are conflicting requirements. These requirements have been the driving factors for taking up the applied research and development work reported in the thesis.</p> <p>Two types of novel, ultra wide band (UWB) multi layer dielectric RA design and development is described. The first RA design comprises a novel Jaumann radar absorber for realizing RCSR of 15 dBsm (minimum) from 2 GHz. to 18 GHz. The second design comprises a circuit analog dielectric RA for realizing UWB RCSR performance from 1.7 GHz. to 25 GHz. Electromagnetic modeling is carried out for both the designs and design curves for Jaumann radar absorber are given. Full wave analysis with parametric analysis is carried out using the HFSS 2014 3D EM simulation software. Novel 'embedded passives (EP) resistors technology is adopted for realizing the resistive Frequency Selective Surfaces (FSS). Thousands of resistors are realized as integral to the spacecloth Printed circuit board (PCB) layer(s), which has resulted in quantum improvement in reliability. The PCBs are integrated with the other layers of RA by using low dielectric constant foam spacers. Thus assembled UWB RAs are evaluated for their RCSR performance by carrying out monostatic RCS measurements in microwave anechoic chamber, thereby verifying both design and simulation. Measured RCSR of 15 dBsm has been realized over the desired ultra wide frequency bandwidths and has culminated in successful completion of slated objectives of applied research reported in the thesis.</p>		

## Dissertation No. 80

Research Scholar	Title of the thesis	Guide
 Lalithamm.G.A Associate professor Dept of E&E Engg SJBIT, Bangalore	<b>Design &amp; Development of            Pid Controller To Control            Ac Servo Motor Using            Multi Layer Artificial            Neural Network</b>	 Dr Puttaswamy P S Professor and Head , Dept of E&E Engg, PESCE, Mandya
Registration for PhD	March 2010	
University /Branch	University of Mysore/ Electronics	
Viva-voce exam for Award of PhD degree	December 2017	
<b>Abstract</b>		
<p>For many industrial and commercial applications proportional integral derivative (PID) controllers play a significant role. The applications of PID controller are wide spread from small technology to high technology industry. The industries like aerospace, refineries and ship building are industrially automated works with PID controller. The PID controller can be designed easily for low order system and it is challenging to design for high order system. The solution for this is to use artificial neural network. Soft computing technique, Fuzzy logic system etc., the recent trends shows that tuning of a PID controller could be accomplished with help of neural network adopting either by a single layer or multi layers.. The PID controller turning to achieve high stability is very important. There is a need to optimize the controller to have better performance.. In order to achieve the best overall control of PID control for the entire operating envelopes to assist the engineers requires development of intelligent tools. The further development incorporates</p> <p>In order to achieve better performance than and to overcome the limitations of single layer neural network it has been planned to use multilayered neural network and further studies revealed that there are some options through which the control system can be further optimized.</p> <p>To achieve better performance, the controller is trained to evaluate the gains using multi layered neural network with different training algorithm like BFGS quasi –Newton back propagation, Bayesian regulation back propagation, Levenberg-Marquardt algorithm and scaled conjugate gradient back propagation algorithm are used for better optimization.</p> <p>The studies based on PID controller parameters with single layer neural network and multilayer neural network is carried out. MNN are trained with different training methods to achieve better performance. Harmonic studies are carried out for all different methods of training. Total harmonic distortion (THD) determination has been carried out for all training methods of MNN and finally which method is the best training in the present research.</p>		

## Dissertation No. 81

Research Scholar	Title of the thesis	Guide
 C. Jeyanthi Asst Professor, Teresian College, Siddartha Nagar, Mysuru - 11	A Study of fixed point theory, Dynamic Programming and Neural Network.	 Dr. Giniswamy Associate Prof. and Head, Department of Mathematics, P E S College of Science, Arts and Commerce, Mandya -571401
Registration for PhD	October 2010	
University /Branch	University of Mysore, Mathematics	
Viva-voce exam for Award of PhD degree	January 2017	
<b>Abstract</b>		
<p>Thesis is divided into seven chapters which are further divided into subsections depending upon the concerned topics. First chapter contains an overview of generalization of contraction conditions and development of fixed point theorems on metric spaces and ultra-metric spaces. The first section of chapter two is a brief introduction about weak compatible maps and the basic concepts and in section two some results are obtained using the R- weak compatible maps and in section three, using the concept of f-compatible, g-compatible and compatible of type (P) maps some results are obtained and illustrated with suitable examples. In chapter three, using the concept of weak reciprocal continuity some results are obtained for four self maps which satisfy various types of compatibility in a complete metric space. In chapter four defined a new 'Ciri'c type F- contraction and Hardy-Roger type F-contraction for two pairs of self maps, which are more general contraction. We establish the existence of coincidence and common fixed point of six self maps in non complete metric space satisfying F-contraction. Chapter five is on ultra-metric space and consists of three sections. Using the F-contraction for a single-valued map, some coincidence point theorems are presented for a pair of single valued maps and for single-valued map with multi-valued maps in an ultra-metric space under F-contraction. Chapter six deals with occasionally coincidentally idempotent hybrid maps and some fixed point theorems for two pairs of maps which satisfy 'Ciri'c type and Hardy-Roger type F-contraction. The thesis closes in Chapter seven which focuses on applications of fixed point theorems, for a class of functional equations arising in dynamic programming and neural network.</p>		

## Dissertation No. 82

Research Scholar	Title of the thesis	Guide
 Ahmad Hweishel.A Alfarjat Dept of Applied Science AQABA University College Albalqa Applied University Jordan	Investigations on The Performance Analysis of Bluetooth security Issues using Advanced Algorithms	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD	August 2014	
University /Branch	University of Mysore/ Electronics	
Viva-voce exam for Award of PhD degree	March 2018	
<b>Abstract</b> This research is on the development of algorithms for blue tooth security transmission. As it is well known that blue tooth is good for short distance transmission, it is much prone to errors. The use of encryption and decryption algorithms together with certain advanced techniques are discussed. Certain figure of merit like grade of service have been discussed. ECC algorithms have been described in length. The thesis has also thrown light on the digital signature analysis using ECC. Further digital signature authentication using ECC are also discussed. Totally the work is a topic in advanced techniques for blue tooth communication and still has scope for development. The thesis also deals with the WLAN for transmission with RC4.		

## Dissertation No. 83

Research Scholar	Title of the thesis	Guide
 Prathibha R.J. Assistant Professor Dept. of IS& E, S.J. C. E, Mysore	<b>Novel Approaches to Develop Modules of Source Analysis for Kannada Sentence in Machine Translation System</b>	 Dr. M C Padma Professor and Head Dept. of CS & E, PECSE, Mandya
Registration for PhD	December 2011	
University /Branch	VTU, Computer Science and Engineering	
Viva-voce exam for Award of PhD degree	April 2018	
<b>Abstract</b>		
<p>Most of the states in India have adopted three language policy. The three languages included in this policy are: i) The regional language, ii) The National language - Hindi and iii) The global language - English. Kannada is the regional, official and administrative language of the state of Karnataka. Majority of the documents prepared in Karnataka state are in its regional language - Kannada. Hence it is necessary to translate these documents prepared in Kannada to Hindi and English.</p> <p>In Karnataka, question papers prepared at Secondary School Education Board, Pre-University Board, Under Graduate, Post Graduate, Common Entrance Test and competitive examinations, etc., are in Kannada language. However, such question papers may be used by the students from different states and countries to write their examinations. Hence it is necessary to translate these question papers prepared in Kannada to English and other regional languages. These factors lead to the requirement of design of Machine Translation System (MTS) to translate text from one natural language to other natural language.</p> <p>In general, MTS consists of three phases viz., i) Source analysis phase, ii) Semantic analysis phase, and iii) Target language text generation phase. Source analysis phase is the preliminary phase in MTS and requires enormous linguistic knowledge about source language. In this context, a source analyzer consisting of linguistic tools like text tokenizer and normalizer, morphological stemmer and analyzer, parts of speech tagger, chunker and syntax analyzer for Kannada sentence has been proposed in this research work.</p> <p>In this research work, a rule-based text normalizer is developed to identify and classify the given Kannada text into morpheme based and non-morpheme based words. All non-morpheme based words are assigned with their relevant Parts of Speech (PoS) tags using lookup table and regular expressions. A hybrid morphological stemmer and analyzer is designed using affix stripping, rule-based and paradigm-based approaches to extract the morphological and grammatical features that are present in morpheme based words. A hybrid PoS tagger is designed using rule-based and stochastic approaches to assign each morpheme based word with its relevant PoS tag. A chunker is developed using statistical approach to divide the given sentence into a set of phrases like noun-phrase, verb-phrase, adverb-phrase, etc. A rule-based syntax analyzer is designed to check for the grammatical correctness of input sentence.</p>		

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In this research work, a monolingual lexicon for Kannada language is created to store root-words and indeclinable words along with their lexical details. These words are collected from a well known Kannada dictionary called Kannada Rathnakosha. Initially, it is not possible to build a lexicon that can cover all root-words and indeclinable words of a language. Hence, a module called "semi-automatic insertion of lexical details of unanalyzed word into Kannada monolingual lexicon" is designed to insert unanalyzed or new words with their linguistic details into the lexicon. Here, the Enabling Minority Language Engineering (EMILLE) corpus is used as benchmark dataset. Performance evaluation of all these developed modules has been carried out on EMILLE corpus in which the dataset from stories and novels categories are considered. The efficiency of these developed modules is well promising and encouraging.

## Dissertation No. 84

Research Scholar	Title of the thesis	Guide
 Lokeshwari M Asst. Professor Dept of Civil Engg R.V. C.E, Bengaluru,	<b>Solid waste management            Issues in Mysore city- A            case study.</b>	 Dr. C. Namjunda Swamy Principal Dr. AIT, Bengaluru.
Registration for PhD	April 2006	
University /Branch	VTU, Civil Engineering	
Viva-voce exam for Award of PhD degree	May 2018	
<b>Abstract</b>		
<p>Mysore is one of the historic cities of south India and ex-capital of Mysore state. In addition to keep the Mysore city clean, main aim of the study, conducted by the candidate is to avoid wastage of solid waste by open dumping, burning, etc. and to convert the waste into wealth. To achieve this, the study focused on giving technical solutions to avoid mixing of waste, to control unaesthetic collection, optimal transportation of waste and conversion of waste to wealth.</p> <p>Mysore City Corporation (MCC), in spite of spending 30–40% of the total amount (reserved for solid waste management) for transportation of waste, failed to give a good sanitation to the society. Cost–benefit analysis also shows that the decentralized system is profitable and self-sustainable. In this study, dustbins were reallocated for secondary collection of waste in selected wards by considering the ground truth. Service area was redesigned for each dustbin using GIS and field experimentations. Efficiency of collection increased from 75% to 100% by proposing efficient service area by this study.</p> <p>Optimal routes were found out from the points of generation to compost plant (both centralized and decentralized) using GIS. Cost–benefit analysis has shown that the proposed system is 1.25 times economical than the existing system if waste transported from redesigned bin locations to central compost plant at Visveswara Nagar. To reduce the transportation cost, decentralized systems were proposed. Cost–benefits analysis reveals that the decentralized system is 5 times economical and eco-friendly than the centralized system. Therefore, decentralization proposed for 7 clusters for city peripheral wards with bin location and service area proposed for all these clusters by the candidate.</p> <p>Composting method in central compost plant at Visveswara Nagar is not efficient to convert the incoming waste to full extent. Residents around the plant are facing problems like, littering, groundwater pollution, bad odor, etc. Windrow and vermicomposting with and without sewage sludge experimented in this study by the candidate to solve the above said problem and to convert biodegradable waste in optimal time to increase the efficiency of compost plant and hence the collection of solid waste from the city.</p> <p>The study clearly indicates the bio-remedial recycling of waste, besides providing a clean environment. Overall result of the study not only reduces the load on the central compost plant but also localizes the problem, Reduces the quantity of waste to be treated, promotes Reuse of materials to their full life extent, Gives eco-friendly and self-sustainable treatment systems for Recycling the waste. Hence, this leads to the zero waste management system in Mysore. The same can be applied to any similar cities, which are facing solid waste management issues.</p>		

## Dissertation No. 85

Research Scholar	Title of the thesis	Guide
 Prakash.U Associate Professor Dept of Mechanical Engg S.C.T College of Engg Thiruvananthapuram	<b>Machinability Studies            and Tribological            Characterization of            Aluminium Based            Metal Matrix            Composites</b>	 Dr.S.L Ajit Prasad Professor Dept of Mechanical Engg PESCE, Mandya
Registration for PhD		April 2006
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		July 2018
<b>Abstract</b>		
<p>The present work mainly deals with study of mechanical properties as well as machining parameters of A356-SiC particulate MMCs along with base matrix alloy. Machinability study has been carried out using HSS and Carbide tool material. Tool flank wear is found to be higher in case of HSS compared to Carbide tool at all operating conditions. Regression Analysis was done using linear and multiplicative models. GMDH has been studied with different criteria and different percentage of training set data. Results indicated that GMDH with regularity criteria and 75% set of training data provided the better estimation which was closer to experimental value.</p> <p>The present investigation also includes an attempt to realize some of the tribological characteristics of the A356 composite material under certain operating conditions. The AMCs were found to be superior to the matrix material in wear resistance. Results of the investigation indicate decreasing trend in specific wear rate with increasing normal load. Taguchi analysis was performed to identify the optimized operating conditions for minimum wear and the main factors effects influencing the wear. Results from ANOVA indicate that the applied load and sliding distance influence wear of AMC to the highest extent.</p>		

## Dissertation No. 86

Research Scholar	Title of the thesis	Guide
 Y D Chethan Associate Professor Dept of Mechanical Engg MIT Mysore	<b>Parametric            Optimization and            Performance            Monitoring in Turning            Nickel Base Super            Alloys Using Machine            Vision and Acoustic            Emission Techniques</b>	 Dr. H V Ravindra Vice Principal Dept of Mechanical Engg, PESCE, Mandya
Registration for PhD	November 2012	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	August 2018	
<b>Abstract</b> <p>The research work is concerned with optimization and performance monitoring in turning nickel base super alloy using Machine Vision (MV) and Acoustic Emission signals (AE). The tool status have been assessed through the machine vision signals: wear area and wear perimeter and simultaneously the machined surface roughness is quantified through machine vision signal: the histogram frequency. To ascertain the capability of these machine vision signals to rate the performance status, they are backed up by secondary signals such as <math>AE_{RMS}</math> and <math>AE_{COUNTS}</math>. Turning trails have been carried out on Inconel718 and Nimonic 75 alloys using coated carbide tools. Taguchi's <math>L_{27}</math> orthogonal array has been utilized to design the experiments with spindle speed, feed rate and depth of cut as bearing implications on performance status. During assessing the influence of cutting parameters on machining performance, better quality of machined surface and better control on tool status have been obtained with medium range of speed, medium range feed rate and low depth of cut for both the materials. The digital image processing techniques are useful for fast and easier visualization of performance status which are very difficult to recognize by other modes. However, a non-contact and less costly machining performance optimization can be established with the help of image processing through machine vision. Optimized parameters data are fed into the ANN modelling, and machining response data's are extracted. These machining responses are compared with verification experimental results. The result shows that, the data which obtained by ANN is correlating well with the optimized responses. The quality of the surface generated, and tool wear can be controlled by suitably changing the input parameters. This can be pre-set on the machine thus making it as a tool for better productivity of quality products. This will provide enough flexibility to the manufacturing industry in the production process.</p>		

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## Dissertation No. 87

Research Scholar	Title of the thesis	Guide
 Ugrasen G Assistant Professor , B.M.S.College of Engg, Bengaluru – 560 019	Estimation and Comparison of Machining Performances in Wire Electric Discharge Machining using MRA, GMDH and ANN	 Dr. H. V. Ravindra Vice Principal, P.E.S.C.E, Mandya
Registration for PhD	November 2010	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	August 2018	
<b>Abstract</b>		
<p>The present study aims at determining parametric influence and optimum process parameters of WEDM using Taguchi's Technique. In this study, experiments were designed as per Taguchi's L<sub>16</sub> Orthogonal Array (OA) where in pulse-on time, pulse-off time, current and bed-speed have been considered as the important input parameters. The matrix experiments were conducted for the five different materials such as EN-8, EN-19, EN-31, P-20 and Stavax. Workpiece height of 40 mm thickness is chosen to conduct the experiments. Molybdenum wire of 0.18 mm diameter is used as an electrode material.</p> <p>The relation between the performance parameters and machining parameters is mathematically modeled by Multiple Regression Analysis (MRA), Group Method Data Handling (GMDH) Technique and Artificial Neural Network (ANN). The results of the study reveals that, EN-8, EN-19 and EN-31 steel has to be machined with relatively low heat input and less pulse-on to maintain good productivity and surface integrity where as P-20 requires medium heat input and low pulse-on. Further, Stavax demand high pulse-on time, medium current with pulse-off. An important conclusion drawn from the present study is that all the five materials should be machined with minimum pulse-off duration to avail good production rate and surface integrity.</p>		

## Dissertation No. 88

Research Scholar	Title of the thesis	Guide
 Vikram C.K Assistant Professor Dept of Mechanical Engg PESCE, Mandya	<b>Experimental            Investigation and            Numerical Simulation            of Flow Past            Cylinders</b>	 Dr. Y T Krishne Gowda Professor, Dept of Mechanical Engg, MITT Mysore
Registration for PhD		February 2012
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		August 2018
<b>Abstract</b>		
<p>The various complex physical phenomena including flow separation, reattachment, recirculation, and vortex shedding occurs in flow past cylinders. Based on the literature survey, the present work is carried out for Flow past two square cylinders of different size with corner modification by varying the spacing ratio by conducting experimental and numerical work. Results show that Frequency of vortex shedding decreases by placing second cylinder in the downstream of the first cylinder. For a similar size cylinders, the width of the eddy in the middle of the cylinders increases with increase in spacing ratio. with the increase of spacing ratio to 6, the flow past each cylinder behaves like single square cylinder. If upstream square cylinder size is smaller than the downstream square cylinder, the eddy size is reduced in between the cylinder compared to the downstream of the second cylinder. If upstream square cylinder size is bigger than the downstream square cylinder, the eddy size is larger in between the cylinder compared to the downstream of the second cylinder. The magnitude of transverse velocity oscillation in between the cylinders is smaller compared to the second cylinder of the downstream. The magnitude of transverse velocity oscillation in between the cylinders and in the downstream is more for square cylinders with sharp corners compared to the corners rounded cylinders whereas, square cylinders with corners chamfered lies in between them. The value of lift coefficient of the downstream cylinder is higher than the upstream cylinder. In case of larger upstream and smaller downstream cylinders, drag coefficient for the downstream cylinder is less compared to the upstream cylinder for square cylinders when compared to corners rounded cylinders whereas, square cylinders with corners chamfered lies in between them. Similar trend has been found in all the cases under investigation when spacing ratio is 4 which is lying in between spacing ratio 2 and 6.</p>		

## Dissertation No. 89

Research Scholar	Title of the thesis	Guide
 Umesh Gowda B. M. Vice principal SET Polytechnic, Melkote Pandavapura Tq Mandya,	<b>Monitoring the Status of            the Drilled Hole in            Composite Material            Using Multisensory            Approach</b>	 Dr. H.V. Ravindra Principal PESCE, Mandya
Registration for PhD		December 2008
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		September 2018
<b>Abstract</b>		
<p>The present work mainly deals with study of machining parameters of Aluminum Matrix Composites (AMCs), Epoxy Resin Composites (ERC) and Carbon Fiber Reinforced Polymer (CFRP) with different weight percentages (%wt.) of Silicon Nitride (<math>Si_3N_4</math>) as reinforcement. Machinability study has been carried out using HSS tool material. The experiment has been carried out by varying the percentage weight of <math>Si_3N_4</math>, cutting speed, feed rate, diameter of drill bit and machining time with consideration of multiple performance characteristics, viz., work piece Surface Roughness (SR), Circularity, Cylindricity, Tool Wear (TW) and Delamination. A Multiple Regression Analysis (MRA) was performed to arrive at a functional relation between the dependent and independent parameters. Mathematical modelling has been constructed for all response parameters for prediction. Group Method of Data Handling technique (GMDH) and Artificial Neural Network (ANN) were carried out for estimation of machining performances. The result shows that the data obtained by ANN is correlating well with the optimized responses. From the comparison of all the three estimation models, ANN with 70% of data gives better estimation than MRA and GMDH. It is observed that most of these estimates are correlating well with the measured responses at lower and higher speeds than at intermediate for optimized drill bit size. The machining exercises was performed by setting the optimum values of the machining parameters predicted by the MRA, GMDH, ANN, and it was found to provide the best performance measures in this study. The quality of the surface generated, delamination factor, circularity, cylindricity and tool wear could be controlled by suitably changing the input parameters. This can be preset on the machine thus making it as a tool for better productivity of quality products. This research would provide enough flexibility to the manufacturing industries namely aircraft, automobiles, marine vessels, etc., in selecting the optimized drilling conditions for quality holes.</p>		

## Dissertation No. 90

Research Scholar	Title of the thesis	Guide
 Suma Associate Professor Dept. of E & C Engg. VVIET, Mysuru	<b>Exploring Fast Maths            Techniques for            Medical Image            Compression with            Region of Interest            (ROI) coding Scheme.</b>	 Dr. V. Sridhar Principal Dept., of E& C Engg. PESCE, Mandya
Registration for PhD		May 2012
University /Branch		Mysore University, Electronics
Viva-voce exam for Award of PhD degree		September 2018
<b>Abstract</b>		
<p>Digital medical images have potential benefits in terms of durability, portability, and versatility. However, problems involving storage space and network bandwidth requirements which arise when large volumes of images are to be stored or transmitted, as is the case with medical images. From the diagnostic imaging point of view, the challenge is how to deliver clinically critical information in the shortest time possible. A solution to this problem is through image compression. Medical image compression plays a critical role in telematics especially in telemedicine.</p> <p>The existing techniques, as well as algorithm responsible for performing compression, don't provide a justified balance between cost-effectiveness involved in processing as well as signal quality. The first problem with the existing compression algorithm is that it applies to the full medical image. It is a difficult and impossible task for a current mechanism to automatically determine the section within a radiological image with suspected disease or abnormality. Therefore, existing algorithms are not entirely capable of performing an involuntary selection of the clinical region. This is both a constraint as well as a limitation of existing techniques. From the study of the research publication, it was also further noticed that there was less preference towards identifying digital multipliers as the best possibility to bridge the trade-off between signal quality of reconstructed image and cost-effective compression performance.</p> <p>Therefore, the problem statement of the proposed study is "To design and develop acompression algorithm using Vedic Mathematics to bridge the trade-off between compression performance and signal quality".</p> <p>The principle motive of the system is to leverage the computational performance of the medical image compression on ROI section by using Vedic mathematics. Irrespective of various research-based trials on usage of Vedic multipliers in existing system, the system introduces a significant set of novelty characteristics that is proven to offer better multiplication performance as compared to any existing mechanism of medical image compression.</p>		

## Dissertation No. 91

Research Scholar	Title of the thesis	Guide
 Nayaka S. R. Assistant Professor, Department of Mathematics PESCE, Mandya	<h3 style="margin: 0;">A Study on Some Problems in The Theory of Graphs</h3>	 Dr. Puttaswamy Professor and Head Department of Mathematics PESCE, Mandya
Registration for PhD	May 2014	
University /Branch	University of Mysore , Mathematics	
Viva-voce exam for Award of PhD degree	September 2018	
<h3 style="margin: 0;">Abstract</h3> <p>Combinatorics is a branch of mathematics that basically concerned with counting, combinations and permutations of a collection of numbers and other mathematical aspects that characterize their properties. Graph theory is one of the oldest and a fundamental part of Combinatorics. Most of the real world problems like finding the shortest route; timetable scheduling may be described by using concepts in graph theory. Specially, the concept of graph is used most in the field of Computer science as algorithm models, networks and data structures. Graph theory is in fact one of the particular branch of Mathematics where its origin back to a determined date. The nascence of Graph Theory dates back to around three centuries when a famed Mathematician Leonard Euler tried to solve a well-known "Konigsberg Bridge" Problem. Since then, many mathematicians and researchers worked over this concept and its various applications, among such mathematician W. R. Hamilton, Cayley, P. J. Heawood stands first.</p> <p>In this thesis, our attempt is to extend, improve and generalize recent results in domination theory and explore new concepts and graph operations. The thesis is classified into six chapters, in which the concept of Transversal Domination and Pendant Domination are defined and studied. Polynomial representation of Graphs and Energy of graphs are also studied.</p>		

## Dissertation No. 92

Research Scholar	Title of the thesis	Guide
 Srikanth H V Assistant Professor Dept of Aeronautical Engg NMIT, Bangalore	<b>A Study on            Suitability of Milk            Dairy Waste Scum            Biodiesel for CI            Engines</b>	 Dr. J Venkatesh Professor & HoD Dept. of Automobile Engg P E S C E, Mandya
Registration for PhD	October 2013	
University /Branch	VTU, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>		
<p>The various complex physical phenomena including flow separation, reattachment, recirculation, and vortex shedding occurs in flow past cylinders. Based on the literature survey, the present work is carried out for Flow past two square cylinders of different size with corner modification by varying the spacing ratio by conducting experimental and numerical work. Results show that Frequency of vortex shedding decreases by placing second cylinder in the downstream of the first cylinder. For a similar size cylinders, the width of the eddy in the middle of the cylinders increases with increase in spacing ratio. with the increase of spacing ratio to 6, the flow past each cylinder behaves like single square cylinder. If upstream square cylinder size is smaller than the downstream square cylinder, the eddy size is reduced in between the cylinder compared to the downstream of the second cylinder. If upstream square cylinder size is bigger than the downstream square cylinder, the eddy size is larger in between the cylinder compared to the downstream of the second cylinder. The magnitude of transverse velocity oscillation in between the cylinders are smaller compared to the second cylinder of the downstream. The magnitude of transverse velocity oscillation in between the cylinders and in the downstream is more for square cylinders with sharp corners compared to the corners rounded cylinders whereas, square cylinders with corners chamfered lies in between them. The value of lift coefficient of the downstream cylinder is higher than the upstream cylinder. In case of larger upstream and smaller downstream cylinders, drag coefficient for the downstream cylinder is less compared to the upstream cylinder for square cylinders when compared to corners rounded cylinders whereas, square cylinders with corners chamfered lies in between them. Similar trend has been found in all the cases under investigation when spacing ratio is 4 which is lying in between spacing ratio 2 and 6.</p>		

## Dissertation No. 93

Research Scholar	Title of the thesis	Guide
 Hareesha N G Assistant Professor Dept. of Aeronautical Engg Dananda Sagar College of Engg Bengaluru-78	<b>Investigations on            Kinematic Isotropic            Properties of Planar            Linkages</b>	 Dr. K N Umesh Professor Dept. of Mechanical Engg PESCE, Mandya
Registration for PhD	December 2008	
University /Branch	VTU, Belagavi/ Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>		
<p>It is an attempt to gain a better insight into kinematic and isotropic properties of the manipulators, with the following objectives - Apply the concept of non-redundant manipulators to the redundant one, e.g., a planar 3R manipulator; Synthesize isotropic manipulators and to validate their properties through simulation; Conduct extensive investigations of the manipulator by varying link lengths and joint angles in the vicinity of isotropic configuration and apply the findings of research to hydraulic excavators.</p> <p>Various performance measures used to assess functionality and kinematic performance the manipulator were examined using <i>MATLAB</i>, <i>Maple</i> and <i>Robotics Toolbox</i>. Singular value decomposition, Moore-Penrose Pseudoinverse and condition number of Jacobian were described. Manipulability ellipsoids, conditions of isotropy for redundant manipulator are derived. A comparison between kinematic isotropy and force isotropy of the planar manipulator is given.</p> <p>A novel method was developed to obtain isotropic configurations of planar 3R manipulator. Sylvester's dialytic elimination method was used to solve the system of equations representing isotropy of manipulator. A procedure of obtaining the isotropic configurations from the real roots of the system of equations is described. A GUI is developed for testing and portraying kinematic isotropic property of the manipulator using <i>MATLAB</i> and <i>Robotics Toolbox</i>.</p> <p>Isotropic properties were explored using normalized link parameters <math>l_i</math> for three different types of structures, Type-I (<math>l_1 = 1, l_2 = 1</math> and <math>l_3 = 1/\sqrt{2}</math>) and Type-II (<math>l_1 = 1, l_2 = 1</math> and <math>l_3 = 1/\sqrt{6}/4 = 0.6124</math>) having fixed link parameters and Type-III with variable links (<math>l_1 = 1; 0.88 \leq l_2 \leq 1.47</math> and <math>0.71 \leq l_3 \leq 1.04</math>). Type-II manipulators yield exact isotropy, which possess unit condition number. Some Type III manipulators also depict similar behavior. In the vicinity of Type III isotropic configuration, there exist some useful configurations which possess condition number approximately equal to unity.</p> <p>A study of hydraulic excavators, including basic structure, types and functions was carried out. Jacobian of the excavator was exploited for examining manipulability and isotropy. Four different excavators are considered for study. It was found that none of them were isotropic by virtue of their link lengths. Excavators of crawler and wheel based are considered as representatives of each of their family for illustrations. Some modifications were suggested for conversion of the non-isotropic excavator into isotropic ones.</p> <p>In a nut shell, the research focuses on synthesis of isotropic planar 3 dof manipulators and significant investigations of their properties and application to typical hydraulic actuators.</p>		

## Dissertation No. 94

Research Scholar	Title of the thesis	Guide
 P.A Udaya Kumar Associate professor and HOD Deptat of Mechanical Engg. Sri Revanna Siddeshavara Institute of technology. Chikkajala, Bangalore.	<b>Synthesis and            Characterization of            coir Fibers, Aramid            Fibers and Coconut            Shell Powder            Reinforced Vinylester            Hybrid Composites</b>	 Dr. Ramalingaiah Professor Dept of Mechanical Engg, P E S C E, Mandya
Registration for PhD		February 2010
University /Branch		VTU, Mechanical Engineering
Viva-voce exam for Award of PhD degree		Submitted in 2018
<b>Abstract</b>		
<p>The use of natural fibers and functional fillers in various thermoplastic and thermosetting composites is gaining popularity in many industrial sectors, and especially in automotive industry. The increasing marketing battle in automotive and aerospace industries had been looking for the development of light weight material design for the possible replacement of conventional and polymer based composites with synthetic fibers. Therefore, among the substitutes, the natural fiber reinforced polymeric composite materials stand in the front row, due to its synergistic advantages of enhanced specific strength, stiffness and ecological benefits.</p> <p>Accordingly, several works have been reported using various natural fibers as reinforcements in different polymeric systems to address the real time issues in automobile industry market. Among all, the coconut tree based reinforcing agents are identified and they exhibit superior results on mechanical properties with different polymer matrix systems. However, the hybridization effect of coir fibers along with synthetic fiber and bio-based filler combinations is not explored far. Further, the hybridization process in polymeric systems can be the appropriate substitute to the load-bearing applications. To find a suitable environmental friendly light weight composite material system for structural and tribological applications, static mechanical properties as well as friction and dry sliding wear behaviours are to be studied in detail.</p> <p>This current research is mainly focused on developing coir fiber (CF) and CF combined with aramid fiber (AF) and coconut shell powder (CSP) filled vinyl ester (VE) hybrid composites using compression moulding technique. The composites prepared with and without NaOH treated CF are termed as CF-VE composites. It is characterized based on reinforcement as single fiber reinforced</p>		

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composites. In hybrid series, the CF, AF and CSP filler are used as primary and secondary reinforcements respectively. Further, there are two sets of composites. In Set-I, only the coir fiber is treated with NaOH solution, whereas in Set-II, the secondary reinforcements namely AF and CSP are treated with silane coupling agent. Surface treatment of natural fibers enhances the interfacial bonding and hence the strength of the composite is increased.

The performance in terms of static mechanical properties and friction as well as adhesive wear behaviour of the said hybrid VE composites (Set-I and Set-II) are studied with untreated and chemically treated reinforcing agents by varying the weight percentage of all the reinforcing agents. Fibers and filler weight percentage, concentration of treating agent and weight percentage of reinforcing agents have been performed before fabricating composite slabs. After coir fiber surface chemical treatment, the topographical changes on fiber are studied using SEM imaging. The prepared composites are tested following ASTM standards for evaluating their properties. Accordingly, the results of mechanical properties and tribological behaviour of VE hybrid composites are studied with the role of reinforcing agents and wt. % of the reinforcements.

The physical and mechanical properties such as density and hardness, static mechanical such as tensile, flexural and impact strength and tribological such as specific wear rate and coefficient of friction are evaluated and presented. Beyond the conventional characterization, the tribological test results of the composites are analysed using Taguchi experimental design.

Based on the test results of hybrid VE composites, it is established that the surface treatment has significant effect in increasing the mechanical properties of the composite. Further, the composites prepared with NaOH treated CF and silane treated AF and CSP outperformed all Set-I categories. With regard to hybridization; Set-II, the H6 series (VE-65+15 CF+AF+10 CSP) showed good mechanical properties and superior wear resistance with least friction coefficient.

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## Dissertation No. 95

Research Scholar	Title of the thesis	Guide
 <p>Shilpa .R Research Scholar Dept of E&amp;E Engg, PESCE Mandya</p>	<p>Power Quality Detection Classification and Monitoring Using Signal Processing Techniques</p>	 <p>Dr Puttaswamy P S Professor and Head, Dept of E&amp;E Engg, PESCE, Mandya</p>
Registration for PhD		October 2013
University /Branch		VTU Belgaum/Electrical Engineering
Viva-voce exam for Award of PhD degree		Submitted in 2018
<p style="text-align: center;"><b>Abstract</b></p> <p>The concern for voltage stability begins when the load on the system is heavy. The increase in load demand power is the primary cause of voltage instability state which results in disturbances that may cause serious harm to the load equipments. The issue of power quality generally comprises a discrepancy in the voltage or current, for instance voltage sag harmonics, fluctuations, interruptions and transients leading to breakdown of the equipment. Therefore, to enhance the power quality, there is a necessity of disturbance detection and also the type of distortions must be known so that proper mitigating action can be taken. A probable perspective in achieving this goal is to integrate detection facilities into a monitoring device such that events of concern can be identified, captured and classified. Thus, the primary requirement of the monitoring system is to detect, identify, classify and then mitigate properly so that power quality is improved. The present research work has explored most of the existing techniques with various hybrid combinations and utilized the same for the analysis of real time data signals and SIMULINK generated signals. The contribution of this research work comprises of three stages, namely the detection of disturbances, classification and the mitigation.</p>		

## Dissertation No. 96

Research Scholar	Title of the thesis	Guide
 Wa'el Ibrahim A. Almazaydeh Dept of Applied Science AQABA University College Albalqa Applied University Jordan	Developing of Image Steganography Algorithms for Secret Message Communications	 Dr.H.S.Sheshadri Professor Dept of E & C PESCE,Mandya
Registration for PhD	August 2015	
University /Branch	University of Mysore, Electronics	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>  The thesis concentrates on developing new algorithms for hiding a secret message in an image .It shows seven new algorithms to hide a secret message in an image: the first one is the common technique that is Least Significant Bit ( LSB ), the second one is LSB and Huffman coding , the third one is the LSB and Arithmetic coding, the fourth one is LSB and a dynamic symmetric key, the fifth one is LSB and a dynamic symmetric key by Huffman coding , the sixth one is LSB and a dynamic symmetric key by Arithmetic coding , the seventh one is LSB and spacing and the eighth one is LSB and XOR. The results of implementation are compared using peak signal to Noise Ratio (PSNR) value.		

## Dissertation No. 97

Research Scholar	Title of the thesis	Guide
 <b>K V R Prasad</b> Associate Professor Dept of Civil Engg Sir MVIT, Bangalore	<b>Investigation on            utilization of            recycled Poly            Ethylene            Teraphthalate            Modifier in            Bituminous road            construction</b>	 <b>Dr S P Mahendra</b> Professor Dept of Civil Engg PESCE, Mandya
Registration for PhD		Nov 2007
University /Branch		V T U /Civil Engineering
Viva-voce exam for Award of PhD degree		Submitted in 2018
<b>Abstract</b>		
<p>The unorganised and unsteady rate of urbanisation in India has led to increasing plastic waste generation which has resulted in a large amount of plastic waste, particularly plastic bags and Poly Ethylene Terephthalate (PET) bottles, being littered on the landscape of India. With the rising use of PET in a variety of applications like edible oil, soft drinks, mineral water etc, there is a need to manage the large amount of PET waste that would be generated.</p> <p>The purpose of this research is to investigate the possibility of using Polyethylene Terephthalate as polymer additives in Bituminous Mix. The present study has been undertaken by keeping four important goals in mind these are (i) environmental protection (ii) sustainable waste minimization and (iii) improved durability of roads (iv) Resource/Energy conservation. The characteristics of PET-modified bituminous mix is obtained by fix mixing temperature, was investigated. The binders were prepared by mixing the PET in 2%, 4%, 6%, 8% and 10% (by the weight of optimum bitumen) with VG 30 Grade (60/70 penetration) and VG10 ( 80/100 penetration) grade bitumen</p> <p>To fulfil the objectives of the study, first of all PET waste in shredded form was collected .Then modified binders and mixes are prepared with 2%, 4%, 6% ,8% and 10% PET waste content to perform the test of penetration, ductility, specific gravity, softening point, flash and fire point, loss on heating etc. Marshall Specimens were prepared with these binders and Marshall Tests were performed accordingly. The performances of modified bituminous mixes are evaluated by determining stability, flow, density and void in the mixes.</p> <p>The study results conclude that rheological properties like penetration, ductility and specific gravity of LDPE (waste plastic) modified bitumen decreases with increase of waste plastic contents while softening point, flash and fire point increases with increase in polymer contents in bitumen.The Marshal stability results reveals that the PET waste (polymer) increases the stability values of the compacted mixes with increasing the PET waste content.. The flow values obtained in the Marshal test show slightly increasing pattern up to 7.5% waste plastic content, whereas the density of the compacted mixes slightly decreases with the increase of waste plastic contents in the bitumen. It is expected that using the output this research, the PET waste materials can be used in bituminous roads works, resulting in minimization of the frequency of rehabilitation work and thereby providing an economic solution.</p>		

## Dissertation No. 98

Research Scholar	Title of the thesis	Guide
 Raghavendra Reddy NV Asst. Professor Dept. of Mechanical Engg JIT, Davanagere.	<b>Computational Fluid            Dynamics Simulation            of Compression            Ignition Engine            Processes</b>	 Dr. B Jayashankara Professor Dept. of Automobile Engg. PESCE, Mandya.
Registration for PhD		June 2010
University /Branch		VTU, Belagavi, Automobile Engineering
Viva-voce exam for Award of PhD degree		Submitted in 2018
<b>Abstract</b>		
<p>In-cylinder fluid motion in compression ignition (CI) engines is the one of the most important factors controlling the combustion process. It controls the fuel-air mixing and burning rates in diesel engines. The objective of this research is to develop advanced diesel combustion strategies for reduction in pollutant exhaust emissions in a single cylinder direct injection diesel engine.</p> <p>The performance and emissions of a compression ignition engine depends on proper matching of fuel injection with the in-cylinder fluid motion and combustion chamber geometry. Small changes of the combustion chamber geometry can lead to a significant improvement of mixture formation and thus reduced emissions.</p> <p>In the virtual development of future engine combustion processes 3D-Computational Fluid Dynamics (CFD) is an important tool. In the present work a multi-dimensional CFD code Ansys Forte is employed with a newly developed automated grid generator and a multi-objective genetic algorithm is used to study the combustion process and emissions. Four different combustion chamber geometries viz. flat; W-shape, Omega shape and deep reentrant toroidal combustion chamber geometries and their geometric variations are considered for the study.</p> <p>The incylinder pressure, temperature, heat release rate, NO<sub>x</sub>, Soot and CO emissions are analysed keeping the constant compression ratio for all the four geometries and bowl geometry variations.</p> <p>Response surface goal driven optimization is done for combustion chamber geometries and geometric variations for emissions by using Minitab. These individual optimization results show that different geometries and geometric variations play a significant role in reducing emissions. Results show that among these four engines combustion chamber geometries, deep reentrant bowl optimized geometry gives less emissions than the other geometries.</p>		

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## Dissertation No. 99

Research Scholar	Title of the thesis	Guide
 Vijaya Kumar Y M Assistant Professor Dept of Civil Engg A I T Chikmagalur	<b>Study On Jacketed Reinforced Concrete Column</b>	 Dr. Gopisiddappa Professor Dept of Civil Engg PESCE Mandya
Registration for PhD		November 2012
University /Branch		V T U Belgaum/Civil Engineering
Viva-voce exam for Award of PhD degree		Submitted in 2018
<b>Abstract</b>		
<p>The rehabilitation of concrete structures has become increasingly important as we hear more and more about deterioration of the infrastructure. The problem is more severe due to limited funds available for rebuilding these structures. During the last decade the researchers have been involved in various aspects of rehabilitation of concrete structures. These include bringing together engineers from the East and the West, to discuss such problems and develop common solutions through international symposia. The American Concrete Institute's (ACI's) committee 364 on "Rehabilitation of Concrete Structures" for a possible co-operation at global level. It was organized in 1981 with a mission of developing and reporting information for the rehabilitation, renovation of concrete and masonry structures.</p>		

## Dissertation No. 100

Research Scholar	Title of the thesis	Guide
 Devadath V R Associate Professor Dept of Mechanical Engg, P.E.S.C.E, Mandya	<b>Investigation Into The            Extrusion Honing            Process Performance</b>	 Dr. H.P. Raju Professor and Head Dept of Mechanical Engg, P.E.S.C.E, Mandya
Registration for PhD	March 2004	
University /Branch	VTU, Belagavi/Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b> Extrusion honing (EH) is a method for micro-finishing of internal surface and complex surfaces by the extrusion of abrasive media semisolid flowable grinding putty across those surfaces. The process is abrasive only where the media flow is restricted. The present work is to investigate experimentally the impact of different mesh sizes of silicon carbide at various concentrations in a patented polymer on Hastelloy C22 specimen using indigenously built one way EH setup. The effect of each input parameter on the internal surface roughness and the material removal (MR) after each EH experiment have been examined. The study revealed that for all passage diameters, silicon carbide of 54 mesh size at 40% concentration is better for material removal and better surface finish. EH experiment was also conducted on Hastelloy C22 specimens having profile generated by Electro Discharge Machining (EDM) process. The SEM photographs taken after EH experiment depicted complete elimination of recast layer formed on the surface by EDM process and XRD analysis of EDMed surface after EH experiment showed presence of compressive residual stress on the surface. The developed ANN model successfully predicted the surface roughness parameters and MR of Hastelloy C22 superfinished by EH process.		

## Dissertation No. 101

Research Scholar	Title of the thesis	Guide
 Lakshmi Narasimha Murthy H.R Research Scholar. Dept of Mechanical Engg, P.E.S.C.E, Mandya	<b>Studies on            Machinability            Characteristics of            Aluminium Matrix            Hybrid Composites</b>	 Dr. Ramalingaiah Professor, Dept of Mechanical Engg. MRIT, Mysuru
Registration for PhD	November 2010	
University /Branch	VTU/Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>		
<p>Aluminium alloys are preferred for applications demanding light weight. Aluminium copper alloy finds more application and Al2419 is widely used. Composites of aluminium copper alloy, Al2419 are used because of high strength to weight ratio. Silicon carbide is usually reinforced with Al2419 alloy in particulate form and graphite particulates are used as second reinforcement in hybrid composites.</p> <p>Al2419 alloy is reinforced with 0 to 8 % SiC particulates in Al-SiC composites and 1% Gr is reinforced in Al-Gr-SiC hybrid composites in addition to 0 to 8% SiC in the present investigation. As cast Al-SiC composites and Al-Gr-SiC hybrid composites have exhibited improved tensile yield strength and ultimate tensile strength for 0 to 8% SiC addition with these values being higher for Al-Gr-SiC hybrid composites than for Al-SiC composites. Hardness of both the composites has improved for 0 to 8% SiC reinforcement with Al-SiC composites harder than Al-Gr-SiC hybrid composites. Addition of 0 to 8% SiC has reduced percentage elongation of both the composites with Al-SiC composites exhibiting higher percentage elongation than Al-Gr-SiC hybrid composites.</p> <p>Machinability characteristics by turning using HSS tool and PCD tool is investigated with experiments planned according to Central Composite Design of Experiments. Percentage SiC reinforcement, cutting speed, feed and depth of cut are the parameters included in the experimental plan for turning. Cutting force, tool wear and surface roughness in turning Al-SiC composites and Al-Gr-SiC hybrid composites are measured as responses. Results of turning experiments are analyzed with ANOVA which also facilitates in ascertaining percentage contribution of each of the turning parameters. Factorial analysis has led to know the effect of the turning parameters on the measured responses. Contour plots of Response Surface Analysis have provided optimal combinations of turning parameters for least values of cutting force, tool wear and surface roughness.</p> <p>Feed has dominant effect on cutting force, tool wear and surface roughness of both the composites. HSS tool is favorable for Al-SiC composites resulting in least cutting forces and tool wear. Use of PCD tool has yielded better surface finish in Al-SiC composites. Better performance of PCD tool is observed in Al-Gr-SiC hybrid composites yielding least cutting force and tool wear. HSS tool outperforms in giving good surface finish for Al-Gr-SiC hybrid composites.</p>		

## Dissertation No. 102

Research Scholar	Title of the thesis	Guide
 <b>Ganesha B</b> Associate Professor Dept. of Mechanical Engg BITM, Ballari	<b>Fault Diagnosis of            Critical Rotating            Machinery of Steel            Industry using            ANFIS</b>	 <b>Dr. K N Umesh</b> Professor Dept. of Mechanical Engg P E S C E, Mandya
Registration for PhD	November 2006	
University /Branch	V T U Belagavi, Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>		
<p>Vibration analysis demonstrate that accelerometers and sensors mounted on bearing locations of the rotating machinery, can monitor the current status of the rotating machinery such as unbalance, misalignment, fatigue wear and bearing condition. If these defects are not diagnosed catastrophic failure of the machinery is imminent and hence the diagnosis has to be carried out from the operational safety point of view.</p> <p>This research is an attempt to gain a better insight into the vibration phenomena of the rotating machinery in steel industries and the topic of research is defined as, “Fault Diagnosis of Critical Rotating Machinery of Steel Industry Using <i>ANFIS</i>”. The scope of the work confines to investigation of those faults due to running speed harmonics and the rest due to gear mesh frequencies are excluded.</p> <p>All the experimental investigations were done on actual machineries, in Jindal Steel Works (<i>JSW</i>), Ballari, one of the Asia’s biggest Steel Industry in India, while they are engaged in real time production processes. Out of the eight important machines identified, three top most critical machines, Mill stand, Air compressor and Feed Pump were considered for investigation. The top most critical machine, Mill stand was pursued for detailed investigation, as typical case study.</p> <p>A brief outline of the procedure followed to conduct this novel research on the use of <i>ANFIS</i> to model and simulate and then to diagnose the critical machineries, is presented. It actually begins with a detailed study of steel making and identification of machinery through criticality analysis using failure mode effect critical analysis (<i>FMECA</i>).</p> <p>Preliminary studies were conducted using vibrometer. Later the experiments were designed using Taguchi Techniques and standardized using orthogonal array for three design factors, <math>f</math>, <math>l</math> and <math>d</math> and response factor, <math>v</math>. The vibration velocity components <math>v_H</math>, <math>v_V</math> and <math>v_A</math> obtained corresponding to each frequency along horizontal, vertical and axial directions at three different locations. <i>MINITAB</i> was used to conduct Response analysis and Analysis of Variance (<i>ANOVA</i>). The accuracy of the vibration analysis was confirmed through matching optimum of parameters of the combination of run. <i>FFT</i> analyser was used for further experimentation in order to obtain more accurate readings and many complex faults were identified.</p> <p>Sugeno type Adaptive Neuro Fuzzy Inference Systems (<i>ANFIS</i>) with many input nodes and one output (<i>MISO</i>) was used to model rotating machinery on <i>MATLAB</i>, using <i>ANFISTool</i></p>		

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Box. The velocity features, extracted from the vibration behaviour characteristics of machinery, were input to obtain, the fault states as, the output. The machinery under consideration was simulated by submitting training, testing and checking data sets to the *ANFIS* model. Validity of the model could be ascertained by a stable behaviour, where in the trend error difference between training and checking is minimal. *ANFIS* modeling enabled to assess the condition of the machine, through classification of output as, different *States* including *Normal*, by using fuzzy rules set. The simulated behaviour of the model was verified through Confusion matrix by a computing Total Classification Accuracy (*TCA*), which was found to be  $\approx 100\%$ , in a majority of the cases.

Diagnostics Tool was developed using *MATLAB* for fault diagnosis of critical rotating machinery of steel plant. A knowledge base of Vibration Severity limits and Classes of Machine as per *ISO Standards (ISO 2372 & 3945)* was created. It also includes significant peaks and their order of specific signature features of typical faults due to mechanical vibration. Quantitative analysis provides an assessment of the condition of machine, such as *A-Allowable, P-Permissible, C-Just Tolerable and NP-Not permissible*. Strategies of maintenance will be suggested based on the conditions, based of vibration severity limit. Qualitative analysis provides for identification of the exact fault based on vibration signature and provides guidance for inspection and troubleshooting.

Adaptive Neuro Fuzzy Inference System (*ANFIS*) diagnostic approach was quite useful in quantifying the faults in rotating machinery, besides quantification. The diagnostics enables instant fault diagnosis efficiently while not disturbing the actual production process for any set of new data delivered in real time and provides for maintenance and troubleshooting.

The results of the research including case studies of Vibration, Diagnostic Tool and *ANFIS* analysis were compared, discussed and summarized. It was found for most of the situations the results of *ANFIS* studies matches with the remaining investigations. Later on some important conclusions were drawn and some suggestions made for future work.

## Dissertation No. 103

Research Scholar	Title of the thesis	Guide
 Lingaraju K.N Govt Engg College Chamarajanagar	<b>A Study of Extrusion            Honing Process            Induced Surface            Integrity</b>	 Dr. H.P. Raju Professor and Head Dept of Mechanical Engg, P.E.S.C.E, Mandya
Registration for PhD	March 2009	
University /Branch	V T U Belagavi/ Mechanical Engineering	
Viva-voce exam for Award of PhD degree	Submitted, in 2018	
<b>Abstract</b>		
<p>The research work deliberates on the importance of biometric applications and its implications in the field of machine learning and pattern recognition.</p> <p>Main objective of the research is to propose fingernails as an emerging, alternative biometric identifier and further propose its fusion with fingernail biometric identifier as a new combination of multimodality features.</p> <p>The research work comprises of techniques followed to achieve the objective proposal through the related sub-objectives as briefly put across. The need and scope for emerging biometric, its application advantages and disadvantages as compared to established identifiers is deliberated.</p> <p>The requirement of representative dataset for the defined problem is noted. In the process, we outline the laboratory settings required to setup sensors to capture fingernail and fingerprint images to create datasets for experimentation.</p> <p>The feasibility of fingernails segmentation is tested using previously existing methods. Based on the limitations of tested methods, an alternative algorithm is proposed using marker controlled watershed principle to identify free nail growth at distal edge and to drop it to extract accurate fingernail plate area shape as descriptor.</p> <p>The region based and dimensionality reduction methods are examined to extract unique fingernails features. The best possible features sets are considered that could characterize person's biometric identity for recognition. In addition, the multiple fingernail features are visually represented to create templates. Similarities are measured for person identification and fingernail classification.</p> <p>The fusion of fingernail and fingerprint features is proposed to overcome identification errors of elderly people due to damaged, smooth or weakened fingerprints.</p> <p>The research study includes tested methods and experimented algorithms on fingernail patterns and its fusion possibility with fingerprint patterns, all based on machine-learning techniques for person identification in automation systems.</p>		

## Dissertation No. 104

Research Scholar	Title of the thesis	Guide
 N S Kumuda	<b>Methods Towards Multimodal Biometric Pattern Analysis</b>	 <b>Dr. Dinesh M S</b> Honorary Professor PET Research Centre PES College of Engineering, Mandya
Registration for PhD	March 2011	
University /Branch	University of Mysore/ Computer Science	
Viva-voce exam for Award of PhD degree	Submitted in 2018	
<b>Abstract</b>		
<p>The research work deliberates on the importance of biometric applications and its implications in the field of machine learning and pattern recognition.</p> <p>Main objective of the research is to propose fingernails as an emerging, alternative biometric identifier and further propose its fusion with fingernail biometric identifier as a new combination of multimodality features.</p> <p>The research work comprises of techniques followed to achieve the objective proposal through the related sub-objectives as briefly put across. The need and scope for emerging biometric, its application advantages and disadvantages as compared to established identifiers is deliberated.</p> <p>The requirement of representative dataset for the defined problem is noted. In the process, we outline the laboratory settings required to setup sensors to capture fingernail and fingerprint images to create datasets for experimentation.</p> <p>The feasibility of fingernails segmentation is tested using previously existing methods. Based on the limitations of tested methods, an alternative algorithm is proposed using marker controlled watershed principle to identify free nail growth at distal edge and to drop it to extract accurate fingernail plate area shape as descriptor.</p> <p>The region based and dimensionality reduction methods are examined to extract unique fingernails features. The best possible features sets are considered that could characterize person's biometric identity for recognition. In addition, the multiple fingernail features are visually represented to create templates. Similarities are measured for person identification and fingernail classification.</p> <p>The fusion of fingernail and fingerprint features is proposed to overcome identification errors of elderly people due to damaged, smooth or weakened fingerprints.</p> <p>The research study includes tested methods and experimented algorithms on fingernail patterns and its fusion possibility with fingerprint patterns, all based on machine-learning techniques for person identification in automation systems.</p>		

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# TORCH BEARERS OF RESEARCH

## *Profiles of Research Guides*

Name	<b>Dr Ramalingaiah L</b>					
Designation, Department & Affiliated Institution	Principal(Retd) P E S College of Engineering, Mandya					
Research Area	Environmental Engineering					
Contact no	9845054593					
Email ID	<a href="mailto:ramlingaiah1943@gmail.com">ramlingaiah1943@gmail.com</a>					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D		Technical University of Novescotia , Halitax Cannada	1985			
M E	IIT Kanpur	IIT Kanpur	1973			
B E	BDTCE Davanagere	University of Mysore	1969			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Principal	1995-2001			
		Professor & Head	1985-1995			
		Asst Prof.	1973-1985			
		Lecturer	1969-1973			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01	15				
<b>Sponsored Research</b>						
Funding Agency		Project Title	Amount(Rs.)	Period		

Name	<b>Dr B. Shivalingaiah</b>					
Designation, Department & Affiliated Institution	Professor (Retd) Department of Civil Engg. P E S College of Engineering, Mandya					
Research Area	Environmental Engineering					
Contact no	9844033009/9845679009					
Email ID						
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University		Year		
Ph.D		McMaster University, Cannada	Hamlington,	1984		
M E	UVCE	Bangalore		1977		
B E	PESCE,Mandya	University of Mysore		1972		
<b>Professional Experience</b>						
Organization & dept.		Designation		Period		
PESCE, Mandya		Professor		1998		
		Asst Prof		1986-1988		
		Lecturer &		1973-1986		
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01					
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. V Sridhar</b>					
Designation, Department & Affiliated Institution	Principal (Retd) PES college of Engineering Mandya					
Research Area	VLSI, Cryptography, Biometrics, Biosensor and Instrument, Wireless and Communication					
Contact no	9448333277					
Email ID	venusridhar@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Post Doctoral Research		University Tenaga Nasional Kajang, Malaysia	2000 to 2002			
Ph.D	IIT, New Delhi	IIT, New Delhi	1995			
ME	Jadavpur University	Jadavpur University	1985-86			
BE	PESCE, Mandya	University of Mysore	1980			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
PESCE Mandya	Principal		2008 to 2018			
	Professor		1996 to 2008			
	Assistant Professor		1989 to 1996			
	Lecturer		1982 to 1989			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	09	02	03	02	37	34
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
VGST	Infrastructure Strengthening in Science and Technology in Higher Educational Institutions			20 lakhs	2010-12	
S & T Project Mission	Acquisition & Characterization of EMG Single for Human Machine Interface			12.91 lakhs	2007-09	
AICTE	Telemedicine on 3G Mobile			9.15 lakhs	2004-06	

Name	<b>Dr. H. V. Ravindra</b>					
Designation, Department & Affiliated Institution	Principal PESCE, Mandya.					
Research Area	Condition Monitoring & Process Optimisation					
Contact no	9986025372					
Email ID	mailhovera@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D.	IIT, Madras	IIT, Madras	1990-93			
M.Tech	IIT, Madras	IIT, Madras	1987			
B.E.	PESCE	Mysore University	1983			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
P.E.S.C.E Mandya	Principal		Sept 2018 – till date			
	Vice-Principal		Nov 2016- Aug. 2018			
	Prof & Head		2008- 2012			
	Professor		2001-2008			
P.E.S.C.E Mandya	Asst Prof		1994 - 2001			
P.E.S.C.E Mandya	Senior Lecturer		1990 - 1994			
P.E.S.C.E Mandya	Lecturer		1984 - 1990			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	09		04	01	45	112
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
DRDO, Pune	Monitoring the status of the drilled hole in composite material using multi sensory approaches			10 lakhs	2014-17	
UGC	Monitoring of electrode in WEDM machining using Multi – sensory approaches			6.30 lakhs	2013	
VTU	Machine tool condition monitoring using Machine vision			6.35 lakhs	2012-15	
AICTE	Optimisation of process parameters and monitoring the electrode in WEDM			7.00 lakhs	2010-12	
UGC	Image Processing Technique for			6.96 lakhs	2007-09	

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	Automated Inspection and Flow Visualization		
AICTE	Industry institute Partnership Cell	1 lakhs	2006-07
DST	Improvement of post Graduate teaching facilities	20 lakhs	2005-07
UGC	Condition Monitoring of the Machine tools	6.60 lakhs	2002-05
AICTE	Industry Institute Partnership Cell	8 lakhs	2002-04
AICTE	Condition Based Maintenance in sugar Industries	3.64 lakhs	2000-01

Name	<b>DR. K N Umesh</b>					
Designation, Department & Affiliated Institution	Professor (Retd) Department of Mechanical Engg. PES College of Engineering Mandya					
Research Area	Machine Design, Robotics, CBM					
Contact no	9243580956					
Email ID	drknumesh@pesce.ac.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT Bombay, Mumbai	Autonomous Body	1994			
M.Tech	IIT Madras, Chennai	Autonomous Body	1987			
BE.	PESCE, Mandya	University of Mysore	1980			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
PESCE, Mandya	Professor	2008 - 2016				
PESCE, Mandya	Dean (academic Affairs)	2008 to 2015				
PESCE, Mandya	Professor and Head Department of Mechanical Engineering:	1999 to 2008				
PESCE, Mandya	Assistant Professor and Head of the Mechanical Engineering	1997 to 1999				
PESCE, Mandya	Assistant Professor Mechanical Engineering:	1988 to 1997				
PESCE, Mandya	Lecturer of Mechanical Engineering	1982 1988				
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01		03		08	12
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
AICTE	Centre for robotics & Automation			8 lakhs		

Name	<b>Dr H S Sheshadri</b>					
Designation, Department & Affiliated Institution	Professor(Retd) Dept of ECE PES college of engg, Mandya					
Research Area	Medical Image analysis					
Contact no	9986304288					
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<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph D	PSG Tech, Coimbatore	Anna university , Chennai.	2003 -2008			
M.E	-----do-----	Bharathiar University, Coimbatore	1987-89			
B E	PESCE, Mandya	University of Musore	1974-79			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya Electronics Engg.		Professor in ECE	Since 2008 till date			
PESCE, Mandya Electronics Engg.		Asst. Prof in ECE	1990- 2008			
PESCE, Mandya Electronics Engg.		Lecturer in ECE	1982-1990			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	07		08		42	31
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
VGST	Medical Image Analysis lab			20 Lakhs	2014-17	

Name	<b>Dr.A.T.Eswara</b>					
Designation, Department & Affiliated Institution	Professor & Head (Retd) Dept. of Mathematics PESCE, Mandya					
Research Area	CFD –Boundary layer Theory					
Contact no	+91 9844666065					
Email ID	ateswara@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD	IISc, Bangalore	IISc, Bangalore	1993			
MSc	Manasagangotri	University of Mysore	1978			
BSc	Govt.College, Hassan	University of Mysore	1976			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
GSSSIETW, Mysuru	Professor & Head	2015 to till date				
PESCE, Mandya	Professor & Head	2001 to 2015				
MCE, Hassan	Asst.Professor	1993 to 2001				
MCE, Hassan	Lecturer	1980 to 1993				
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	05				27	24
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			

Name	<b>Dr. B. Ramachandra</b>					
Designation, Department & Affiliated Institution	Professor & Head (Retd) Department of Electrical & Electronics Engg., PES College of Engineering, Mandya					
Research Area	<ul style="list-style-type: none"> <li>• High Voltage Engineering</li> <li>• Nano Technology</li> <li>• Data Mining</li> <li>• Image Processing</li> </ul>					
Contact no	+91 9035039360					
Email ID	bramachandra1@yahoo.co.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IISc, Bangalore	IISc, Bangalore	1998			
M.Tech	IIT, Bombay	IIT, Bombay	1987			
B.E	NIE, Mysore	University of Mysore	1980			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
NIE, Mysore		Lecturer	1980 – 1981			
PESCE, Mandya		Lecturer	June 1983 – Dec 1995			
PESCE, Mandya		Assistant Professor	Jan 1996 – May 2000			
PESCE, Mandya		Professor	June 2006			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	04		02	02	14	17
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
Department of Industries & Commerce Govt. of Karnataka	Establishing High voltage Insulation Laboratory		50 lakhs	2012- 14		
AICET	Development modern Industrial drives laboratory		8 lakhs	2001-02		

Name	<b>Dr.S.P.Mahendra</b>					
Designation, Department & Affiliated Institution	Professor (Retd) Civil Engineering Department. PESCE, MANDYA.					
Research Area	Highway Engineering					
Contact no	9449260045					
Email ID	mahendraphd@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	UVCE	Bangalore	2005			
M.E	UVCE	Bangalore	1995			
B.E	PESCE,	Mysore	1985			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya, Dept of civil engg		Lecturer	1987 to 2005			
PESCE, Mandya, Dept of civil engg		CAS PROFESSOR	2005 to 2018			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01	01	05		01	02
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			
VTU	Utilization of recycled polyethylene terephthalate	6.10 lakhs	2010-11			
UGC	Road traffic impact on urban Air Quality	4 lakhs	2010-11			
AICTE	Impact assessment of ambient traffic Noise Pollution	3 lakhs	2009-10			
AICTE	Air quality deterioration due to vehicular pollution	5 lakhs	2006-08			
AICTE	Modeling and assessment of Traffic on Air Pollution in Bangalore Urban area	6 lakhs	2002-04			

Name	<b>Dr. G P Shivashankara</b>					
Designation, Department & Affiliated Institution	Professor(Retd) Dept. of Civil Engg., PESCE Mandya					
Research Area	Environmental Engineering					
Contact no	9448886809					
Email ID	gpshivashankara@yhao.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	UVCE	Bangalore University	1999			
M.Tech	IIT	IIT Bombay	1990			
BE	PES College of Engineering Mandya	University of Mysore	1983			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE Mandya, Civil Dept		Professor	2012 to 2018			
Environmental Engg., Dept PESCE Mandya		Professor and HOD	2008 to 2012			
PESCE Mandya, Civil Engg., Dept		Professor (CAS)	2006 to 2008			
PESCE Mandya, Civil Engg., Dept		Asst. Prof	1999 to 2006			
PESCE Mandya, Civil Engg,Dept		Senior Grade Lecture	1994 to 1999			
PESCE Mandya, Civil Engg,Dept		Permanent Lecturer	1988 to 1994			
PESCE Mandya, Civil Engg., dept		Temporary Lecturer	1984 to 1988			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	04	01	07	-----	16	13
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
VTU	Assessment and a role of precipitation on groundwater quality			16.54 lakhs	2008-11	
AICET	Urban and rural bulk precipitation chemistry network			8.40 lakhs	2002-03	
AICET	Modeling and Assessment of Impact of traffic on Air Pollution in Bangalore, urban area			6 lakhs	2000-02	

Name	<b>Dr.H.S.Suresh Chandra</b>					
Designation, Department & Affiliated Institution	Professor (Retd) Civil Engineering Department. PESCE, MANDYA.					
Research Area	Engineering Structures					
Contact no	9741523181					
Email ID	schandrapes@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PET Research centre	VTU	2013			
M.Tech	REC, Warangal,	Kakathiya	1998			
B.E	PESCE,	Mysore	1982			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
Dept of civil engg, PESCE		Permanent lecturer	84 to 1992			
Dept of civil engg, PESCE		Senior grade lecturer	1992 to 1998			
Dept of civil engg, PESCE		Selection grade lecturer	1998 to 2005			
Dept of civil engg, PESCE		Associate professor	2006 to till date			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			04		04	02
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. B.G.Naresh Kumar</b>					
Designation, Department & Affiliated Institution	Professor Department of Civil Engg. P E S College of Engineering, Mandya					
Research Area	Structural Engineering					
Contact no	9448951399					
Email ID	<a href="mailto:nareshgowda58@gmail.com">nareshgowda58@gmail.com</a>					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D		University of Rookee	1997			
M E		University of Rookee	1987			
B E	PESCE,Mandya	University of Mysore	1981			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Professor and Head	2005-2008			
		Asst Prof.	1988-2005			
		Lecturer	1981-1988			
Research Guidance						
	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02					
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. B JayaShankara</b>					
Designation, Department & Affiliated Institution	Professor (Retd) Dept. of Automobile Engineering, P.E.S College of Engineering, Mandya					
Research Area	Computational Fluid Dynamics/ IC Engines					
Contact no	+91 99163 37513					
Email ID	bjs_pesm@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT	IIT, Chennai	2009			
M.Tech	Anna university	Anna university	1989			
BE	PESCE, Mandya	University of Mysore	1984			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S College of Engineering, Mandya		Professor	2009			
		Assistant Professor	1989 - 2009			
		Lecturer	1982 - 1989			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		01	
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr. K. N. Muralidhara</b>					
Designation, Department & Affiliated Institution	Professor, Department of Electronics and communication Engg PESCE, Mandya					
Research Area	Electronic devices, VLSI Design, Wireless communication, Mobile Communication					
Contact no	Mob:9036953423					
Email ID	Knm08@rediffmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT, Roorkee	IIT, Roorkee	1998			
ME	IIT, Roorkee	IIT, Roorkee	1990			
BE	PESCE, Mandya	PESCE, Mandya	1981			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
P E S College of Engg, Mandya	Professor(CAS)	1999 To Till date				
P E S College of Engg, Mandya	Associate professor	1998 To 1999				
P E S College of Engg, Mandya	Senior Lecturer	1990 To 1998				
P E S College of Engg, Mandya	Lecturer	1982 To 1990				
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	04		06		26	31
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			

Name	<b>Dr.S.S.Parthasarathy</b>					
Designation, Department & Affiliated Institution	Professor, Dept of E&EE,PESCE,Mandya					
Research Area	Advanced Control Engineering					
Contact no	+91 9449183746					
Email ID	vsarathypartha@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IITM,Chennai	IITM,Chennai	2007			
M.Tech	IIT,Kharagpur	IIT,Kharagpur	1997			
B.E.	NIE,Mysore.	Mysore University	1983			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
PESCE,Mandya, Electrical Engg.	Assistant Professor	1983 to Till date				
PESCE,Mandya, Electrical Engg.	Associate Professor					
PESCE,Mandya, Electrical Engg.	Professor					
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	04		04		22	17
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			

Name	<b>Dr B.S.Shivakumara</b>					
Designation, Department & Affiliated Institution	Professor & Head I&P Engineering P.E.S College Engineering Mandya					
Research Area	Electronics/ I&P Engineering area/Ergonomics					
Contact no	9448514205					
Email ID	shivakumarabs@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya	University of Mysore	2011			
M.Tech	I.I.T Madras	I.I.T Madras	1987			
BE	PESCE, Mandya	Mysore	1981			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
I&P dept, PESCE,Mandya	Professor		2006 to Till date			
I&P dept, PESCE,Mandya	Assistant Professor		2004 to 2005			
I&P dept, PESCE,Mandya	Lecturer/Senior Lecturer & Selection grade Lecturer		1982 to 2004			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01	01	04	01
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr. P.S. Puttaswamy</b>					
Designation, Department & Affiliated Institution	Professor & Head Electrical And Electronics PES College Of Engineering, Mandya					
Research Area	Power Electronics & Drives, Power System And Image Pocessing					
Contact no	9986139186					
Email ID	psputtaswamy_ee@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	University of Roorkee	Roorkee	2000			
M.E	University of Roorkee	Roorkee	1989			
B.E	PESCE, Mandya	University of Mysore	1983			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya Electrical Dept.		Professor and Head	2017 – till date			
PESCE, Mandya Electrical Dept.		Professor	2001 to 2017			
PESCE, Mandya Electrical Dept.		Asst. Prof.	1996-2001			
PESCE, Mandya Electrical Dept.		Lecturer & Senior Lecturer	1984-1996			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	05	01	06		27	15
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr. H.P Raju</b>					
Designation, Department & Affiliated Institution	Professor, Dept. of Mechanical Engineering.					
Research Area	Precision Engineering					
Contact no	9480255588					
Email ID	rajuhp@hotmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT Madras, Chennai	IIT Madras, Chennai	2003			
M.E.	University of Roorkee, Roorkee	University of Roorkee, Roorkee	1991			
B.E	PES College of Engg, Mandya	Mysore	1984			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S.C.E Mandya, Mechanical		Professor	2003 to till date			
P.E.S.C.E Mandya, Mechanical		Selection Grade Lecturer	2000 to 2003			
P.E.S.C.E Mandya, Mechanical		Senior Lecturer	1993 to 2000			
P.E.S.C.E Mandya, Mechanical		Lecturer	1985 to 1993			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01		08		03	18
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
AICTE	Micro finishing of internal primitives through extrusion honing process		11 Lakhs	2007		

Name	<b>Dr J Venkatesh</b>					
Designation, Department & Affiliated Institution	Professor and Head, Department of Automobile Engg. P E S College of Engineering, Mandya					
Research Area	Composite materials, Automobile Engg.,					
Contact no	94486 481018					
Email ID	jvenkateshpesce@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	CMRTU, Bangalore	University of Mysore	1987			
M E	MIT	Anna University	1989			
B E	PES College of Engg.,	University of Mysore	1984			
B Sc	JSS College, Mysore	University of Mysore	1980			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Professor and Head	Oct 2008-Till date			
		Professor	Dec 2002- Oct2008			
		Lecturer & Asst Prof.	Dec 1984- Dec 2002			
Research Guidance						
	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02		06			
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	
AICTE		MODROB		5.00lakhs		

Name	<b>Dr. Gopi Siddappa</b>					
Designation, Department & Affiliated Institution	Professor Civil Engineering Department, P.E.S. College of Engineering, Mandya					
Research Area	Structural Engineering and Geotechnical Engineering					
Contact no	9448745759					
Email ID	gopisiddappa@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT Roorkee	IIT Roorkee	2006			
M.Tech	IIT Bombay	IIT Bombay	1988			
B.E	SJCE, Mysore	Mysore university	1983			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
P.E.S.C.E Mandya	Profesor	2007-till date				
	Assistant Professor	1991-2006				
	Lecturer	1984-1990				
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
				04	03	03
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr.C.J.Gangadhara Gowda</b>					
Designation, Department & Affiliated Institution	Professor Mechanical Engg. Department PES College of Engineering Mandya					
Research Area	Noise control Engineering					
Contact no	9448264234					
Email ID	cjggowda.@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
B.E	PESCE, Mandya	Mysore	1983			
M.Tech	I.I.T Madras	I.I.T Madras	1989			
Ph.D	I.I.T Madras	I.I.T Madras	2001			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S.C.E Mandya, Mechanical		Professor	2004 to till date			
P.E.S.C.E Mandya, Mechanical		Sel Grade Lectuer	1998 to 2004			
P.E.S.C.E Mandya, Mechanical		Senior Lecturer	1990 to 1998			
P.E.S.C.E Mandya, Mechanical		Lecturer	1984 to 1990			
P.E.S.C.E Mandya, Mechanical		Temp Lecturer	1983 to 1984			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01		04		07	11
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
AICTE	Micro finishing of internal primitives through extrusion honing process		11 Lakhs	2007		

Name	<b>Dr. T.Nagaraju</b>					
Designation, Department & Affiliated Institution	Professor And Head, Dept. Of Mechanical Engineering , P. E. S. College Of Engg., Mandya					
Research Area	Tribology (Fluid-Film Bearing)					
Contact no	9845431881					
Email ID	tnagghally@yahoo.co.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College		University		Year	
Ph.D	I I T. Roorkee		I I T. Roorkee		2003	
M.E	University of Roorkee		University of Roorkee		1994	
B.E	Mysore University		Mysore University		1985	
<b>Professional Experience</b>						
Organization & dept.			Designation		Period	
PESCE, Mandya, Mechanical			Professor		2003 to till date	
PESCE, Mandya, Mechanical			Sel Gr. Lecturer		1996 to 2003	
PESCE, Mandya, Mechanical			Senior Lecturer		1992 to 1996	
PESCE, Mandya, Mechanical			Lecturer		1991 to 1992	
PESCE, Mandya, Mechanical			Contract Teachers		1986 to 1991	
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02		04		09	15
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
AICTE	Experimental Investigation of surface Roughness Effects on Journal Bearing Performance			7.5 lakhs	2004-2006	

Name	<b>Dr. Ajit Prasad S.L.</b>					
Designation, Department & Affiliated Institution	Professor Dept of Mechanical Engineering PES College of Engineering					
Research Area	Tribology of Composite Materials Structural Analysis of Machine Elements					
Contact no	9448643501					
Email ID	palspesce@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD	IIT, Madras	IIT, Madras	2000			
MTech	IIT, Madras	IIT, Madras	1989			
BE	PESCE, Mandya	University of Mysore	1983			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya, Mechanical		Professor	2001-till date			
PESCE, Mandya, Mechanical		Sel. grade Lecturer	1999 - 2001			
PESCE, Mandya, Mechanical		Senior grade Lecturer	1991 - 99			
PESCE, Mandya, Mechanical		Lecturer	1984 - 90			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02		04	01	16	45
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
AICTE	Vibration and Noise Analysis of Parallel Shaft Gear Drive Systems		10 lakhs	2017-20		
AICTE	Tribological study of Metal Matrix Composite Materials		8 lakhs	2005-08		

Name	<b>Dr K A Radhakrishna Rao</b>					
Designation, Department & Affiliated Institution	Professor and Head in E & C Engg					
Research Area	Signal Processing					
Contact no	9886064102					
Email ID	karkrao@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph D	I ISc	I ISc	2004			
M Tech	I I T Madras	I I T Madras	1989			
B E	PESCE, Mandya	Univ of Mysore	1984			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
PESCE, E & C Engg	Prof and Head of E & C Engg		May 2016 – till date			
PESCE, E & C Engg	Prof and Head of Placement		2004 - 2014			
PESCE, E & C Engg	Professor		Jan 2004 till date			
PESCE, E & C Engg	Lecturer, Senior lecturer, Selection grade		1985-2004			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02		03		08	17
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. K M Jagadeesha</b>					
Designation, Department & Affiliated Institution	Associate Professor, Dept. of Automobile Engineering, P.E.S College of Engineering, Mandya					
Research Area	Tribology & Vehicle Dynamics					
Contact no	+91 78999 03374					
Email ID	kmjagadeshmys@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya	VTU, Belagavi	2013			
M.Tech	IIT, Roorkee	IIT, Roorkee	1989			
B.E	PESCE, Mandya	University of Mysore	1984			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya, Automobile		Associate Professor	1985 to Tilldate			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		02	02
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr R M Mahalinge Gowda</b>					
Designation, Department & Affiliated Institution	Professor Civil Dept					
Research Area	Environmental Engineering					
Contact no	9844248272					
Email ID	mahalgpes@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT Delhi	IIT Delhi	1999			
ME	University of Roorkee	IIT Roorkee	1991			
BE	PESCE	University of Mysore	1986			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Civil Engg Dept		Professor and Head	2018-till date			
		Professor	2003 to 2018			
		Asst Professor	1996 to 2003			
		Lecturer	1986 to 1996			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	03	02	02		11	01
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
	Physical Modelling for air Pollution Dispersion Studies and wind disaster mitigation		12.00 Lakhs			
	Rural ground water quality analysis of Mandya District		35.00 Lakhs			
	Wind tunnel simulation study of vehicular emission dispersion in the near field of roadways		19.75 Lakhs			

Name	<b>Dr S.Murali</b>					
Designation, Department & Affiliated Institution	Professor Department of Computer Sc. & Engg. P E S College of Engineering, Mandya					
Research Area	Image Processing					
Contact no	9620228001					
Email ID	nymurali@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	-----	Mysore University	2000-2010			
M E	MIT,Manipal	Mangalore University	1999			
B E	JMTT,Chitradurga	Mysore University	1995			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
PESCE, Mandya	Professor and Head		2000-2010			
	Professor		2000-2010			
	Lecturer & Asst Prof.		1995			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	06	05			25	35
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
AICTE	Document text Segmentation and Identification in moving picture			6.00 Lakh	2009-2011	
DRDO	Video segmentation for vision based Surveillance with MICAV's for Situation awareness and activity tracking			5 Lakh	2007-2009	
UGC	View metrology on uncalibrated 2-d images and an approach to 3-d modeling and rendering			6.14 Lakh	2006-2009	

Name	<b>Dr. Vasudev T</b>					
Designation, Department & Affiliated Institution	Professor, Dept. of computer Applications, Maharaja Institute of Technology, Mysore					
Research Area	Digital Image Processing					
Contact no	9620228004					
Email ID	vasu@mitmysore.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD		University of Mysore	2008			
MSc(By Research)		University of Mysore	2001			
MCA	PESCE, Mandya	University of Mysore	1995			
PG Dip(Comp. Applns)	PESCE, Mandya	University of Mysore	1985			
BSc	St Philomena College, Mysore	University of Mysore	1981			
<b>Professional Experience</b>						
Organization & dept.	Designation	Period				
PESCE, Mandya	Programmer	1986-1997				
PESCE, mandya	Lecturer	1997-2003				
PESCE, Mandya	Asst. Professor	2003-2009				
PESCE, Mandya	Professor	2009-2011				
MIT, Mysore	Professor	2011 till date				
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			

Name	<b>Dr. M C Padma</b>					
Designation, Department & Affiliated Institution	Professor and Head, Dept. of Computer Science & Engineering, PESCE					
Research Area	Image Processing, Pattern Recognition, Natural Language Processing, Machine Translation, Artificial Intelligence and Expert Systems, Document Image Analysis and Recognition, Data Mining and warehousing and Big Data Analytics.					
Contact no	+91 9141113030					
Email ID	padmapes@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University			Year	
Ph.D.	Malnad College of Engineering, Hassan.	VTU, Belgaum			2010	
M.sc.Tech	Manasagangotri, mysore	University of Mysore, Mysore			2004	
B.E.	PESCE, Mandya	University of Mysore, Mysore			1990	
<b>Professional Experience</b>						
Organization & dept.		Designation			Period	
PES College of Engineering		Lecturer			1992-2002	
		Assistant Professor			2002-2010	
		Professor and Head			2010-till date	
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	02		05		27	26
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	
VGST	Establishing the Internet of Things (IoT) Laboratory for Post Graduate and Research programs			20 Lakhs	2015	

Name	<b>Dr Jayashankar Babu B.S</b>					
Designation, Department & Affiliated Institution	Professor, Civil Engineering, P.E.S. College of Engineering, Mandya					
Research Area	Structures					
Contact no	9448106366					
Email ID	jsbabupesce@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	M.C.E, Hassan	VTU Belgaum	2015			
M.E	P.ES.C.E Mandya	University of Mysore	1984			
B.E	P.ES.C.E Mandya	University of Mysore	1985			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S.C.E, Mandya, Civil Engg.		professor	1986 to till date			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			03		12	03
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr.T.M.Prakash</b>					
Designation, Department & Affiliated Institution	Professor Civil Engineering Department. PESCE, MANDYA.					
Research Area	Structural engineering					
Contact no	9448824956					
Email ID	tmprakash.1964@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	VTU,Belgaum	VTU,Belgaum	2013			
M.Tech	IIT-Delhi	IIT-Delhi	1998			
B.E	PESCE,	University of Mysore	1986			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
Dept of civil engg, PESCE		Lecturer	1987 to 1999			
		Senior grade	1999 to 2003			
		Selection grade	2003 to 2006			
		Professor CAS	2006 to till date			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			02		03	04
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr N L Murali Krishna</b>					
Designation, Department & Affiliated Institution	Associate Professor I&P Engg., PESCE, Mandya.					
Research Area/Area of Specialisation	Micro finishing					
Contact no	9844009400					
Email ID	muralipesce@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph D	PESCE, Mandya	VTU	2016			
M.Tech	IIT Delhi	IIT	2000			
BE	PESCE Mandya	Mysore	1990			
<b>Professional Experience</b>						
Organization & Dept.	Designation		Period			
PESCE, Mandya Dept. of I&P	Associate Professor		2006 to Till date			
	Lecturer		1994 to 2006			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					06	12
<b>Sponsored Research</b>						
Funding Agency	Project Title			Amount(Rs.)	Period	

Name	<b>Dr. R. Girisha</b>					
Designation, Department & Affiliated Institution	Professor, Dept. of C.S. & E., PESCE, Mandya					
Research Area	Computer Vision					
Contact no	9945212969					
Email ID	write2girisha@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	Mysore University	Mysore University	2010			
M.Sc.Tech	Mysore University	Mysore University	2003			
B.E.	SJCE, Mysore.	Mysore University	1999			
Diploma	Banumaiah Polytechnic, Mysore.	Technical Board Bangalore	1994			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
ECIL, Hyderabad	Supervisor		1994 – 1995			
VVIET, Mysore	Lecturer		1999 –2000			
PESCE, Mandya	Lecturer		2000 – 2005			
PESCE, Mandya	Assistant Professor		2005 to 2010			
PESCE, Mandya	Professor		2010 to Till date			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			02	01	04	17
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		
DRDO	Video segmentation for vision based surveillance with MICAVs for situation awareness and activity tracking		3.74 Lakhs	2009		

Name	<b>Dr.Minavathi</b>					
Designation, Department & Affiliated Institution	Prof and Head, IS&E Dept PESCE, Mandya					
Research Area	Medical Image Processing					
Contact no	9845302882					
Email ID	minavati@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya	Mysore	2014			
MS	BITS,PILANI	BITS	1995			
BE	PESCE, Mandya	Mysore	1990			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Professor & Head	1995 till date			
BIT, Bangalore		Lecturer	1991-94			
AIT, Chikkamagalore		Lecturer	1990-91			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			05		11	09
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	
VGST		Setting up of network Forensic lab.		20 Lakhs	2016-17	

Name	<b>Dr. Nagarathna</b>					
Designation, Department & Affiliated Institution	Professor, Department of Computer Science & Engineering, P.E.S College of Engineering, Mandya					
Research Area	Wireless Sensor Network					
Contact no	+91 9481210125					
Email ID	nagu_cjg@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	Anna University, Chennai	Anna University, Chennai	2016			
M.Tech	PESCE, Mandya	VTU	2005			
B.E.	PESCE, Mandya	Mysore University	1989			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S College of Engineering		Lecturer	1996- 2005			
		Assistant Professor	2005 to 2015			
		Associate Professor	2015- 2017			
		Professor	2017 till - data			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		08	03
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. H M Nanjundaswamy</b>					
Designation, Department & Affiliated Institution	Professor I&P Engg , PESCE, Mandya.					
Research Area	Composites (MMC, PMC, Nano-Composites) Foundry					
Contact no	9481830134					
Email ID	hmnanjunda@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	IIT Roorkee	IIT Roorkee	2009			
M.Tech	NIE Mysore	Mysore Universi	1999			
BE	NIE Mysore	Mysore University	1994			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE IP		Asst. Prof.	2003 to till Date			
PESCE, Mech.		Lecturer	2002 to 2003			
Sapthagiri College Mysore		Lecturer	2004 to 2007			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
		01	06		07	03
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr.S.Ghanaraja</b>					
Designation, Department & Affiliated Institution	Professor Mechanical Engineering Department PES College of Engineering, Mandya					
Research Area	Nano-Composite					
Contact no	9449149167					
Email ID	ghanaraja08@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D.	IIT Roorkee, ROORKEE.	IIT Roorkee, ROORKEE	2011			
M.Tech	SJCE, Mysore	VTU, Belgaum Karnataka.	2000			
BE	SJCE, Mysore	MYSORE	1996			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Professor	2011 to Till Date			
PESCE, Mandya		Associate Professor	2006 to 2011			
PESCE, Mandya		Assistant Professor	2003 to 2006			
P.V.P Polytechnic, Bangalore-56		Lecturer	1996 to 2003			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			03		11	21
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. S. Gopiya Naik</b>					
Designation, Department & Affiliated Institution	Associate Professor, Dept. of EEE, PES College of Engg., Mandya					
Research Area	Power System planning					
Contact no	9481249509					
Email ID	gopiya_s@yahoo.co.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD	IIT, Roorkee	IIT	2016			
M.Tech	NIE, Mysore	University of Mysore	1999			
BE	MCE, Hassan	University of Mysore	1992			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya Electrical		Associate Professor	2006 to till date			
		Assistant Professor	2003-2006			
		Lecturer	2001-2003			
SCE, Dharmapuri		Lecturer	2000-2001			
BCET, Bangalore		Lecturer	1999-2000			
UBDTCE, Davangere		Lecturer	1994-1996			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			02		06	03
<b>Sponsored Research</b>						
Funding Agency		Project Title	Amount(Rs.)	Period		

Name	<b>Dr. Mohan Kumar H.P</b>					
Designation, Department & Affiliated Institution	Professor & HOD, Department of MCA, P.E.S. College of Engineering, Mandya.					
Research Area	Computer Vision and Pattern Recognition					
Contact no	9448554113					
Email ID	mohanhallegere@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	University of Mysore.	University of Mysore	2015			
M.Sc Tech	PET Research Centre	University of Mysore	2009			
MCA	PESCE, Mandya.	University of Mysore	1998			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
PESCE, Mandya,	Professor & HOD		2015 - till date			
PESCE, Mandya	Assistant Professor		2007 - 2015			
PESCE, Mandya,	Lecturer		2000 - 2007			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			03		10	03
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr.H. Ramachandra</b>					
Designation, Department & Affiliated Institution	Professor & Head Dept. of Chemistry PES College of Engineering, Mandya					
Research Area	Chemical Kinetics , Physical Organic Chemistry Corrosion and Nano Science					
Contact no	9448951446					
Email ID	ram63chandrah@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	Manasagangothri, Mysore	Mysore	1997			
M.Sc	Manasagangothri, Mysore	Mysore	1986			
B.Sc	Bharathi college, Bharati Nagara,	Mysore	1984			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya, Chemistry		Professor & Head	2007 to date			
PESCE, Mandya, Chemistry		Assistant Professor	2000-2007			
PESCE, Mandya, Chemistry		Sr & SL & Lecturer	1987-2000			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01				07	13
<b>Sponsored Research</b>						
Funding Agency		Project Title	Amount(Rs.)	Period		

Name	<b>Dr. Shivalinge Gowda</b>					
Designation, Department & Affiliated Institution	Professor & Head, Physics Department, PESCE, Mandya					
Research Area	Radiation Physics					
Contact no	9449679429					
Email ID	sgowdapesc@yaho.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D.	Dept. of Physics, Manasagangothri	University of Mysore, Mysore	2006			
M.Sc	Dept. of Physics, Manasagangothri	University of Mysore, Mysore	1988			
B.Sc	Bharathi college, Bharathinagara, Mandya	University of Mysore, Mysore	1985			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
Dept. of Physics, PESCE, Mandya		Professor & HOD	2008-till date			
Bharathi college, Bharathinagara (K M Doddi), Mandya		Lecturer, Sr. Lecturer, Sr. Grade Lecturer, Associate Professor	1988-2008			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					01	
<b>Sponsored Research</b>						
Funding Agency	Project Title	Amount(Rs.)	Period			

Name	<b>Dr. Puttaswamy</b>					
Designation, Department & Affiliated Institution	Professor and Head Mathematics, PESCE, Mandya.					
Research Area	Pure Mathematics (Graph Theory)					
Contact no	9449696905					
Email ID	prof.puttaswamy@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph. D.	University of Mysore	University of Mysore	2007			
M. Sc.	University of Mysore	University of Mysore	2001			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya (Maths)		Assistant Professor	2008 – date			
SS Margol College, Shahabad, Gulbarga		Lecturer	2003 to 2008			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
	01		05		22	02
<b>Sponsored Research</b>						
Funding Agency		Project Title	Amount(Rs.)	Period		

Name	<b>Dr.Giniswamy</b>					
Designation, Department & Affiliated Institution	Associate Professor, Mathematics & University of Mysore.					
Research Area	Fixed Point Theory					
Contact no	9731137875					
Email ID	gswamypes@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University		Year		
Ph.D		University of Mysore		2003		
M.Phil		Bangalore University		1996		
M.Sc		University of Mysore		1982		
<b>Professional Experience</b>						
Organization & dept.		Designation		Period		
PESCS, Mandya		Associate Professor and Head		2007 to 2018		
		Lecturer & Asst Prof.		1982 to 2018		
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.ScEngg	Ph.D	M.ScEngg	Journals	Conferences
	02		02		29	04
<b>Sponsored Research</b>						
Funding Agency		Project Title			Amount(Rs.)	Period
-		-			-	-

Name	<b>Dr. B. Shanmukha</b>					
Designation, Department & Affiliated Institution	Assistant Professor Mathematics, PESCE, Mandya.					
Research Area	Pure Mathematics					
Contact no	9845398569					
Email ID	drbsk_shan@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph. D	Central College, Bangalore.	Bangalore University, Bangalore.	2004			
M. Phil	Central College, Bangalore.	Bangalore University, Bangalore.	1993			
M. Sc.	Central College, Bangalore.	Bangalore University, Bangalore.	1992			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Assistant Professor	2010 to till date			
NCET, Devanahalli, Bengaluru		Assistant Professor	2006 to 2010			
SJCIT, Chikkaballapura.		Assistant Professor	1993 to 2006			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			02		07	
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. Veena M.N</b>					
Designation, Department & Affiliated Institution	Professor, Department of CS&E, P.E.S.College of Engineering, Mandya					
Research Area	Computer Vision and Pattern Recognition					
Contact no	9845142764					
Email ID	Veenadisha1@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	University of Mysuru,	University of Mysuru	2016			
M.Tech	University of Mysuru,	University of Mysuru	2007			
MCA	P.E.S.C.E Mandya	University of Mysuru	1998			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
P.E.S.C. E, Mandya, Department of CS&E,		CAS Professor	2017 to till date			
		Associate Professor	2016 to 2017			
P.E.S.C. E, Mandya, Department of MCA		Associate Professor	2014 to 2016			
		Assistant Professor	2009 to 2014			
		Senior Lecturer	2006 to 2009			
		Lecturer in MCA	2000 to 2006			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		04	09
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. M.L. Anitha</b>					
Designation, Department & Affiliated Institution	Professor, Department of Computer Science & Engineering, P.E.S College of Engineering, Mandya					
Research Area	Image processing					
Contact no	+91 99455 76186					
Email ID	anithamuralikrishna@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya	University of Mysore	2017			
M.Tech	PESCE, Mandya	VTU	2008 -			
B.E.	PESCE, Mandya	University of Mysore	-	1990 -		
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
P.E.S College of Engineering	Lecturer		2000 - 2009			
	Assistant professor		2009- 2015			
	Associate professor		2015- 2017			
	Professor		2017 – till date			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					06	04
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. Chandrashekar</b>					
Designation, Department & Affiliated Institution	Assistant Professor Chemistry, PES College of Engineering, Mandya					
Research Area	Chemical Kinetics, Physical Organic Chemistry, Crystallography					
Contact no	9742167662					
Email ID	chandrashekar_pes@rediffmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	Yuvaraja's College Mysore	University of Mysore	2013			
M.Sc	Manasagangothri, Mysore	University of Mysore	1997			
B.Sc	Govt. College for Boys Mandya.	University of Mysore	1995			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Assistant Professor	2008 to till date			
PESCE, Mandya		Lecturer	2000-2008			
PES Science College Mandya		Lecturer	1997-2000			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		08	11
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. T S Shashikumar</b>					
Designation, Department & Affiliated Institution	Assistant Professor, Physics Department, PESCE, Mandya					
Research Area	Radiation Physics					
Contact no	9880279750					
Email ID	shashi.mu@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D.	Dept. of Physics, Manasagangothri	University of Mysore, Mysore	2010			
M.Sc	Dept. of Physics, Manasagangothri	University of Mysore, Mysore	2004			
B.Sc	Yuvaraja's college	University of Mysore, Mysore	2002			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
Dept. of Physics, PESCE, Mandya		Assistant Professor	2014-till date			
BET Academy of Higher Education, Bharathinagara		Assistant Professor	2011-2014			
Dept. of Physics, University of Mysore, Mysore		Research Scholar	2005-2009			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					14	
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr.Somashekar.P</b>					
Designation, Department & Affiliated Institution	Professor, Department of MBA, VTU					
Research Area	Marketing & HR					
Contact no	99863 99572					
Email ID	shekarsoman@rediffmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD	SJCE	VTU	2011			
MTech	SJCE	VTU	2005			
MBA	Mysore University	Mysore University	1998			
BE	SJCE	Mysore University	1995			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
PESCE, Mandya	Professor & Head		2012 to till date			
PESIT, Bangalore	Associate Professor		2010 to 2012			
VTU, Belgavi	Special Officer		2008 to 2010			
VVIET, Mysore	Lecturer		1999 to 2008			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					05	01
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. A C Kiran Kumar</b>					
Designation, Department & Affiliated Institution	Assistant Professor PGDOMS PESCE, Mandya					
Research Area	Consumer Behaviour and Marketing Strategy					
Contact no	+91 9448643865					
Email ID	kiranac.iimb@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph. D	UoM, Mysore	Mysore	2011			
MBA	EWIT, Bangalore	VTU, Belagavi	2006			
B.Sc.	GCB, Mandya	Mysore	2003			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya - MBA		Assistant Professor	2012 to till date			
TTLCBM, Mysore - MBA		Assistant Professor	2011 to 2012			
IIMB, Bangalore - Marketing		Academic Intern	2009 to 2011			
GSSSIET, Mysore - MBA		Lecturer	2008 to 2009			
AMCE, Bangalore - MBA		Lecturer	2007 to 2008			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		03	07
<b>Sponsored Research</b>						
Funding Agency		Project Title	Amount(Rs.)	Period		

Name	<b>Dr. AlureGowda</b>					
Designation, Department & Affiliated Institution	Assistant Professor, MBA Department PES College of Engineering, Mandya.					
Research Area	Brand Management, Service Marketing					
Contact no	91- 9972802151					
Email ID	alure_gowda@yahoo.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
PhD	BIMS, UOM, Mysore	University of Mysore	2015			
MBA	BIMS, UOM, Mysore	University of Mysore	2008			
B.Sc	Bharathi College, Mandya	University of Mysore	2006			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PES College of Engineering, Mandya		Assistant Professor	2009 to till date			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		19	10
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. Vinay S</b>					
Designation, Department & Affiliated Institution	Professor, Department of Computer Science & Engineering, P.E.S College of Engineering, Mandya					
Research Area	Software Engineering, Machine Learning, Big Data					
Contact no	+91 99865 15835					
Email ID	vinaymanyana@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	MIT, Manipal	Manipal University	2015			
M.Tech	SJCE, Mysore	VTU	2006			
B.E.	PESCE, Mandya	VTU	2002			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya		Professor	2017 to till date			
PESITM, Shivamogga		Professor and Head	2012 to 2017			
NMAMIT, Nitte		Lecturer, Senior Lecturer	2002 to 2012			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			06		06	22
<b>Sponsored Research</b>						
Funding Agency	Project Title		Amount(Rs.)	Period		

Name	<b>Dr. Mahesh. K. Kaluti</b>					
Designation, Department & Affiliated Institution	Associate Professor, Department of Computer Science & Engineering, P.E.S College of Engineering, Mandya					
Research Area	Wireless Communication & Ad hoc Networks					
Contact no	+91 99249 20785, 79757 67665					
Email ID	Mahesh.rkcet@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	Faculty of Engineering and Technology	DR. K. N. Modi University	2017			
M.Tech	AMC Engineering College Bangalore	VTU, Belagavi	2010			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
Alva's Institute of Engineering and Technology		Associate Professor	2014 to 2017			
Sanjay Bhai Raj guru College of Engineering		Assistant Professor	2011 to 2014			
R.K. College of Engineering and Technology		Sr. Lecturer	2010 to 2011			
Peak-XV Networks Pvt Ltd, Bangalore		Business Development Engineer	2007 to 2008			
-						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					10	06
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. Punith Kumar M B</b>					
Designation, Department & Affiliated Institution	Associate Professor, Department of Electronics & Communication Engineering, PES College of Engineering, Mandya					
Research Area	Image Processing, Video Processing, Shot Detection, Power Electronics					
Contact no	+91 98444 82308					
Email ID	punithpes@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE	University of Mysore	2017			
M.Tech	PESCE, Mandya	VTU	2010			
B.E.	NIE, Mysore	VTU	2007			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Mandya (E&C)		Assistant Professor	2017 – till date			
BGSIT, Bellur (E&C)		Assistant Professor	2008 to 2017			
JVIT, Bidadi (E&C)		Lecturer	2007 to 2008			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					03	
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. Umesh D R</b>					
Designation, Department & Affiliated Institution	Associate Professor, Department of Computer Science & Engineering, P.E.S College of Engineering, Mandya					
Research Area	Data Mining & Big Data Analytics					
Contact no	+91 98861 60070					
Email ID	umesh.dr.pesce@gmail.com					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya.	University of Mysore	2017			
M.Tech	NIE, Mysore.	VTU	2009			
M.S	BITS, Pilani.	BITS, Pilani.	2006			
B.E.	PESCE, Mandya.	VTU	2002			
<b>Professional Experience</b>						
Organization & dept.	Designation		Period			
P.E.S College of Engineering	Lecturer		2005 – 2010			
	Senior Grade Lecturer		2010 - 2011			
	Assistant Professor		2011- 2017			
	Associate Professor		2017 to till date			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					05	02
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. Mahesh Gowda N M</b>					
Designation, Department & Affiliated Institution	Assistant Professor, Department of Electronic and Communication Engineering P.E.S College of Engineering, Mandya					
Research Area	Power Electronics and Controls					
Contact no	9886228951					
Email ID	nm_maheshg@yahoo.co.in					
<b>Academic Profile</b>						
Educational Qualification						
Course	College	University	Year			
Ph.D	PESCE, Mandya	University of Mysore,	2017			
M.Tech	NIE, Mysore	VTU, Belgaum	2004			
B.E.	U.B.D.T.C.E, Davangere	Kuvempu University	1999			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PESCE, Dept of E&C		Lecturer	2001-2002			
SKIT, Dept of E&C		Lecturer	2004-2008			
PESCE, Dept of E&C		Asst.Professor	2008 –till date			
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
					08	07
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

Name	<b>Dr. J MAHADEVA</b>					
Designation, Department & Affiliated Institution	Associate Professor of Physics PES College of Science, Arts and Commerce, Mandya-571401					
Research Area	Condensed matter Physics					
Contact no	9448872283					
Email ID	jmahadeva@ yahoo.com					
<b>Academic Profile</b>						
<b>Educational Qualification</b>						
Course	College	University	Year			
Ph. D	Department of Physics, Manasagangotri	Mysore	Feb.2002			
M. Sc	Department of Physics, Manasagangotri	Mysore	June.1988			
<b>Professional Experience</b>						
Organization & dept.		Designation	Period			
PES College of Science, Arts and Commerce, Mandya-571401		Associate Professor	15-11-2007 till date			
		Lecturer & Asst.Professor	6-9-1988 to 1-1-2004			
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	M.Sc Engg	Journals	Conferences
			01		10	10
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

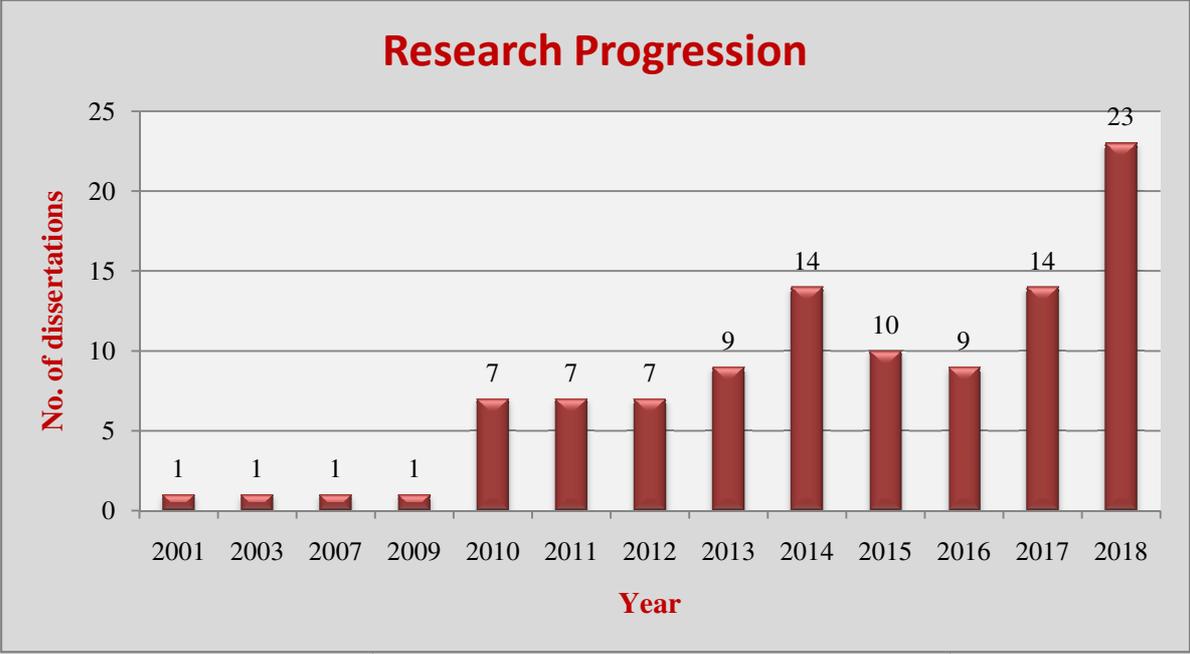
Name	<b>Dr M.Manjunatha</b>					
Designation, Department & Affiliated Institution	HOD&Co-ordinator Dept of Mathematics(UG&PG)					
Research Area	Number theory & Graph theory					
Contact no	9844558295					
Email ID	mmanjunathapes@gmail.com					
<b>Educational Qualification</b>						
Course	College	University		Year		
Ph.D		Banglore university				
<b>Professional Experience</b>						
Organization & dept.		Designation		Period		
PESCE, Mandya		Professor and Head		5 years		
		Lecturer & Asst Prof.		28years		
<b>Research Guidance</b>						
Research Guidance	Awarded		Pursuing		Publications	
	Ph.D	M.Sc Engg	Ph.D	Ph.D	Journals	Conferences
			02		07	40
<b>Sponsored Research</b>						
Funding Agency		Project Title		Amount(Rs.)	Period	

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# RESEARCH OUTCOMES

**Statistics of Ph.D/M.Sc Engg., Awarded/Pursuing**

Sl. No	Department	Ph.D		M.Sc Engg.	
		Awarded	Pursuing	Awarded	Pursuing
1	Automobile Engg	02	07	--	--
2	Civil Engg	14	25	04	--
3	Computer Science & Engg	11	14	06	01
4	Electronics & Communication Engg	22	20	02	02
5	Electrical & Electronics Engg	11	14	01	
6	Environmental Science	02			
7	Industrial & Production Engg	---	07	01	01
8	Information Science & Engg	06	07		
9	Mechanical Engg	16	32		02
10	Mathematics	08	11		
11	Chemistry	01	02		
12	Physics		01		
13	MCA		04		
14	MBA		02		
Total		93	146	14	06



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### Departmentwise Publication List

Departments	International Journals	National Journals	International Conference	National Conference	Total
Automobile Engineering	13	03	05	04	25
Civil Engineering	66	05	44	01	116
Computer Science and Engineering	81	01	43	13	138
Electronics and Communication Engineering	133	01	96	52	282
Electrical and Electronics Engineering	58	11	46	08	123
Industrial and Production Engineering	16	02	05	01	24
Information Science and Engineering	18	00	07	05	30
Mechanical Engineering	92	03	175	45	315
Master of Computer Application	39	00	06	10	55
Master of Business Administration	34	04	15	24	77
Mathematics	49	06	14	12	81
Chemistry	28	03	22	07	60
Physics	08	08	00	00	16
<b>Total</b>	<b>635</b>	<b>47</b>	<b>478</b>	<b>182</b>	<b>1342</b>

**List of sponsored projects**

<b>Sl.No.</b>	<b>Title of the Project</b>	<b>Funding Agency</b>	<b>Year</b>	<b>Amount Sanctioned in Rs.</b>	<b>Coordinator</b>
<b>1</b>	Vibration and Noise Analysis of Parallel Shaft Gear Drive Systems	AICTE	2017-20	10,00,000/-	Dr. S L Ajit Prasad
<b>2</b>	A Heuristic Approach for Design and Develop a Prototype Electronics Nose to Detect Spoilage of Milk and Bread.	VGST (SMYSR)	2016-17	5,00,000/-	M J Anand
<b>3</b>	Setting up of network Forensic lab.	VGST	2016-17	20,00,000/-	Dr. Minavathi
<b>4</b>	Establishment of Medical Image analysis laboratory	VGST	2014-15	20,00,000/-	Dr. H.S. Sheshadri
<b>5</b>	Establishing the Internet of Things (IoT) Laboratory for Post Graduate and Research programs	VGST	2015	20,00,000/-	Dr. M.C.Padma
<b>6</b>	Ground water Potential Zone Mapping Using Remote Sensing & GIS Application for Madegowda Koppalu Sub Watershed, Chandagalu Hobli, Mandya Taluk, Mandya dist	KSCST	2015-16	4,000/-	Dr. L Prasanna Kumar
<b>7</b>	Monitoring the status of the drilled hole in composite material using multi sensory approaches	DRDO, Pune	2014-17	10,00,000/-	Dr. H V Ravindra
<b>8</b>	Utilization of Remote Sensing & GIS for mapping of Natural Resources – on Water Resource action plan for Ramanagaram tq Micro water Shed, Ramanagaram dist.	Ministry of Earth Sciences, New Delhi	2014	15,95,120/-	Dr. L Prasanna Kumar

9	Monitoring of electrode in WEDM machining using Multi – sensory approaches	UGC	2013	6,30,000/-	Dr. H V Ravindra
10	Machine tool condition monitoring using Machine vision	VTU	2012-15	6,35,000/-	Dr. H V Ravindra
11	Establishing High Voltage Insulation laboratory	DIC, Govt. of Karnataka.	2012- 14	50,00,000/-	Dr. B Ramachandra
12	Fabrication of billets using powder mixture to be used in stir casting process	VGST – TRIP	2012-13	40,000/-	Dr. S L Ajit Prasad
13	Utilization of Remote sensing and GIS for Mapping of Natural resource –On water Resource Action plan for Melukote Micro-Watershed Mandya District	KSCST	2012-13	5,000/-	Dr. L Prasanna Kumar
14	Ultrathin cement concrete overlays for flexible pavements	AICTE	2012-13	13,00,000/-	Dr. S P Mahendra
15	Established Mandya District Bio fuel Information & Demonstration Centre @ PES College of Engg, Mandya	Karnataka State Bio fuel Development Board,.	2012	50,00,000/-	Dr. L Prasanna Kumar
16	Artificial Ground Water Recharge in Madave Gowdana Koppalu, Mandya dist. Karnataka by using Remote Sensing & GIS Techniques	VTU	2012	7,20,000/-	Dr. L. Prasanna Kumar
17	Infrastructure Strengthening in Science and Technology in Higher Educational Institutions – (K-FIST) – Level – 1 (Karnataka Fund)	VGST	2010-12	20,00,000/-	Dr. V Sridhar
18	Optimisation of process parameters and monitoring the electrode in WEDM	AICTE	2010-12	7,00,000/-	Dr. H V Ravindra

19	Utilization of recycled polyethylene terephthalate	VTU	2010-11	6,10,000/-	Dr. S P Mahendra
20	Road traffic impact on urban Air Quality	UGC	2010-11	4,00,000/-	Dr. S P Mahendra
21	Video segmentation for vision based surveillance with MICAVs for situation awareness and activity tracking.	DRDO	2009	3,74,000/-	Dr. R Girisha
22	Impact assessment of ambient traffic Noise Pollution	AICTE	2009-10	3,00,000/-	Dr. S P Mahendra
23	Assessment and a role of precipitation on groundwater quality	VTU	2008-11	16,54,000/-	Dr. G P Shivashankara
24	Image Processing Technique for Automated Inspection and Flow Visualization	UGC	2007-09	6,96,600/-	Dr H.V, Ravindra
25	Tribological Study of Metal Matrix composite Materials	AICTE	2007	8,00,000/-	Dr. S.L. Ajit Prasad
26	Micro Finishing of internal primitives through Extrusion Honing Process	AICTE	2007	11,00,000/-	Dr H.P. Raju & Dr. C. J. Gangadharagowda
27	Experimental investigation of the surface roughness effects on the journal bearings performance	AICTE	2007	7,50,000/-	Dr. T. Nagaraju
28	Acquisition & Characterization of EMG Signal for Human Machine Interface	S & T Project Mission	2007-09	12,91,000/-	Dr. V Sridhar
29	Air quality deterioration due to vehicular pollution	AICTE	2006-08	5,00,000/-	Dr. S P Mahendra

30	Industry institute Partnership Cell	AICTE	2006-07	1,00,000/-	Dr H.V, Ravindra
31	Modernization of Egomaniacs Lab	AICTE	2006	8,00,000/-	Dr. Narasimhachar. K N
32	Improvement of post Graduate teaching facilities	DST	2005-07	20,00,000/-	Dr H.V, Ravindra
33	Telemedicine on 3G Mobile (RPS)	AICTE	2004-06	9,15,000/-	Dr. V Sridhar
34	Condition Monitoring of the Machine tools	UGC	2002-05	6,60,000/-	Dr H.V, Ravindra
35	Industry Institute Partnership Cell	AICTE	2002-04	8,00,000/-	Dr H.V, Ravindra
36	Modeling and assessment of Traffic on Air Pollution in Bangalore Urban area	AICTE	2002-04	6,00,000/-	Dr. S P Mahendra
37	Urban and rural bulk precipitation chemistry network	AICET	2002-03	8,40,000/-	Dr. G P Shivashankara
38	Development modern Industrial drives laboratory	AICET	2001-02	8,00,000/-	Dr. B Ramachandra
39	Modeling and Assessment of Impact of traffic on Air Pollution in Bangalore, urban area	AICET	2000-02	6,00,000/-	Dr. G P Shivashankara
40	Condition Based Maintenance in sugar Industries	AICTE	2000-01	3,64,000/-	Dr H.V, Ravindra

