P E S COLLEGE of Engineering

Mandya—571 401, Karnataka

(An Autonomous Institution affiliated to VTU, Belagavi)
Grant in Aid Institution (Govt. of Karnataka),
Accredited by NBA (six Programmes) & Accredited by NAAC
Approved by AICTE, New Delhi

TEQIP-3
Technical Education Quality Improvement Programme

Chairman-BoG: **Dr. Ramalingaiah,**   Former Principal: **Dr. V. Sridhar,**   Principal & Director **Dr. H V Ravindra**

TEQIP Coordinator & Editor: **Prof. B Dinesh Prabhu**

TEQIP-NEWS LETTER

Vission And Mission

Foreword

Vision:
"P.E.S.C.E. shall be 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 societal needs.
- To promote research, product development and industry-institution interaction.
- Highly committed to provide quality, concurrent technical education and continuously strive to meet expectations of stake holders.

- The Project, Third phase of Technical Education Quality Improvement Programme (referred to as TEQIP-III) is fully integrated with the Twelfth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions to improve their policy, academic and management practices.

Project Objectives:
- Improving quality and equity in engineering institutions in focus states
- System-level initiatives to strengthen sector governance and performance which include widening the scope of Affiliating Technical Universities (ATUs) to improve their policy, academic and management practices towards affiliated institutions, and
- Twinning Arrangements to Build Capacity and Improve Performance of institutions and ATUs participating in focus
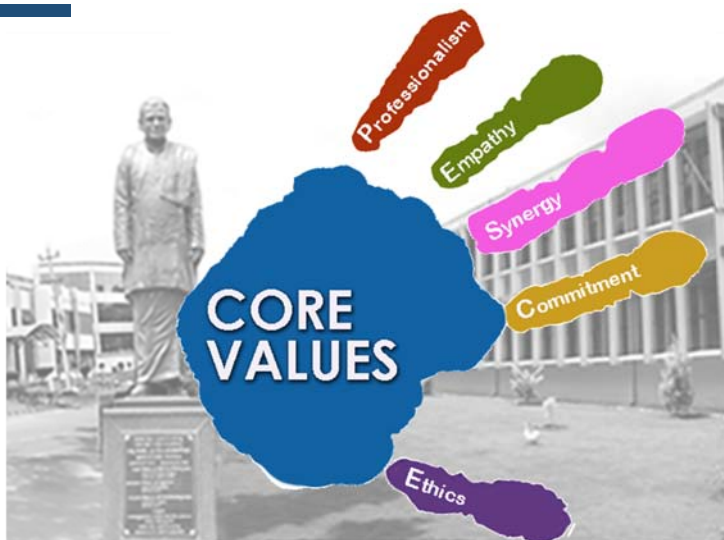
Project Scope:
- Only the Government and Government aided AICTE approved engineering institutions / Engineering faculty/ Engineering Teaching Department/ Constituent Institutions of Universities / Deemed to be Universities and new centrally funded institutions in SCS will be the part of the project.
- An estimated 200 Government and Government funded engineering institutions, including Affiliating Technical Universities (ATUs), selected under different sub-components in one or two cycles.

Project Strategy:
- The project is implemented in alignment with the 12th Five Year Plan (2012- 17), based on faster, sustainable, and inclusive growth.

Project Design:
- TEQIP seeks to enhance quality and equity in participating engineering education institutions and improve the efficiency of the engineering education system in focus states.

CORE VALUES
Professionalism
Empathy
Synergy
Commitment
Ethics

1. TEQIP-III Assignments

The TEQIP Team and Institution Academic Team members were assigned specific tasks related to the development of the Institution supported by TEQIP-3. This task may be a MoU with other elated institution or TEQIP-III assignments or related to Twinning programme that shall be carried out under project for better execution of the TEQIP-3.

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Type of Academic Activity	**Academic Visit to PESIT MSME Office**
Details of Academic Activity	Meeting on Setting up Business Incubator
Faculty / Staff	• Dr. Vinay S Asst. Professor CS& Engineering • Mr. Shivashankar Asst. Professor CS& Engineering
Date & Place	23rd March 2018, MSME Office, Bangalore

1.1. **"Meeting on Setting up Business Incubator"** held on March 23rd 2018 at MSME Office, Bangalore and PESIT, Bangalore.
Dr. Vinay S and Mr. Shivashankar S K participated.
Following observations made:
Steps need to set up the Business Incubator at PESCE, Mandya:

- Complete the formality of signing the agreement with MSME, Delhi.
- Constitute Local Selection Committee (LSC) to select innovative ideas for approval.

Selection committee will comprise:

- o Director, MSME-DI, Bangalore
- o Principal
- o Director of Apex Scientific / Industrial Research institute
- o Representative of lead bank in the area of Incubation center
- o Incubation Executive / Coordinator nominated by the host institute (Member Convener)
- o Special invitees: O/o of DC (MSME), Local expert technical organization
- The LSC must be approved by BoG of the host institution
- Request letter and acceptance of LSC members must be maintained
- Need to identify dedicated space for setting up of BI
- Need to open bank account for the BI
- Invite ideas from students across nearby engineering colleges
- Invite ideas from local MSME
- Schedule a LSC to finalize the ideas which can be sent to MSME, Delhi

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1.2. NPIU organized "one-day workshop on Management Information System" at Mumbai for the institutions identified by NPIU in collaboration with Software Company.
In the First session, discussed about MIS. Technical Education Quality Improvement Programme (TEQIP) is equipped with Management Information Systems (MIS). This MIS contains several reports on TEQIP. NPIU MIS (Management Information System) is a web-based application meant for meeting the monitoring and evaluation requirement of the project. The System will track implementation of

Type of Academic Activity	**workshop on Management Information System**
Details of Academic Activity	TEQIP-III- Management Information System
Faculty / Staff	Girish Babu M C Academic Nodal officer Asst. Professor, CS& Engineering
Date & Place	27th June 2018, VJIT Mumbai

key project inputs, outputs, outcomes and impact corresponding to project activities through performance indicators developed for the project.
This System is accessible to all the relevant institutions as identified by NPIU. The key indicators monitored at State and National level.
In second session, some hands-on work carried out by entering few sample data of our institution, finally how to generate reports.

2. Twinning Programme activities

A good Mentor, in Twinning Arrangements, is a 'critical friend' to an institution. Someone who is committed to supporting both the needs of those institutions to which they have been assigned, as well as the needs of the TEQIP project overall. Mentors are principal project representatives and 'agents of change' who keep up to date with initiatives and developments related to the institution and the project as a whole. Mentors listen, understand, guide and advice - principally to support and assist institutions to stay focused on the goals and targets set by the institution in their Institutional Development Proposal and any institution strategic plan.

A good Mentor feeds back and explains to institutions what they find (good and bad practices) and bases their feedback on sound evidence. A good Mentor tries to leave an institution better than they found it. Some of the suggested activities under the scope of the project are, Improvement in Teaching, Learning and Research competence, Improve student learning, Student employability, Increasing faculty productivity and motivation. In total, establishing a twinning system between Mentor and Mentee Institutes for overall academic interaction between the institutions.

Few Aspects under twinning programme shall include, Implementation of curricular reforms, Exercise academic, administrative, financial and managerial autonomies and accountabilities, Improve student performance and evaluation, obtaining accreditation of eligible undergraduate and postgraduate programmes.

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2.1. "Advanced Mechanical Engineering lab" conducted for 4th semester mechanical engineering students of Umanath Singh Institute of Engineering and Technology, Jaunpur, U.P from 25/06/2018 to 30/06/2018.

The aim of this training program is to provide a comprehensive theoretical information about recent trends in mechanical engineering and to provide hands on training on latest instruments used in Surface roughness measurement, Fatigue measurement, Vibration testing besides Solid modeling, Machine Vision and CNC machine.

Details of Academic Activity	Work shop on Advanced Mechanical Engineering Lab
Type of Academic Activity	Training Programme
Department	Department of Mechanical Engineering
Date & Place	25th to 30th June 2018, PESCE Mandya, Karnataka

Outcome of Training Program: Students were able to explain experimental procedure of Surface roughness measuring instrument, experimental procedure of Fatigue measuring instrument, experimental procedure of Vibration measuring instrument, Create solid models using Solid edge software and Explain working principle of CNC machine.

First session Gurupavan H R, Asst. Professor delivered lecture on fundamentals of Metrology In the session Rakshith Gowda D.S. Asst. Professor, gave a talk on basic principles of Measurements. After lunch, students were exposed to different instruments in metrology and measurement laboratory and conducted experiments. In the first session Dr. Ajit Prasad.S.L, Professor delivered lecture on Introduction to Fatigue. Followed by Chethan Y.D. Asst. Professor, MIT, Mysore discussed on basic principles of Machine Vision. In next session students were introduced to fatigue measurement and machine vision laboratory. A lecture on Surface roughness was delivered by Dr. H P Raju, Professor and Dr. N.L. Murali Krishna, Professor, gave a talk on Advanced Metrology. In the first session Channegowda M S. Asst. Professor delivered lecture on IC engines and its performance. In the Ranjith K. Asst. Professor, gave a talk on fundamentals of vibration. After lunch students conducted experiments in automobile, engineering lab and they also conducted experimezts in vibration lab. In the afternoon session students conducted experiments on Surface roughness measuring instrument and various instruments in Advanced Metrology Lab. session Prof Devadath V R introduced solid modeling followed by introduction to CNC in the Students gave feedback in the afternoon session before valedictory function. Certificates were distributed to students by Co-ordinator Dr.N.L.MuraliKrishna, Professor, I & P Engineering Department

Details of Academic Activity	**Python Programming**
Type of Academic Activity	Training Programme
Department	Department of Computer Science Engineering
Date & Place	25th to 30th June 2018, PESCE Mandya, Karnataka

2.2. "Python Programming" held on 25th to 30th June 2018 at PESCE Mandya, Karnataka. The goal of this course is to provide an introduction to Python. The course will discuss topics necessary for the participant to be able to create and execute Python programs.
Prerequisites: Experience with a high-level language (C/C++/Java) is suggested.
Outcomes of the Workshop: Problem solving and programming capability enhancement in the following areas:

- To understand why Python is a useful scripting language for developers.
- To learn how to design and program Python applications.
- To learn how to use lists, tuples, and dictionaries in Python programs.
- To learn how to identify Python object types.
- To define the structure and components of a Python program.
- To learn how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to read and write files in Python.
- To learn how to design object-oriented programs with Python classes.
- To learn how to use class inheritance in Python for reusability.
- To learn how to use exception handling in Python applications for error handling.

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2.3. "Hardware Design with CADENS Tools" held on 2nd to 7th July 2018, at PESCE Mandya, Karnataka.

- Creating interest in Electronics
- Exposing students to EDA Tools LTSpice and KiCAD
- Understanding circuit operation through simulation tools
- Making students capable of designing simple Electronic Circuits (both analog and digital) using discrete components and IC's
- Preparing students for technical interview of core companies in Electronics

Details of Academic Activity	**Hardware Design with CADENS Tools**
Type of Academic Activity	Training Programme
Department	Electronics & Communication Engg
Date & Place	2nd to 7th July 2018, PESCE Mandya, Karnataka

Execution summary:
The workshop was one among the initiative taken by the Electronics department of PESCE, Mandya as part of twining program under TEQIP-3. In which the students of UNSIET, Varanasi were invited to join a second joint workshop conducted by PESCE, Mandya for students of both institutes. This workshop was provided to 5th sem B.E students for duration of 6days spread over 36hr time. The workshop basically aimed at providing working exposure to the popular EDA tool used in analog and digital circuit design and also they were able to follow the steps/principle involved in PCB design flow. In particular students were made to work on EDA tool and design simple to complex circuits, simulate it by using simulator and verify the corresponding with their theoretical calculation. After initial class room session students spent most of the time working with tool and also We have visited two industries in order to understand the PCBA steps flow. At the end of the workshop students developed good amount of confidence in different components usage to design a system.

Details of Academic Activity	**IoT Based Electrical Technology**
Type of Academic Activity	Twinning Programme
Department	Electrical & Electronics Engg
Date & Place	2nd July to 7th July 2018, PESCE Mandya, Karnataka

2.4. A one week faculty development programme on **"IoT based Electrical Technology"** at the Department of Electrical & Electronics Engineering of PES College OF Engineering, Mandya, from 2nd July to 07th July 2018.

The workshop aims to provide opportunities to students of UMA Nath Singh Institute OF Engineering & Technology, Uttar Pradesh and to our college student to enrich their learning skill in the field of MATLAB, SIMULINK, LabView, IoT & embedded system. The Programme also intends to develop the knowledge of participants for simulation with MATLAB & AMP; lab view software's in the relevant field for power systems and electrical circuit simulations. The workshop attended by 24 students from UMA Nath Singh Institute of Engineering & Technology, Uttar Pradesh & 24 students from host Department.

ABOUT VIRTUAL INSTRUMENTATION

Virtual Instrumentation has revolutionized the instrumentation field by bringing in immense customizing abilities to the engineer, thereby driving down his costs and time consumption. Lab VIEW from National Instruments & MATLAB-SIMULINK were always remained a forerunner in this field. Lab VIEW is a graphical programming environment used to develop complex measurement, test, and control systems using graphical icons and wires that resemble a flowchart. It offers unparalleled integration with numerous hardware devices and provides a large number of built-in libraries for advanced analysis and data visualization – all for creating virtual instrumentation. Realizing the potential of LabVIEW, with its experience across multiple domains like marine, oil & gas and industrial automation, training is focused on creating awareness on it, among the young engineers. This indeed is great news for all students, as it will help them take the plunge in to

the domain, taking them right through to the midst of the most happening industry.

OUTCOME: All the sessions were very much informative. The discussed areas are of great benefit for the participants as the topics match with the current working domain. Participants were enlightened with the most widely used advance technologies in this domain. This in turn will help in research activity and placement opportunity.

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Details of Academic Activity	**Performance Audit, Mentor Audit and Procurement Activities of TEQIP-III**
Type of Academic Activity	Twinning Programme
Department	TEQIP Cell
Date & Place	29th to 30th June 2018, PESCE Mandya, Karnataka

Prof. B Dinesh Prabhu, TEQIP Coordinator, Dr. N L Murali Krishna, Nodal Officer-Procurement, Dr. D R Umesh, Deputy Dean (Academic), K Ravi, Asst. Nodal Officer-Procurement and Mr. Mahesha M S, Programmer, discussed various activities to be organized at both institutes. A dialed programme schedule was prepared and finalized. Discussions about Performance Audit, Mentor Audit and Procurement Activities of TEQIP-III was carried out in length.

2.5. "Performance Audit, Mentor Audit and Procurement Activities of TEQIP-III" held on 29th to 30th June 2018, PESCE Mandya.

Prof. B.B Tiwari TEQIP co-ordinator Junpur, up with procurement officer Prof. Sanjeev Bhaskar visited our college discuss the academic and procurement activities for three quarters.

Dr. H V Ravindra Principal & TEQIP Director,

3. Training Programme Workshop, STTP, FDP……

The Professional Skills and Technical Training Program is responsible for the design, development, and delivery of competency-based courses to meet critical skill development needs. In addition to conduction of Training Programme Workshop, STTP and FDP, the Professional Skills and Technical Training Program provide a variety of ancillary support to academic organizations. FDP cover areas such as technical education policy, new concepts, methods and techniques, theory and skills development and up gradation of pedagogy educational technology, motivation, communication skills, management and other relevant issues to keep pace with the changing scenario in Technical Education. Training Programs designed to enhance the teaching and other skills of the faculty. And to make them aware about modern teaching tools and methodologies. It provide an opportunity to acquire knowledge about current technological developments in relevant fields. It will not only promote the professional practices relevant to technical education but also motivates the faculty to achieve competitive teaching and learning environment, thus channelizing development with respect to academic qualifications and personal matters.

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3 (a) Programmes Conducted for Teaching, Technical Faculty & Students

i) Project Management

Two Days Workshop Project Management on 6th to 7th April 2018 at Department of Civil Engineering PESCE Mandya.

The construction industry is one of the largest industry in the world and the second largest industry of the country after agriculture. Construction activity is an integral part of a country's infrastructure and industrial development. Construction and Infrastructure sectors are the vital drivers for the Indian economy. The key challenge faced in the construction industry is to synchronize between cost, labour, material, plant and machinery. The optimum utilization of these basic

resources is significant in successful completion of any project in the given time. The other challenges faced in construction industry are shortage of skilled labours, stagnant productivity level, project complexity, technology adoption, maintaining safety and quality standards etc.

During recent decades the construction sector has undergone profound changes resulting, in the first instance, from attempts to respond to the rapid developments which took place in all of its domains. The main factors which gave rise to these transformations are: 1.The great technological advances and the consequent modification of construction methodologies 2. The need for higher quality imposed by current processes; 3. The emergence of more stringent customers for all types of products and services; 4. The increasing emphasis on the environmental impact due to construction; 5. Ever increasing population; In parallel to these causes, due to the emergence of globalization, many sectors operate nowadays with marginal levels of profitability, bringing about a situation where the availability of quality construction constitutes a crucial factor in the competitiveness of most economic activities.

The following are the Challenges and Risks faced in construction	Benefits of Project Management
➢ Timely availability of materials	➢ Collaborative team management
➢ Machinery shortage	➢ Reduce overall project costs
➢ Land Acquisition and Environment Clearance	➢ Optimize and accelerate the design and construction schedule.
➢ Financial Problem	➢ Centralize communication, acting as project liaison to fully and seamlessly integrate all participants
➢ Manpower Shortage	
➢ Complexity of project	➢ Enhance quality controls to reduce potential for defects and poor workmanship.
➢ Maintaining quality and safety standards	➢ Safety management
	➢ Provide realistic and reliable budgets

ii) Designing IOT Application using NODEMCU

Two days workshop on Designing Internet of Things applications using NODEMCU was organized at department of Computer science and Engineering, PESCE Madnya on 6th and 7th of April 2018. The workshop was carried out in four session, first session form 9.30 to 11am, second one 11.15 to 12.45 pm, third one 1.45 pm to 3.13 pm and fourth 3.30 pm to 5 pm on both the days.

The workshop was started by welcoming the Resource persons Sampriti Neog and Himesh Reddivari from HRT Pvt Ltd, Bangalore. The topics covered in the first session were Introduction to IOT and Introduction to NodeMCU and Installing Tools required for the hardware. The NodeMCU (Node Micro Controller Unit) is open source software and hardware development environment that is built around a very inexpensive System-on-a-Chip (SoC) called the ESP8266. During second session, students downloaded the necessary tools and learned how to install the tools. Also hands on session on connecting LED's and Digital Sensors were conducted. Students were issued with the necessary components and all of them learned connecting LED's and Digital Sensors and demonstrated what they learned by executing code to blink of LED. After lunch during third session students learned about connecting analog sensors and activators. Analog sensors that detect changes in position, velocity, orientation, shock, vibration, and tilt by sensing motion are called as accelerometers. Analog sensors that are used for detecting the amount of light striking the sensors are called as light sensors. Students learned how to get the reading form analog sensor and how to program to read data from analog sensor. In this session, students learned how to use SIM800/SIM900 module to connect NodeMCU to Internet. Sample code was executed to configure NodeMCU as WiFi client.

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iii) Tall Building Designing

As the technology is growing very fast and to get the jobs to the civil engineering graduates, they must be trained technically with the conceptual as well as practical knowledge of softwares for the designing of buildings. Training was aimed to provide a platform for the students to compete at national as well as international levels in design of buildings using latest technology. In view of this, **two days' workshop on tall building designing using Staad-Pro software was organized on 16th & 17th of April 2018 in collaboration with ITC-IIT Mumbai under TEQIP**.

Staad-Pro. is one of the demanded software which is impacting the present day lifestyle and made the job very easy? It is one of the advanced tools used by civil engineers for structural analysis and the design in the construction and building industry. The training provided for the students will meet the expectations of the industry. Further this workshop effectively helped in shaping the career of the students as they are technically more confident and it acts as a real booster for their career.

The students have learnt about
1. Introduction to STAAD Pro. Software
2. Designing and analysis of beams
3. Method of analysis
4. Geometry of section
5. Input method in STAAD Pro.
6. Design and analysis of 2D multi story frame
7. Design and analysis of 3D multi story frame
8. Design and analysis of Shear wall
9. Design and analysis of tall structures.

Key benefits of the program are:
1. Students were made aware about the latest trends and most demanding technology in designing tall buildings.
2. Students were given hands on training on the usage of STAAD Pro. Software.
3. Students were made technically confident and explore themselves at college, national and international level.

iv) Applications of Lean Tools

Two Days Workshop on Applications of Lean Tools was organized at department of Industrial & Production and Engineering on 9th and 10th of May 2018.

Lean is a continuous improvement philosophy, which is Synonymous with Kaizen or the Toyota Production System. The lean management or lean manufacturing is traced back to the early years of Toyota and the development of the Toyota Production System after Japan's defeat in world war - II when the company was looking for a means to compete with the US car industry through developing and implementing a range of low-cost improvements within their business.

Lean management seeks to implement business processes that achieve high quality, safety and worker morale, whilst reducing cost and shortening lead times. This in itself is not unique to Japan. What sets lean management apart, and makes it particularly effective, is that it has at its core a laser-sharp focus on the elimination of all waste from all processes.

The topics covered in the Workshop:
1) Introduction to lean manufacturing.
2). 5S: Sort, Set in order, Shine, Standardized, Sustain.
3) Standardized work: Explain, Case study, Demonstrate, SWCT
4) Problem Solving: why - why and fishbone diagram.
5) Value Stream Mapping: case studies on Current and Future planning.
6) Lean Daily management

Objectives of Workshop: The objective of this workshop includes:
1) Understand the logic and concepts behind lean manufacturing. 2) Apply core tools of lean manufacturing in their business. 3) Adjust the techniques of lean manufacturing to their specific needs.
4) Value stream map the existing situation of their knowledge and resources flow through the chain of value. 5) Determine the sources of waste. 6) Identify the waste root causes in the value stream.
6). effectively lead the lean initiatives.

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v) Revamping Academics to Intensify the Knowledge

Five Days Faculty Development Programme on **Revamping Academicians to Intensify the Knowledge in the VUCA World was organized Organized by TEQIP – III from 26th of June to 30th of June 2018.**

In the VUCA world, where Volatility, Uncertainty, Complexity and Ambiguity prevails, academicians need to regularly update their knowledge, skills and change attitude based on new developments in their related fields. Only lifelong learning can make academicians cope with the demands and challenges of tremendous changes taking place in the education system. In doing so, academicians ideally need to reach out to experts from various industries to fill the gap for their career growth and success. The FDP was organized with the intention to meet the challenges faced by fresh & native academicians in this ever changing and competitive world, academicians need to regularly update their knowledge, skills and change attitude based on new developments in their related fields. Only lifelong learning can make academicians cope with the demands and challenges of tremendous changes taking place in the VUCA World. In doing so, academicians ideally need to reach out to experts from various industries to fill the gap for their career growth and success. This Faculty Development Program offers the ideal solution as they act as catalyst for fresh thinking, re-training, knowledge enhancement and strategic development. The FDP is designed to equip the academicians with new thinking, new techniques, new knowledge and skills, besides inculcating an innovative and creative approach to face the challenges.

vi)   Research Meet

A Research Meet was conducted on 5th July 2018 at PESCE Mandya. Interaction with research guides & research scholars was conducted in length. The scholars ware asked to accelerate the research work and the guides were asked to initiate the same. It was also mentioned to work for prime publication with good Scopus or H-index etc. type of quality. It was mentioned to carryout quality research and produce quality research papers and publications.

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vii)   Progress made in Autonomous and NAAC

Education plays a vital role in the development of any nation. Therefore, there is a premium on both quantity (increased access) and quality (relevance and excellence of academic programmes offered) of higher education. The NAAC has been set up to facilitate the volunteering institutions to assess their performance with a set of parameters through introspection and a process that provides space for participation of the institution.

In view of benefits **to the institute as well as students,** our college has applied for NAAC assessment and Accreditation process by applying Self Study Report (SSR) of our College on January 2018 and assessed by NAAC Peer Team on 11th and 12th June 2018. The peer comprised with Chair Person Dr. Sandeep Sancheti, member coordinator Dr. Sujit K Biswas and member Dr. Vedulla Shekar. All the three members were highly experienced and knowledgeable about the accreditation process of NAAC. The team member were thoroughly checked all the documents and inspected the campus according to the details provided. Finally, on 16th August 2018, our college was awarded B++ grade with CGPA of 2.99.

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viii)   Vehicle Diagnosis

One day Workshop On "Vehicle Diagnosis" was carried out in Automobile department On 08th Sep 2018 for Automobile, Industrial production and Mechanical Engineering Students. The main objective was to make student aware about how various activities, related to Vehicle diagnosis for four wheelers are carried out in manufacturing as well as service sectors, were discussed are carried out.

OBJECTIVES:

- Students will learn about different Electronic control units fitted in modern cars
- Students will learn about complexity involved in modern vehicle repair
- Students will learn what is vehicle diagnosis and what tools could be used
- Student will get live demo on Bosch Diagnostic scanner
- Today's session will help them understand how technological shift is happening in auto industry and how companies are developing new equipment's to repair these modern systems

Outcomes & OBD applications:

The following topics discussed in length through presentation and hands on training various tools are available that plug into the OBD connector to access OBD functions. These range from simple generic consumer level tools to highly sophisticated OEM dealership tools to vehicle telematic devices

Hand-held scan tools: A range of rugged hand-held scan tools is available.

- Simple fault code readers/reset tools mostly aimed at the consumer level.
- Professional hand-held scan tools may possess more advanced functions
- Access more advanced diagnostics
- Set manufacturer- or vehicle-specific ECU parameters
- Access and control other control units, such as air bag or ABS
- Real-time monitoring or graphing of engine parameters to facilitate diagnosis or tuning

ix) Infrastructure requirement for engine & vehicle testing basis & legislation requirements

Technical Talk On **"Infrastructure requirement for engine & vehicle testing basis & legislation requirements"** was carried out in Automobile department On 19th Sep 2018 for Automobile, Industrial production and Mechanical Engineering Students. The main objective was to make student aware about Infrastructure requirement for engine & vehicle testing basis & legislation requirements, related to Automobile Engineering Laboratory

OBJECTIVES:

- Participants will learn about different Engine Set ups
- Participants s will learn about complexity involved in modern Engine Testing
- Participants will learn tools that could be used on Engine testing setups
- Participants will get live demo about Engine testing Setups
- Today's session will help them understand how technological shift is happening in auto industry and how companies are developing new equipment to repair these modern systems

Outcomes: Importance of engine testing

- To find out performance before mass production and fitting it into a vehicle.
- To improve the design and configuration, to integrate new materials and technology
- Historically, the test was to find out the power and fuel consumption, also to test effectiveness of cooling, vibration and noise, lubrication, controllability, etc.
- Modern regulations force engines to reduce harmful emission and comply stringent regulations, therefore, test is getting more and more sophisticated

Noise/Vibration/Emission: one aspect, a system for reducing noise or vibration generated by an internal combustion engine described. An engine controller arranged to generate firing information suitable for operating the working chambers of the engine in a skip fire manner to deliver a desired amount of torque. A noise/vibration reduction unit I arranged to help reduce noise or vibration based on the firing information. The noise/vibration controller actively controls a device that is not a part of the engine to alter an NVH characteristic of the vehicle in a desired manner based at least in part on a skip fire characteristic. An emission performance standard is a limit that sets thresholds above which a different type of emission control technology needed. While emission performance standards have been used to dictate limits for conventional pollutants such as oxides of nitrogen and oxides of sulphur (NOx and SOx),this regulatory technique may be used to regulate greenhouse gasses, particularly carbon dioxide (CO_2). In the US, this is given in pounds of carbon dioxide per megawatt-hour (lbs. CO_2/MWhr), and kilograms CO_2/MWhr elsewhere.

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3 (b) Programmes Participated by Teaching and Technical Faculty

Teaching and Technical Faculty have one of the most demanding vocations in the world and in order to fulfill their important roles with excellence, they need training, motivation as well as regular mental, emotional and spiritual rejuvenation. That educational systems the world over recognize the importance of the faculty is often evident by the resources spent on their capacity building. However, the issues often have been about building an effective model and mechanism that would develop and enhance the faculties' capacity and provide them avenues for professional development. In view of this, faculties are encouraged and supported to undergo training Programmes to enhance their knowledge in academics and allied areas.

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Details of Academic Activity	Lean Innovation
Type of Academic Activity	Workshop
Faculty / Staff	Sachin N K Asso. Professor I&P Engineering
Date & Place	16 to 17 April -2018, NIE, Mysore

1) I am very happy to mention that, I have an opportunity to attend the workshop on **"LEAN INNOVATION" on 16th & 17th April 2018** at NIE Mysuru.

The programme was sponsored by TEQIP phase-III. In the workshop, experts interacted on Lean concept, principle & value vs waste. Also done the activates on Lean Tools and Techniques with Industrial applications such as 5S & Visual Controls, Kaizen, Root Cause Analysis, Value Streams, Pull Manufacturing, Mistake Proofing, Quick Changeover, Theory of Constraints and Human Factors. It was an opportunity to me not only to attend the workshop, but also it created a platform to interact with the experts and administrators of various college.

Details of Academic Activity	FDP for Students induction program
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. Shivalingegowda Professor & HOD Physics • Dr. Umesh D R Asst. Professor CS & Engineering
Date & Place	18th to 19th May 2018, Sahydri College of Engg & Management, Mangalore

2) Two Days Workshop on **"FDP for Students induction program"** at 18 to 19 May 2018, Sahydri College of Engineering & Management, Mangalore Engineering institutions.

Were set up to generate well trained manpower in engineering with a feeling of responsibility towards oneself, one's family, and society. The incoming undergraduate students are driven by their parents and society to join engineering without understanding their own interests and talents. As a result, most students fail to link up with the goals of their own institution. The graduating student must have values as a human being, and knowledge and meta-skills related to his/her profession as an engineer and as a citizen. Most students, who get demotivated to study engineering or their branch, also lose interest in learning.

The Induction Program is designed to make the newly joined students feel comfortable, sensitize them towards exploring their academic interests and activities, reducing competition and making them work for excellence, promote bonding within them, build relations between teachers and students, give a broader view of life, and building of character.

The Universal Human Values component, which acts as an anchor, develops awareness and sensitivity, feeling of equality, compassion and oneness, draw attention to society and nature, and character to follow through. It also makes them react on their relationship with their families and extended family in the college (with hostel staff and others). It also connects students with each other and with teachers so that they can share any difficulty they might be facing and seek help. Further, to involve other faculty of the institution and provide training for them, the AICTE is planning to conduct 7-day FDP in the month of July, 2018.

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3) The VTU has arranged one day workshop on **"new model curriculum for first year BE/B. Tech Choice based credit system detailed syllabus (2018-2019) as per outcome based education (OBE) format including course outcomes (CO) and Blooms taxonomy"** under TEQIP-3 to discuss the structure of contents and formulation of syllabus.

The Inauguration of the workshop done by Mangalore University Vice-Chancellor Dr. Byrappa along with other dignitaries Mr. Manjunatha Bhandary, President Bhandary foundation, Dr. D L Prabhakara, Director, Dr. U M Bhushi, Principal, Sahyadri College of Engineering & Management, Mangalore.

During the Inauguration function Dr. Byrappa has insisted to develop the curriculum in such way to give more importance on the requirement of

Details of Academic Activity	First Year UG Syllabus Discussion (CBCS along with OBE)
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. Puttaswamy. P S Professor & HOD EE & Engineering • Dr. Shivalingegowda Professor & HOD Physics • Dr. Chandrashekar Professor Department of chemistry • Dr. B Shanmukha Professor Department of Mathematics
Date & Place	18th to 19th May 2018, Sahydri College of Engg & Management, Mangalore

industries rather than traditional courses.

In the afternoon sessions, there were deliberations on all individual first/second semester courses. During the deliberations, various faculty members of different colleges interacted with the BoS Members of VTU. After the discussions many faculties have expressed the inability to complete the three credit course syllabus within the stipulated period & requested BoS Members to reduce the content as per as possible. One of the VTU observer had visited and involved in the deliberations.

Details of Academic Activity	Research Methodology and using of advanced statistical tools
Type of Academic Activity	Workshop
Faculty / Staff	Pooja Nagpal Asst. Professor MBA
Date & Place	21st to 30th May 2018, Primax Foundation, Bangalore

4) One week Workshop on **"Research Methodology and using of advanced statistical tools"** at 21 to 30 May 2018, Primax Foundation, Bangalore.

This day started with inauguration followed by statistical analysis using SPSS organizing the data, determine the sample size, procedure for testing hypothesis, understanding parametric and non-parametric test, descriptive analysis, ANOVA was thought. The hands on session was on statistical techniques on univariate and bivariate analysis using secondary data, Chi-square test for goodness of fit, Correlation analysis, non-parametric analysis and multivariate analysis.

The study started with explanation on Structural Equation Model (SEM) using Amos followed by confirmatory factor analysis (CFA) using Amos based on one factor, confirmatory factor analysis (CFA) using amos based on multi factor.

These three days were hands on session handle by Dr. Ravanan on primary data using SPSS and Amos. started by Dr. Vinod on how to use "R" software to understand mathematical arguments, vectors, data frames, creating commands, charts , bars and scatter diagram using R. Hypothesis testing in R, One Sample t test, Paired Sample t test, Independent Sample t test, One Way ANOVA, Chi-Square test.

The resource person was Dr. P. Murugan; the topic for the day was the role of theory in Mediational Hypothesis Specification, testing the mediational hypothesis using Baron and Kenny approach. Session was by Dr. Thenmozhi on introduction to Econometrics using E-views. She focused on Econometric Model- Application of data files in E Views- Introduction to Time Series Analysis – Testing for Unit Roots, Univariate model – ARIMA and developing forecasts using Eviews.

This session was continuation of E-Views along with Gretl software, by Dr. Mohanasundaram, he thought Multiple regression with Gretl, Model adequacy tests – ARCH effect, Estimation of elasticity measure, etc. session was by Dr. Kumaresean on Thesis Writing, publication in journals, getting projects from agencies and to conclude on how to use advanced excel in analyzing the data. This day concluded by Valedictory and Certificates Distribution. Last two were allotted for sightseeing to the places like Iskcon Temple & Mysore Sandal Industry, Orion mall, Shiva Temple and conclude with educational visit.

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5) **Capacity Building workshop for women managers in higher education** held on 4 to 8 June 2018, SJCE Mysore.

The focus of the workshop is to motivate women academicians to rise to decision-making positions in the higher education system, to become sensitive to the situations of women in the system and the factors that have limited their presence in leadership role. The Main themes of the workshop are given below.

- Women studies perspective
- Women and academic leadership
- Women and governance
- managing personal and professional role
- Women and research

Details of Academic Activity	Capacity Building workshop for women managers in higher education - Sensitivity /Awareness/Motivation.
Type of Academic Activity	5 Days Workshop
Faculty / Staff	• Dr. M C Padma Professor & HOD CS & Engineering • Dr. Nagarathna Professor CS & Engg
Date & Place	4th to 8th June 2018, SJCE Mysore

Besides the above, a few special topics related to women were also delivered in the open sessions. The topics on which the lectures delivered are as follows.

- Ice Breaking, Expectations from the Workshop and Group Formation by Prof. ReichaTanwar
- Women's Studies Perspective by Prof. Susheela Kaushik
- Women's Studies as a Catalyst - Why women in Management of Higher Education by Prof. Rajesh Gill
- Public Policy and Women's Studies Impact of Women's Studies Perspective by Prof. Susheela Kaushik and Prof. Rajesh Gill
- Women and Governance in Higher Education by Prof. Usha Rani
- Understanding Power within an Organization by Prof. Ramashri
- How to operate effectively within the structure, Mentoring, Networking by :Prof. Usha Rani

Details of Academic Activity	**Digital Transformation through e-Governance**
Type of Academic Activity	Workshop
Faculty / Staff	Dr. A C Kiran Kumar Asst. professor MBA
Date & Place	18th to 22nd June 2018, Hotel Jai and Kodaikanal

6) Regarding the participation in the National Productive Council's Residential Training Programme on **"Digital Transformation through e-Governance"** held at Kodaikanal during June 18 to June 22, 2018. The macro programme schedule attached along with this report. NPC is national level organization to promote productivity culture in India. Established by the Ministry of Industry, Government of India in 1958, it is an autonomous, multipartite, non-profit organization with equal representation from employers & workers organizations and Government, apart from technical & professional institutions and other interests. NPC is a constituent of the Tokyo-based Asian Productivity Organisation (APO), an Inter-Governmental Body, of which the Government of India is a founder member.

Some of the main highlights of the programme are as under:

1. We had registration and inauguration, which was conducted by Dr. Hemant Rao, Regional Director who gave us brief overview of NPC, New Delhi and its unique aspects. Later parts of the sessions were related to Governance, people skills, interpersonal effectiveness and Data governance.
2. A session on change management was of usefulness. The change management session conducted by Dr. Hemant Rao helped us to understand how to handle inter and intra personal disputes within and outside the organization
3. The team building activity session was conducted in order to test and encourage the group and individual Behaviour.
4. Two day outbound trip was arranged by the institute to visit various places around Kodaikanal, which is presumed to be heaven on earth during the afternoon session.
5. General awareness on project management, Team building, Managing knowledge and Technological challenges came to be very thought provoking sessions.

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7) The main objective of the workshop on **"Smart grid and Internet of Things"** at 18 to 22 June 2018, NIE Mysore. Provide a platform or an in-depth discussion on the various challenges encountered in IoT based Smart Grid and their possible solutions. Traditional power grids are being transformed into smart grid to solve the problems of unidirectional information flow, energy

Details of Academic Activity	**Smart Grid and IoT**
Type of Academic Activity	FDP
Faculty / Staff	Manohara. H.C Assot. Professor E&E Engg
Date & Place	18th to 22nd June 2018, NIE Mysore

wastage, growing energy demand, reliability and security. The smart grid employ various devices for monitoring, analysis and control of the grid. Hence, Smart grid requires connectivity, automation and tracking devices, this is achieved with the help of Internet of Things (IoT). After attending this workshop, i have gained knowledge in the area of Smart grid and IoT from academicians and industry experts. It enhanced my knowledge, which i can deliver to our students effectively.

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Details of Academic Activity	**FDP-Engineering Mathematics-I and its Application**
Type of Academic Activity	Workshop
Faculty / Staff **(Department of Mathematics)**	• Prasad M 　Asst. Professor • Nayaka S R 　Asst. Professor
Date & Place	18th to 22nd June 2018, PSG ITAR, Coimbatore

8) **Engineering Mathematics-I and Its Applications"** from 18th to 22nd June 2018, at PSG Institute Technology and Applied Research, Coimbatore Department of Mathematics, PSG College of Technology and Applied Research organized one week FDP Program on Engineering Mathematics-I and its Applications. The program was commenced on 18th of June, inaugurated and Presided by Dr. P. V. Mohanram, Principal, PSG iTech. Dr. V. Jailaxmi, Professor, delivered the first talk and Head, PSG iTech, Coimbatore on Representation of Functions and Limit of a function followed a talk on Differentiation rules, maxima & minima by Dr. R. S. Sankara Subramanian, PSG iTech. In successive days many Professors in and out of PSG Institutions, presented talk on different concepts in Engineering Mathematics-I. As a whole, the program was very useful in visualizing mathematical concepts, especially in Calculus.

9) Two days faculty Development programme on **"Recent Trends in Automotive Technology"** at Malnad College of Engineering , Hassan from 25th - 29th June, 2018.

The objectives of this FDP were expose the faculty to new developments in the areas of automotive technology is the thrust area where lot of changes made for improving the overall efficiency of a vehicle.

In this FDP, industry experts and faculty from IIT'S, NIT'S were given excellent lecture on relevant areas

Topics covered in the programme were:

* Recent Development in Automotive Technology
* Hybrid & Electrification, Need & Market trends
* Improvements in internal combustion engines
* Hybrid and their working principles
* Vehicle onboard diagnostics
* Bus Design and Body Building
* Trends in gasoline systems for emission reduction

Details of Academic Activity	Recent trends in Automotive Technology
Type of Academic Activity	Workshop
Faculty / Staff	Anil Kumar S V Assot. Professor Mech. Engg
Date & Place	25th to 29th June 2018, MCE, Hassan

During this programme I visited BEML at Mysore and KSRTC workshop at Hassan. These visits were useful to gather the information about the manufacturing process and testing facilities in the above industry. I will transfer gathered information to the student community.

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Details of Academic Activity	Internet of Things
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. Mahesh Kaluti Asst. Professor CS & Engg • Suraj B S Asst. Professor CS & Engg • Rakshith N Asst. Professor IS & Engg
Date & Place	25th to 30th June 2018, Scientech Technologies Pvt. Ltd, Indore

10) TEQIP sponsored one-week Faculty Development Programme on **"Internet of Things"** from 25th to 30th June 2018, at Scientech Technologies, Indore

About IOT: wireless connections, cloud computing, and the explosion in portable and wearable computing are enabling exponential growth. Initially, it was believed that radio-frequency identification (RFID) was the prerequisite for the Internet of Things. But in more recent years, technologies such as Near Field Communication (NFC), barcodes, QR codes and digital watermarking are also enabling the tagging of all things in the real world

Basic Electronics Lab Products and Training Solutions:

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Architecture of IoT:

Technology has brought about revolutionary changes in the way we live. It has touched every walk of life, making it better, making it simpler.

The education world too has opened its doors to technology. Bidding adieu to the stereotypical methods, it has gradually started to adopt new and modern methods to impart knowledge. Educating the students of today in a way that reaches them, connects with them, and clicks with them. Technology based teaching is the order of the day and it is where Scientech comes into play. Smart and intelligent Scientech products make studies interactive and infinitely more interesting for students.

The coming pages showcase an all-inclusive range of smart and intelligent integrated learning solutions from Scientech. It covers classroom solutions, laboratory solutions, digital library, solutions related to infrastructure, workshop and hobby. These solutions would not only provide a new dimension to education but also give a distinct edge to your institution.

Details of Academic Activity	**Recent trends in Automotive Technology**
Type of Academic Activity	Workshop
Faculty / Staff	Anil Kumar S V Assoc. Professor Mech. Engg
Date & Place	25th to 29th June 2018, MCE, Hassan

given excellent lecture on relevant areas

Topics covered in the programme were:
- Recent Development in Automotive Technology
- Hybrid & Electrification, Need & Market trends
- Improvements in internal combustion engines
- Hybrid and their working principles
- Vehicle onboard diagnostics
- Bus Design and Body Building
- Trends in gasoline systems for emission reduction

During this programme I visited BEML at Mysore and KSRTC workshop at Hassan. These visits were useful to gather the information about the manufacturing process and testing facilities in the above industry. I will transfer gathered information to the student community. Finally, I thanks to Principal PESCE, and TEQIP Coordinator PESCE, have given a permission to attend said programme.

11) I attended TEQIP-III Sponsored two weeks Faculty Development programme on **"Recent Trends in Automotive Technology"** at Malnad College of Engineering, Hassan from 25th to 29th June 2018.

The objectives of this FDP were expose the faculty to new developments in the areas of automotive technology is the thrust area where lot of changes made for improving the overall efficiency of a vehicle. In this FDP, industry experts and faculty from IIT'S, NIT'S were

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12) The One week Faculty development program sponsored by TEQIP-III, entitled, "**Advanced Mathematical Tools in Engineering Applications**", Twinning Program with Jorhat Engineering College, Jorhat, held at Malnad College of Engineering, Hassan, organized by the Department of Mathematics.

Dr. K. S. Jayantha, Principal, MCE inaugurated the program and Keynote address was delivered by Dr. I. S. Shivakumar on stability of fluid flows-A Numerical study. Followed by the lunch, Dr. Gopalkrishna spoke on Mathematical modelling for Cryptography, an introductory concepts with applications in various fields of technology. Dr. Rushi Kumar followed by the hands-on (practical) session on MATLAB by Dr. Dinesh

Details of Academic Activity	**Advance Mathematical Tools in Engineering Application**
Type of Academic Activity	One Week FDP
Faculty / Staff	- M R Harini Asst. Professor Mathematics - Prasad M Asst. Professor Mathematics - Nayaka S R Asst. Professor Mathematics
Date & Place	02nd to 06th July 2018, MCE Hassan

P. A., which was very interesting and very fundamental syntax, started the second day of the program with talk on numerical methods for PDE and programming formats were explained.

The third day of the program was completely reserved for ANSYS, an engineering simulation & 3D design Software, spoke by Dr. Farooq Nazar from University of Jammu. Morning session was theoretical, about the introduction to the concepts in ANSYS and advantages and advances in ANSYS were explained. Afternoon session, we were supposed to learn the concept practically. Fourth day of the program was very interesting where we learnt how to visualize mathematics with help of graphing calculators /software's. Dr. Srinivas was the speaker who taught us how to see mathematics and afternoon the numerical methods for partial differential equations were explained by Dr. Vasudeva Murthy. Dr. B. S. Sugan handled the fifth and last day of the faculty development program from HAL spoke on Mathematics in Aircraft Engineering, which is completely an application oriented session.

Afternoon of the session was handled by Head, Department of Mathematics, MCE and spoke on simple applications of mathematics in Mechanical and Electrical engineering. Finally, the one week FDP was concluded with a valedictory function, presided by the Principal, MCE.

As a overall, the program was very useful in understanding the use of mathematical tools like Matlab and ANSYS in various branches of Engineering. Also, we came to know, how the ideas in Engineering Mathematics are used in Aircraft, Biotechnology, Mechanical, Electrical engineering etc.

Details of Academic Activity	**Data Analytics and Learning**
Type of Academic Activity	Workshop
Faculty / Staff	• Dr. M L Anitha Asst. Professor CS & Engineering • M Veena Asst. Professor CS & Engineering • Geethanjali T M Asst. Professor IS & Engineering • Ramyashree H P Asst. Professor CS & Engineering
Date & Place	05th to 07th July 2018, SJCE Mysore

13) Three days' workshop on **"Foundation Course on data analytics and learning"** at SJCE, Mysore from 5th July to 7th July 2018

The workshop helped in gaining fundamental knowledge on various learning techniques such as to build, develop and design our own ideas int field of data and its learning methods. Also, gave the knowledge in Neural network programming and how to apply into system controlled applications.

Objectives:
- To expose the Faculty/Research Scholars/Students in emerging areas of Data & its learning methods.
- To introduce the participants on various learning method(methods)
- Overview of Neural Networks and its evolutions.
- Introduce the participant to Deep Learning Techniques.
- Demonstration of all the learning techniques (Supervised, Unsupervised, Deep Learning Techniques).

Impact of the Workshop:
- Ability to identify the areas, where learning methods can be applied in general/specific domains.
- To gain knowledge on Supervised and Unsupervised Learning algorithms.
- Coverage towards the various aspects of Neural Networks and its evolution models.
- Demonstration of all the working models of learning methods.

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14) The recent developments in the renewable energy sector has brought out many research problems and addressing those, developments become the need of the today scenario.

Reliability and sustainability are two important factors that needs to be focused while adapting renewable energy. The sessions on solar radiation measurement & estimation, reliability assessment, design of solar PV system provided the basic theory and mathematics involved. The discussion on optimization techniques for planning renewable energy systems have given wide scope for many challenges. The session on implementing MPPT techniques provided all the basics that are necessary to develop efficient modules to track maximum power. I hope this one-week Faculty development programme is beneficial and has provided you with ample knowledge to enhance the research potential in the area of renewable energy and hence make it possible to bring out innovative developments in this area.

Details of Academic Activity	**Recent Developments of Solar wind energy system for on/off grid application**
Type of Academic Activity	5 days FDP
Faculty / Staff	B N Harish Assot. Professor E&E Engineering
Date & Place	09th to 13th July 2018, MCE, Hassan

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Details of Academic Activity	**Machine Learning**
Type of Academic Activity	Workshop
Faculty / Staff	Dr. Nagarathna Professor CS & Engineering
Date & Place	7th July 2018, RMZ Infinity, old Madras road Bangalore

15) "Machine Learning" is a high-end problem solving technique, now widely used in key industries like Google, Amazon, Microsoft, General Motors, General electric, financial institutions etc. it provides systems the ability to automatically learn and improve from experience by learning. Machine learning focuses on the development of computer programs and algorithms that can access data and use it for improvement of the performance by themselves. The process of learning begins with observations or data such as direct experience or instructions in order to look for patterns in data and make better decisions in the future based on learning examples that we provide. To help grow in nascent AI/ML ecosystem in India, Google hosted a daylong workshop on the Machine Learning Crash Course on July 7th in Bangalore. The Workshop had 66 faculties from around 45 Engineering colleges in Karnataka who together committed to training over 4300 students on ML in upcoming semester. The primary aim of the workshop is to allow the participants to acquire the basic knowledge and programming (Python) skills needed to independently work on machine learning techniques in their respective domains.

Details of Academic Activity	Machine Learning
Type of Academic Activity	Workshop
Faculty / Staff (Department of CSE)	• Dr. M L Anitha Professor of . • Bhavya D Asst. Professor . • Deepika Asst. Professor . • Shwetha M K Asst. Professor . • Chaitra H P Asst. Professor .
Date & Place	12th to 17th July 2018, Global Acdemy of Technology, Bangalore

16) **"Machine Learning"** is becoming prevalent and organizations are using it a variety of ways in various fields of life, including identifying spam, improving cyber security, biometrics, medical diagnosis, natural language processing, search engines, user behavior analysis, enhancing recommendation engines and optimizing self-driving cars etc. This FDP aimed at disseminating the knowledge about Machine Learning Techniques and providing an opportunity for participants in implementing them and getting them to work.

Objective of the workshop
1) To provide overview of Machine Learning. 2) To provide exposure to various modules of Machine Learning. 3) To provide hands-on sessions for the lab programs.

Outcome of the workshop
- Understand Python programming for implementing Machine Learning algorithms.
- Understand concept learning, decision tree learning, ANN and Bayesian learning algorithms.
- Evaluating instance based and reinforcement learning.
- Identify and apply Machine Learning algorithms to solve real world problems

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17) Five Days National Level Workshop on **"Computer Networks and Cyber Security".** Computer Networks, Distributed Computing, Multimedia networks, Software defined Networks or Cognitive Networks, Opportunistic Networks, Scalable Issues related to Networks, IoT Security Protocols, Security Issues in Industrial Automation and Control Systems, Wireshark, Nmap, Cisco Packet Tracer, Cyber Crimes, Security and Law, Cyber Threats, Information Centric Networks, Blockchain, IDE, Cyber Security in AI.

Outcome of the workshop
- After attending five days Workshop, we have gained knowledge on recent technologies in Computer networks, network Security and cyber security.
- We have obtained deep insights of different algorithms and methods used in Multimedia networks, Software defined Networks or Cognitive Networks, Opportunistic Networks etc.
- We have acquired knowledge about current technological developments through hands-on experience.
- With appropriate commitment in this workshop, we have enhanced our knowledge in usage of security tools in Computer network and Cyber security Domain.

Details of Academic Activity	Computer Network and Cyber Security
Type of Academic Activity	Workshop
Faculty / Staff	• S K Uma Asso. Professor CS & Engineering • Mamatha B S Asso. Professor CS & Engineering • R S P Kumar Asst. Professor CS & Engineering
Date & Place	16th to 20th July 2018, SJCE Mysore

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Details of Academic Activity	Web Technology and its Application
Type of Academic Activity	Workshop
Faculty / Staff (staff of Department of Computer Science & Engineering)	• Sunitha M S • A L Shobharani • Tiruneelakanta Swamy • Meenakshi B S • M N Kishore
Date & Place	16th to 18th July 2018, SJBIT Bangalore

18) Report on FDP on **"Web Technology & its Applications"** at SJBIT, Bangalore from 16th July to 18th July 2018.

About the workshop: Web technology refers to the means by which computers communicate with each other using markup languages and multimedia packages. It gives us a way to interact with hosted information, like websites. Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS)

Objective of the workshop:
- To Develop Static and dynamic web pages.
- To enhance the Skills of Academic folks in designing
- To provide hands-on sessions for the lab programs.

Outcome of the workshop: 1. Understand the Web

Application Terminologies, Internet Tools other Web Services. 2) Evaluating instance based and enforcement learning. Identify and apply Web Technology Laboratory Programs with Mini Project.

Details of Academic Activity	Machine Learning
Type of Academic Activity	Workshop
Faculty / Staff (Department of CSE/ISE)	• Dr. M C Padma Professor & HOD. • Dr. D R Umesh Asst. Professor • Veena M Asst. Professor. • Geethanjali T M Asst. Professor. • Madhura Geetha Asst. Professor.
Date & Place	17th to 21st July 2018, GSSS IETW, Mysore

19) FDP on **"Recent Advances in Machine Learning"** at GSSS Institute of Engineering and Technology for women, Mysore from 17th to 21st July 2018

About the FDP: Machine Learning is becoming prevalent and organizations are using it a variety of ways in various fields of life, including identifying spam, improving cyber security, biometrics, medical diagnosis, natural language processing, search engines, user behavior analysis, enhancing recommendation engines and optimizing self-driving cars etc. This FDP aimed at disseminating the knowledge about Machine Learning Techniques and providing an opportunity for participants in implementing them and getting them to work.

Objective of the workshop:
• Define Machine Learning and problems relevant to Machine learning.
• Making use of data sets in implementing the machine learning algorithms.
• To implement machine learning concepts and algorithms.

Outcome of the workshop: 1) Understand the implementation procedures for the machine learning algorithms. 2) Design java/python programs for various learning algorithms. 3) Identify and apply Machine Learning algorithms to solve real world problems.

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20) **Report** on FDP on **"Web Technology & its Applications"** at SJBIT, Bangalore from 16th July to 18th July 2018. About the workshop: Web technology refers to the means by which computers communicate with each other using markup languages and multimedia packages. It gives us a way to interact with hosted information, like websites. Web technology involves the use of hypertext markup language (HTML) and cascading style sheets (CSS). Objective of the workshop :
• To Develop Static and Dynamic web pages.
• To enhance the Skills of Academic folks in designing
• To provide hands-on sessions for the lab programs.
Outcome of the workshop:
• Understand the Web Application Terminologies, Internet Tools other Web Services.
• Evaluating instance based and reinforcement learning.
• Identify and apply Web Technology Laboratory Programs with Mini Project.

Details of Academic Activity	Web Technology and its Application
Type of Academic Activity	Workshop
Faculty / Staff (staff of Department of Computer Science & Engineering)	• Sunitha M S • A L Shobharani • Tiruneelakanta Swamy • Meenakshi B S • M N Kishore
Date & Place	16th to 18th July 2018, SJBIT Bangalore

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Details of Academic Activity	Computer Network and Cyber Security
Type of Academic Activity	Workshop
Faculty / Staff **(Department of CSE)**	• C Chethana Asst. Professor • Shruthi P S Asst. Professor • Shwetha M K Asst. Professor • Sanjay H M Asst. Professor • S Vinay Asst. Professor
Date & Place	16th to 20th July 2018, SJCE Mysore

21) **"Computer Network and Cyber Security"** on 16 to 20 July 2018, SJCE Mysore.

Artificial Intelligence, Machine Learning and Deep Learning is becoming prevalent and organizations are using it a variety of ways in various fields of life, including biometrics, medical diagnosis, natural language processing, search engines, user behavior analysis, enhancing recommendation engines and optimizing self-driving cars etc. It provides unique learning opportunities including Python, Microsoft Azure Bots and Microsoft Azure machine learning workbench. This FDP aimed at technical read lines required for a career in Artificial Intelligence, Machine Learning and Deep Learning.

Objective of the workshop
1). To provide overview of Artificial Intelligence.
2). To provide exposure to various modules of Machine Learning and hands-on sessions for Machine learning algorithms. 3).To provide overview of Deep Learning.

Outcome of the workshop: a) Understand Artificial Intelligence and Machine Learning concepts like learning methods, regression, classification and clustering. b) Understand searching strategies, decision tree learning, Artificial Neural Network and logistic Regression algorithms. c) Understand different types of agents like Fully Observation and Partially Observation agents, Deterministic and Stochastic agents, Dynamic and static agents, global based agents and utility-based agents etc.

# 4. Students Projects (Funded by TEQIP-III)

a). Projects by UG Students under research and Development

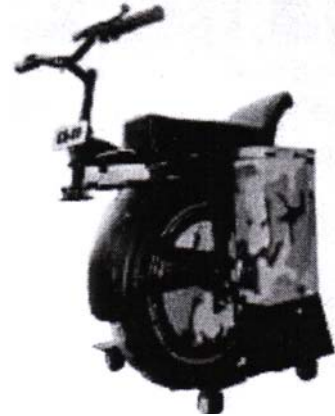| Topic of the Projects	**Development of Single Wheeled Electric Bike**
Name of the Department	Department of Mechanical Engineering
Guide Name	Dr. C J Gangadhara Gowda
Students Name	Shreyas G U (Project for Patent) Mechanical 8th Sem students

i) "Development of Single Wheeled Electric Bike" Department of Mechanical Engineering PESCE Mandya. Single wheeled electric vehicle includes DC electric hub motor and a steering mechanism where in this system is disposed within the wheel of the single wheeled vehicle. The wheel has a hub motor within which there is a stationary centre shaft, vehicle is provided with small training wheels, and operation of the motor causes the rotation of the wheeled vehicle depending upon the throttle. This paper describes the development of Single Wheeled DC Electric Vehicle that can be driven with the help of an accelerator and a power controller.

In the present study, an indigenously built Prototype generally relates an electric transportation and more particularly relates to Eco-Friendly Single-wheeled vehicle, which can be used in both indoor and outdoor systems as a mode of transportation.
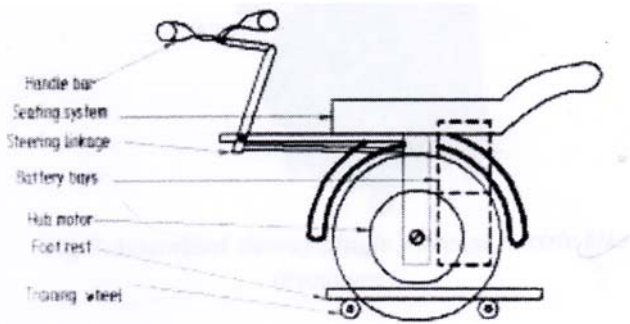
Schematic representation of Single wheeled Electric Bike

Assembled view of single wheeled electric bike (Prototype)

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Topic of the Projects	**National level competition EGA - Electrifying Green Aspiration - National level competition under SAEINDIA**
Name of the Department	Department of Automobile Engineering
Guide Name	• Dr. J Venkatesh Professor & HOD AU Engg
Students Name Automobile Engg, 8th Sem students	1. Samrat U 2. Shreyas G U 3. Pranavkumar 4. Varun P 5. Sufiyan Baig

b) **Eco-Hybrid Scooter** is a combination of three systems i.e. IC engine system which works on petrol, electrical system which works on the rechargeable batteries and regenerative energy.

IC Engine is highly efficient at the speed corresponding to its peak torque which cannot be maintained constantly in normal driving conditions. With series hybridization this efficiency can be tapped. The batteries are automatically charged while the vehicle runs on petrol system and that stored power will further be used for running the vehicle on electric system and this running of vehicle on electric system will be more efficient and pollution free. The objective of this project aims at better utilization of fuel energy and reduces dependence on non-renewable resources using latest technology. This project introduces an integrated system i.e. the combination of petrol and electrical system. The already existing technology of electric system for two wheeler is one in which the only source of energy is rechargeable batteries, which are externally charged with the help of a charger, which is connected to the 220V AC. As the batteries are fully charged, the power goes to the electronic controller through an MCB and a switch. Further this power goes to PMBL (Permanent Magnet Brushless) motor which starts rotating and finally the two-wheeler will run. This project brings in an Eco-hybrid scooter which is more economical and environment friendly. This scooter while operating on IC engine will give power to the rear wheel by consuming fuel (petrol). While running the DC generator will charge the battery as the shaft of the IC engine is coupled to DC generator. A permanent magnet brushless motor cum generator is integrated to the rear wheel. This motor will freely rotate with the rear wheel, the generated power will further go to the controller, then is cutout through a switch and ampere meter and then finally the energy is stored into the batteries. The motor is connected to the batteries with the help of wiring system along with a controller, an MCB, a switch and a throttle. As the batteries are fully charged, controller switches to battery system by switching off the IC engine, so that scooter is now fully operated on the electric system. This running of vehicle on electric system will be free of cost and pollution free.

Topic of the Projects	National level competition Hybrid Two Wheeler Championship - National level competition under SAEINDIA
Name of the Department	Department of Automobile Engineering
Guide Name	• Prof. B Dinesh Prabhu Professor & TEQIP Co-ordinator AU Engineering
Students Name	1. Thejas M 2. Swaroop Gowda and team Automobile 8th Sem students

c) The Final round of India's first Two-Wheeler Hybrid competition for young student engineers called **EGA-Electrifying Green Aspirations (EGA)** - was successfully completed by SAEINDIA Bengaluru Section on 16th June 2018. The event was held at the Institute of Quality and Leadership (IQL) at TVS Motor Company, Anekal. A total of 19 teams had registered for the event from colleges in Karnataka, Tamilnadu, and Madhya Pradesh, out of which 12 teams have qualified and 9 teams participated for final Round of the competition.

Mr. Krishnan, Vice-chairman of SAE India Bengaluru Section was the Chief Guest inaugurated the event by lighting lamp and delivered the welcome address. Mr. C Subramonian, Senior GM R&D TVSM and Mr. Kannan GM R&D TVSM has briefed about starting and benefits of EGA Competition. Mr. Anoop B Srinivasan, SAE India BS MC Member and Mr. Ashoka Kumar Technical Consultant for IntelliPredikt Technologies were presented in the program.

The static and dynamic evaluation has started after the inauguration, overall 9 teams have cleared Static round and 6 teams have done an excellent performance in the Dynamic round.

Experts from various companies like GE, Mercedes Benz, TCS, MBharathi, CADFEM, and TVS Motor company, had participated as experts and constituted the jury panel and Volunteer in the event.

The teams from different colleges have built a vehicle with new technology and innovative ideas in fuel economy, energy efficiency, display mobile app, vehicle monitor, and safety. EGA was a junction point for the Students to share their crazy and fresh ideas with industry experts for future mobility. It's a technical kind of sports for the engineer as it involves a spirit for learning hard work, and a platform to learn from competitors.

Winner of the EGA - Two Wheeler Hybrid Championship has been awarded to team "HYBRID MAVERICKS" from JSS Academy of Technology Education, Bengaluru. Runner-Up to team "NEBULA" from Dayanand Sagar College of Engineering, Bengaluru. Best Design to team "TRYDAN" from Nitte Meenakshi Institute of Technology, Bengaluru and Best Innovation to the team "HERITAGE" from SJCE, Mysore.

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b). Projects by UG Students (curricular)

(i) **"Low Cost and Portable Scrubbing and Bottling unit using Hybrid Compressor for Biofuel system"** Department of Mechanical Engineering PESCE Mandya. This paper summarizes an idea that can be carried out for effective biogas compression and bottling process. Raw biogas consists of CH_4, CO_2, H_2S and traces of water vapor. The presence of incombustible gases like CO_2, $H2S$ and traces of water vapor reduces its calorific value. A scrubbing unit was designed and fabricated to remove the above mentioned incombustible Gases. A high pressure water scrubber for removal of CO_2, Iron wool for H_2S and silica gel was selected for removal of moisture respectively. Water scrubber was cost effective among the available

Topic of the Projects	Low Cost and Portable Scrubbing and Bottling unit using Hybrid Compressor for Biofuel system
Name of the Department	Department of Mechanical Engineering
Guide Name	• Mr. K J Mahendra Babu Asst. Professor Mech. Engg
Students Name	1. T. Manoj 2. Mohammed Khalandar S 3. Kowshik Gowda M A 4. Nagaraj Mechanical 8th Sem students
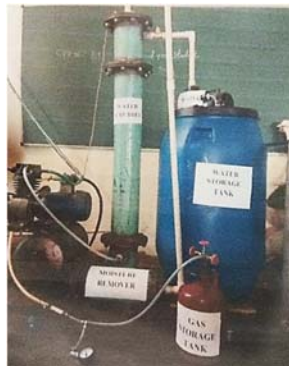
technologies and hence it was preferred.

A high pressure water scrubber was designed based on the flow rate of water and raw bio-gas. Raw biogas was initially passed to stage-I compressor and the biogas is compressed. Then the biogas is passed through water scrubber. This system involves diffusion of CO_2 from biogas to water. Water at high pressure is sprayed from the top of the scrubber by using water pump. The high pressure water absorbs CO_2 from biogas. The upgraded biogas rich in Methane ($CH4$) is then passed to $H2S$ scrubber and moisture remover. The iron wool present in the H_2S scrubber reacts with $H2S$ present in biogas thus removing it and the silica gel present in the unit absorbs the moisture content from the biogas thus purifying it. The purified gas is then passed to stage-2 compressor where it is compressed to a high pressure up to 100 bars. The biogas at this pressure is used for bottling purpose.

Topic of the Projects	**Fabrication of Solar and Dynamo power driven bicycle**
Name of the Department	Department of Mechanical Engineering
Guide Name	Mr. Pavan N K Asst. Professor Mech. Engg
Students Name	1. Pralhad 2. Chethankumar 3. Darshan J V 4. Dhanajay Mechanical 8th Sem students

(ii) **"Fabrication of Solar and Dynamo power driven bicycle"** Department of Mechanical Engineering PESCE Mandya.

In present scenario a solar and dynamo power driven hybrid bicycle will help to solve the major problems of fuel prices, especially the petrol is rising steadily day by day. Again, the pollution due to vehicles in metro cities and urban areas is increasing continuously. To overcome these problems, an effort is being made to research some other alternative sources of energy to drive the vehicle. Again, it is also not affordable to purchase vehicles (mopeds, scooters or motorcycles) for all the class of society.

Keeping this in mind, a search for some way to cater these economically poor people as well as to provide a solution for the environmental pollution was in progress. The solar assisted hybrid bicycle developed is driven by DC motor fitted in the front axle housing and operated by solar energy. The solar panels mounted on the carriage will charge the battery and which in turn drive the hub motor. When the bicycle is idle or stationary in parking, the solar panel will charge the battery and alsoa pair of 48-volt dynamo is fixed on the rear wheel of the bicycle will charge the battery when the bicycle is travelling on the road.

This arrangement will replace the petrol engine, the gear box and the fuel tank in case of a two-wheeler or a chain sprocket, chain & gear shifting arrangement of a conventional bicycle being used by most common man. As a part of dissertation work, the solar assisted bicycle is fitted with a DC hub motor on the front axle of a bicycle with a power rating of 48 V, 300 W and with a travelling speed of around 25-30 km/h. It is provided with a two pair of lead acid maintenance free batteries of 12v each total 48v, a photovoltaic solar panel with a capacity of 20 watts, a voltage regulator of 48 V 300-Watt, accelerator and motor controller of 48 V 25 Amp. There is also a provision for charging of the battery with 48 V, AC wall outlet supply, in case of poor solar supply due to cloudy weather.
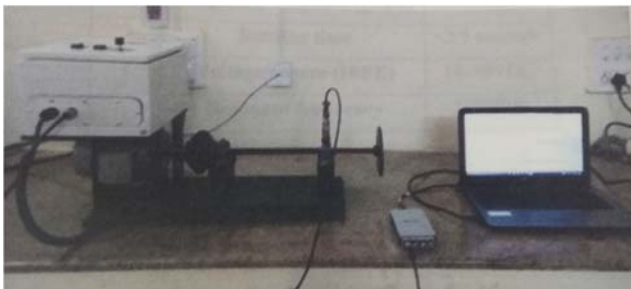

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c). Projects by PG Students (curricular)

"Study of vibration characteristics of rotating system" Department of Mechanical Engineering PESCE Mandya.

Determination of vibration characteristics and their analysis can be useful for condition monitoring of mechanical system. Hence, there is further scope to extend the present work for analyzing the status and condition monitoring of rotating mechanical systems like gear box, turbine etc..

Topic of the Projects	**Study of vibration characteristics of rotating system**
Name of the Department	Department of Mechanical Engineering
Guide Name	• Dr. S L Ajit Prasad Professor & Dean (R&D) Mech. Engineering
Students Name	• Ahobal N 4th Sem, M.Tech Students Mech.

The project work is an attempt to investigate the vibration characteristics of rotating machining system, which has unbalanced rotor mounted on overhung shaft. Vibration signals are acquired using accelerometer mounted on one of the bearing housing. The FFT analysis of the acquired data revealed the steady state response of balanced and unbalanced rotor under operating conditions. Numerical analysis of the system using ANSYS portrayed the model frequencies, mode shapes; harmonic analysis illustrates the response of system for different mass unbalance. Campbell diagram has been constructed to identify critical speeds at different excitation frequencies.

Ahobal N and Ajit Prasad S L technical paper has been published vibration characteristics of mechanical system with unbalanced rotor, mounted on an overhang shaft, NAFEMS India regional conference on engineering modelling, analysis, simulation and 3D-printing (NIRC-2018), Bangalore. 20-21 July 2018.

5. Teaching Faculty Participation and Paper Presentation in Conference (within India)

Type of Conference	5th International Conference
Topic of the Paper	Blended Cryptography for Secured Date Transfer in Medical IoT Devices
Faculty/Staff	Revanesh M Assot. Professor E&C Engineering
Date & Place	29th to 30th Nov 2017, Vancouver BC Canada

1) The 5th international Future Technology Conference **"Blended Cryptography for Secured Date Transfer in Medical IoT Devices"** on 29 to 30 Nov 2017, Vancouver BC Canada.

I attended was conducted by Sai (Science and Information Organization Group) sponsored by IEEE and MEL (Master of Engineering Leadership) presented useful topics on Ambient Intelligence, Healthcare Technologies and Security and Privacy Issues involved in current technologies. Since my research is about Security and Privacy in Wireless Sensor Network, this conference provided me a full opportunity for practice and constructive dialogue.

This conference was an ideal platform for early results of my work because it is an international forum, consists of researchers, education scientists, technologists and industry representatives who are experts in the field of security and Privacy. Also, this forum acts as a strategic think tank to enhance a constructive dialogue and collaboration on themes relevant to the research work which I am carrying.

The paper that I submitted to the conference was allocated in Ambient Intelligence session. The paper was: Revanesh M. and Sridhar. V "Blended Cryptography for Secured Data Transfer in Medical IoT Devices " and published in the conference book.

I have presented an oral presentation in the conference for fifteen minutes on Thursday 30th of November 2017 and I have also successfully attended the other conference events on 29th and 30th November, 2017. As a result, academic researchers and experts of approximately 60 attendees received it successfully. The conference included 138 participants and 9 invited speakers from 51 countries

The conference provided me with a valuable learning experience. For instance, it was an excellent opportunity to gather together, interact and exchange their findings and views during conference sessions, coffee breaks and conference dinner. Consequently, I have known a number of academics and professionals from different countries who have similar research interests such as emulsion and new product development.

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2) **"Innovative Research in Engineering Science, Management and Humanities"** International Conference at 17 to 18 March 2018, IEI Hyderabad.

In the growing traffic of metropolitan cities, traffic congestion has become a main problem. The problem is even worse at intersection due to improper signal timings which in turn causes delay, increase in vehicle operation cost and also pollution is the main concern of recent times. Delays have attributed to various socio-economic and environmental problems. The fright movement of the country plays a vital role in judging the development and economic stability of the country. Delays are least caused in highways and rural road stretches, they are quite often experienced in urban transport system.

Type of Conference	**International Conference**
Topic of the Paper	Innovative Research in Engineering Science, Management and Humanities
Faculty/Staff	Shambhavi Assot. Professor CV Engineering
Date & Place	17th to 18th March 2018, IEI Hyderabad

Hence urban traffic forms the concerned region to study on delays caused for vehicles and pedestrians. Delays in traffic are caused due to numerous factors like scarcity in road width, driver and pedestrian characteristics, vehicle composition, lack of road infrastructure, road condition and geometry, traffic signal management and many more. Among the above factors contributing to delays improper signal timing or its management forms the main theft for the delays at signalized intersection. Though the main intention of signalized intersection is to reduce the conflicts points which are encountered more as in case unsignalized intersections and rotaries, and also to provide equal opportunity for all vehicles to overcome the junction. The main parameter while evaluating a signalized intersection is the delay caused due to the signals.

Hence, in order to encounter the problems the traffic signal synchronization is the technique in which vehicle starting at one end of street and travelling at specific speed can go to other end without stopping for red light at any intersection. In the study, the existing traffic at each junction along the southern ring road of Bengaluru city is studied, signal is designed, thereafter the optimized signal is synchronized, and benefits are estimated.

Type of Conference	International Conference
Topic of the Paper	Synthesis and Mechanical Characterization of Aluminium Reinforced with Various Nano-Sized TiO2 Particulate Composite
Faculty/Staff	Dr. H M. Nanjundaswamy Professor I&P Engineering
Date & Place	14th April 2018, IEI, Mumbai

3) **"Synthesis and Mechanical Characterization of Aluminium Reinforced with Various Nano-Sized TiO2 Particulate Composite"** The 2nd International Conference on Recent Developments in Science, Engineering and Management & Humanities (SEMH-18), at 14 April 2018, IEI, Mumbai. Was the premier interdisciplinary forum for the presentation of new advances and research results in the fields of Science, Engineering and Management & Humanities. The conference held on 14th April 2018, gave me an opportunity to meet leading academic scientists, researchers and scholars in the domain of interest from around the world. Topics of interest for submission include:

- Composites Materials and Engineering
- Nanocomposites
- Hybrid materials
- Advanced Composite laminates
- Advanced manufacturing processes
- Nano-fibres and composites
- Industrial applications and case studies.

I was able to present a paper entitled, "SYNTHESIS AND MECHANICAL CHARACTERIZATION OF ALUMINIUM REINFORCED WITH VARIOUS NANO-SIZED TiO2 PARTICULATE COMPOSITE (Paper Code: IEI Mumbai/April 2018 /1018)", and also Chair a session on 14th April 2018, wherein 24 authors presented their paper on varied topics.

The knowledge outcome is advantageous to the institution and to my department in seeking funds from various funding agencies. The knowledge gained by interaction will also help in leading research projects and guiding UG, PG and research students more effectively.

Moreover, the present conference also helped in creating new relations with the researchers from both academia and industries to share their experience and knowledge on new technologies and instruments related to my research area. It helped me in obtaining new ideas from the participating professionals and research students to the institutional development.

Further, the knowledge gained by the technical tracks of the conference helped in meeting some of the training needs of the institution.

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4). The International Conference on **"Smart Innovations in Engineering Systems and Technology SIEST-2018"** held at RL Jalappa Institute of Technology, Doddaballapur, Bangalore Rural District was more informative and knowledge sharing forum for the innovators. The conference was held on 18th and 19th May 2018 at conference hall, Mechanical Engineering Department. The conference was sponsored by TEQIP-III of PES College of Engineering, Mandya. The objective of the conference is to encourage and share the knowledge in the field of research and to provide a noble platform to meet leading academic scientists, industry innovators and people who are doing their research on the same field of interest.

Type of Conference	International Conference
Topic of the Paper	Smart Innovations in Engineering Systems and Technology SIEST-2018
Faculty/Staff	• Srinivasa M R Asst. Professor Mech. Engineering • SADASHIVA M Asst. Professor Mech. Engineering
Date & Place	18th and 19th May 2018. R L Jalappa Institute of Technology, Doddaballapura, Bangalore

The different field of submission of papers are as follows:

➢ Nano composites
➢ Advanced technologies
➢ Advanced manufacturing technologies
➢ Industrial applications and case studies.
➢ Hybrid materials
➢ Advancements in material preparation

In the conference the paper presented by me is entitled with "FRETTING ANALYSIS OF ALUMINIUM REINFORCED WITH GRAPHENE". The paper concerned with fretting analysis advanced composite materials. Base on the knowledge acquired in the conference by meeting the scientists from different college with same demine I decided to continue the research in the same area and applied the project for sponsorship to different financing institution. The same knowledge is shared among the students and for the improvement of college academic activities.

Type of Conference	**International Conference**
Topic of the Paper	Improving Just-In-Time Manufacturing in Voltage Regulator Assembly Line Using FRID System
Faculty/Staff	Sachin N K Assot. Professor I&P Engineering
Date & Place	12th to 13th July 2018 B V Raju Institute of Technology Telangana

5). Workshop on **"Lean Innovation"** on 16th & 17th April 2018 at Mysore.

I am very happy to mention that, I have an opportunity to attend the workshop on "LEAN INNOVATION" on 16th & 17th April 2018 at NIE Mysore. The Programme was sponsored by TEQIP phase –III. In the workshop, experts interacted on Lean concept, principle & value vs waste. Also done the activates on Lean Tools and Techniques with Industrial applications such as

- Introduction to lean manufacturing.**5S:** Sort, Set in order, Shine, Standardized, Sustain.
- **Standardized work:** standardized work is one of the key cfeasibility of value added materials omponents of a Just-in-Time production system. In order to achieve a balanced work flow, cycle time equal to Talk time, and high quality, work must be standardized at all operations for optimum efficiency and consistency.
- **Problem Solving:** why - why analysis and fishbone diagram has done along with case study activity.
- **Value Stream Mapping:** Value stream mapping is a lean tool that employs a flow diagram documenting in high detail every step of a process. Used as the fundamental tool to identify waste, reduce process cycle times, and implement process improvement.
- Done case studies on Current and Future planning taking the example of automotive industry.
- **Lean Daily management**: Lean Daily Management (LDM) is the system that allows to deliver customer value through proper support and leadership to those who are closest to the process and also done the activities considering industrial example.
- It was an opportunity to me not only to attend the workshop, but also it created a platform to interact with the experts and administrators of various college.

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6). The National conference of **"Symposium and Workshop for Analytical Youth on Applied Mechanics (SWAY AM-2018)",** was the premier interdisciplinary forum for the presentation of new advances and research results in the fields of Science and Engineering.

The conference held on 4th, 5th and 6th July, 2018, gave me an opportunity to meet leading academic scientists, researchers and scholars in the domain of interest from around the nation. Topics of interest for submission include:

- Composites Materials and Engineering
- Nano composites
- Hybrid materials
- Advanced Composite laminates
- Advanced manufacturing processes
- Nano-fibres and composites
- Industrial applications and case studies.

Type of Conference	**National Conference**
Topic of the Paper	Effect of Various Nano-Sized TiO2 Particles on the Mechanical Properties of Aluminum Composites
Faculty/Staff	Dr. H M. Nanjundaswamy Professor I&P Engineering
Date & Place	04th to 06th July 2018, Birla Institute of Technology and Science (BITS) Pilani

I was able to present a paper entitled, "Effect of Varioµs Nano-Stzed TiO_2 Particles on the Mechanical Properties of Aluminium Composites. (Paper -Code: 83)" and Chair a session on 5th July 2018, wherein 78 authors presented their paper on various topics.

The knowledge outcome is advantageous to the institution and to my department in seeking funds from various funding agencies. The knowledge gained by interaction will also help in leading research projects and guiding UG, Research students more effectively.

Moreover, the present conference also helped in creating new relations with the researchers from both academia and industries to share their experience and knowledge on new technologies and instruments related to my research area. It helped me in obtaining new ideas from the participating professionals and research students to the institutional development.

Further, the knowledge gained by the technical tracks of the conference helped in meeting some of the training needs of the institution.

6. Papers Published Teaching Faculty in International Conference & Journals

SL. No.	NAME OF THE FACULTY	JOURNAL NAME	ISSN NO	TITLE OF THE PAPER	YEAR OF PUBLICATION
1	Mahendra Babu K J	Journal of Research in Science, Technology, Engineering and Management (JORSTEM)	2456-0197	Throttling Characteristics of Multi-Hole Orifice in Multi Stage Assembly	Sep. 2017
2	B M Thamanna	Science Direct Material today Elsevier	2214-7853	Novel MgTiO3:EU P-MgTiO3:Eu3+ Nano phosphor its Photometric Analysis for Multifunctional Application	Vol.4, pp1306-12343, 2017
3	Dr. M C Padma	International Journal of Innovative Research in Computer and Communication Engineering	2320-9801	IOT Based Dual Purpose Web Application for Smart Public Transportation	Vol.5, issue.5, 5/1/2017
4		International Journal of Innovative Research in Computer and Communication Engineering	2320-9801	Cricket Ground Humidity Controller Using LoRa Technology	May-17
5		International Research Journal of Technology.	2395-0072	IOT Based Smart Surveillance System	Vol. 4-181, Value. 5, May 2017
6		International Journal of Scientific Progress and Research (IJSPR)	2349-4689	Product Recommendation Using Blogging	Vol. 1, Issue. 1, pp. 1-4, May 2017
7		International Journal of Innovative Research in Computer and Communication Engineering	2320-9801	Hand Gesture Based Communication for Specially Abled People	Vol. I5 Issue. 3, pp. 1111-1115, May 2017
8	Dr. H V Ravindra	International Journal of Engineering Research in Mechanical and civil Engineering (IJERMCE)	2456-1290	Optimization of PGMAW Welding Parameters using Taguchi Technique	Vol.2, issue.4, April 2017
9		International Journal of Engineering Sciences & Research Technology	2277-9655	Optimization of PGMAW Welding Parameters using Taguchi Technique for SS304L PIPES	ICAMS-2017, Vol-3, Coden-IJESS73/1/2017
10	Anil Kumar S V	Journal of Computational and Theoretical Nano-science	1546-1955	Vacuum Brazed Joints of Ti-6Al-4V Steel with Bag22 Filler Metal	Vol. 14, No.11, pp.5585-5589, 2017
11	M Prasad	Palestine Journal of Mathematics	2219-5688	Total Transversal Domination in Graphs	Aprial -18
12	Dr. Puttaswamy	International Journal of pure and applied Mathematics	1311-8080	Paired Domination Polynomial of a Graph	Dec-17
13		International Journal of pure and applied Mathematics	1311-8080	Total Transversal Domination in Graphs	Dec-17
14	Sanjay H M	International Organization of scientific Research and development	1943-023X	Point of time Analysis for target identification time using flock and feedback approach in cloud environment	2017

SL. No.	NAME OF THE FACULTY	JOURNAL NAME	ISSN NO	TITLE OF THE PAPER	YEAR OF PUBLICATION
15	Sachin N K	International Journal of Research in Aeronautical and Mechanical Engineering	2321-3051	Elimination of Frequent Failure of Creel Mounting Shaft in Bead Winding Machine using cause and effect diagram and why-why Analysis	ETME-2017, pp.489-505, Dec-2017
16	M C Girish babu	International Journal of Innovative Research in Computer & Communication Engineering (IJIRCCE)	2320-9801	Raspberry PI Based Tracking via Wireless Communication of Health Care from GSM	Vol. 5, Issue 5, May 2017
17	Dr. H M Nanjunda Swamy	International Journal of Advance Research in Engineering & Technology	2347-4599	Multi Criteria Decision Analysis (MCDA) as Management Technique in design & Development of Advanced Fighter Aircraft Development	Vol.6, Issue. 3, pp.53-64, March 2018
18		International Journal of Advance Research in Science Engineering	2319-8358	Synthesis and mechanical characterization of aluminium reinforced with various nano sized TiO2 particulate composite	Vol.7, Issue.4, pp.281-891, April. 2018
19	Shivashankar S K	International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)	2320-9801	Client based Collaborative Filtering for tourist attraction Recommendation	Vol.5, Issue. 4, April 2017
20	M Jayashankara	International of Innovative Research in Computer and Communication Engineering (IJIRCCE)	2320-9801	Packet scheduling and self Restriction Schemes for underwater acoustic localization in WSN	Vol. 5, Iusse.5, May 2017
21	Dr. P S Puttaswamy	International Journal of Asian Journal of Electrical Sciences	2249-6297	Investigation of Power Quality disturbances in an electric arc furnace	Vol.7, Issue.1, Jan 2018
22		International Journal of Global Journal of Researchers in Engineering	0975-5867	Review on Characteristic Modelling of Electric Arc Furnace and its Effect	Vol. 18, Issue. 1, Feb 2018
23		International Journal of Scientific Progress and Research	2349-4689	A Route towards Nano - Graphene Morphology and its Electrical Properties	Vol.41, Issue 116, Nov 2017
24		International Journal of Electronics and Communication Engineering and Technology	0976-6464	Design DC-DC Converters Using Simulink for Grid Connected PV Systems	Vol.8, Issue.6, Nov 2017
25	Dr. H M Nanjunda Swamy	International Journal of Mechanical and Production Engineering Research and Development (IJMPERED)	2249-8001	Synthesis and Characterization of Mechanical Properties of nano TIO2 particle Reinforced AL-MMC	Vol.8, Issue.2, pp. 981-988, April.2018
26	Dr. Mahesh Gowda N M	Asian Journal of Engineering Applied Technology (AJEAT)	2249-068X	Selection of inductor and snubber Capacitor to Optimize the size and efficiency of DC-DC Switching Power	Vol. 7, No. 1, pp. 49-52, Jan to June 2018
27	Dr. Chandrashekar	International Journal of Current Research in Life Sciences	0975-833X	Rethenium (III) Catalysed Oxidation of Niacin by Chloramine-B in Hydrochloric acid medium: A Kinetic Study	Vol.10 (1), pp.63806-63811, 2018

SL. No.	NAME OF THE FACULTY	JOURNAL NAME	ISSN NO	TITLE OF THE PAPER	YEAR OF PUBLICATION
28		International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)	2456-1290	Characteristics Study of Inconel 718 Surface Generated by Extrusion Honing Process	Vol.2, issue.4, April 2017
29	Dr. H P Raju	International Journal of Engineering and Sciences (IJES)	2319-1805	Neural Network Modeling for Extrusion Honing of super Alloys	Vol. 6, Issue.12, pp.01-17, 2017
30		International Journal of Engineering Research and application	2248-9622	Surface Finishing using Extrusion Honing Process on Monel-400	Vol.7, issue.12, pp. 52-56, Dec-2017
31		International Journal of Research	2348-6848	Study of Surface Parameters of Inconel 600 by Extrusion Honing Process	Vol. 04, Issue.09, pp.2193-97, Aug. 2017
32	B M Thamanna	International Journal of Applied Engineering Research	0973-4562	Synthesis, Structural and luminescence studies of Bi 3+co-doped MgTiO3: Eu+3 Nonophosphor	Vol. 13, (9)2018, pp.7184-7189
33	Srinivasa M R	International Journal of Engineering Research in Mechanical and civil Engineering (IJERMCE)	2456-1290	Analysis of Dynamic Properties of Aluminium 6061 Reinforced with Varying Percentage of Graphene	2017-18
34	Gopiya Naik S	International Journal of electrical and electronics Engineers	2321-2045	PLC based Electrical Demand Management in sugar Industry	Vol. 9, No.2, pp. 390-401, July-Dec 2017
35		International Journal of Recent Research Aspects (IJRRA)	2349-7688	Investigation on Hardness Properties of Friction Stir Welded AA2024 Hybrid Metal Matrix Composite Plates	2018-19
36	Sadashiva M	International Journal of Recent Research Aspects (IJRRA)	2349-7688	study on Corrosion Behaviour of Friction stir Welded AA6061 Hybrid Metal Matrix Composite Plates	2018-19
37	Dr. H P Raju	Published by AIP Publishing	020022-1	Micro Structural Characterization and Analysis of Ball Milled Silicon Carbide	AIP conf. proc. 1943-020122
38		International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)	2456-1290	Mechanical Modeling and Testing of 3D Printed Material	Vol.3,Issue 5, May 2018
39	Mahendra Babu K J	International Research Journal of Engineering and Technology (IRJET)	2395-0072	Analysis on the Rear Axle Housing of Heavy Truck Using Ansys	Vol. 05, Issue. 07, July 2018
40		Published by AIP Publishing	1943-020075-1-020075-8	Characterization and study of mechanical and tribological properties on titanium di oxide (tiO2) coated 304L stainless steel	AIP conf. proc. 1943-020075-1-020075-8
41	Dr. S Ghanaraja	Published by AIP Publishing	1943-020075- 1-020075-9	Effect of forging on Mechanical Properties of rice husk Ash Silicon Carbide Reinforced A11100 Hybrid Composites	AIP conf. proc. 1943-020075-1-020075-9
42	Sadashiva M	International Journal of Engineering and Technology	2227-524X	Characteristic Investigation on Impact Strength of aluminium Based Hybrid Composite Plates by FSW	Vol. 7(3.12) pp.120-127, 2018

SL. No.	NAME OF THE FACULTY	JOURNAL NAME	ISSN NO	TITLE OF THE PAPER	YEAR OF PUBLICATION
43		Published by AIP Publishing 978-0-7354-1638-3/$30.00	1943,020075-1020075-8:	Characterization Evaluation of Process parameters of friction stir welding of aluminum 2024 hybrid composites	Advances in Mechanical Design Materials and Manufacture AIP Conf: 2018 April
44	Srinivasa M R	International Journal of Engineering and Technology	2227-524X	Fretting Analysis of Aluminium 6061 Reinforced With Graphene	Vol. 7(3.12) pp.568-571,2018
45	Dr. H V Ravindra	IOP Conference Series: Materials Science and Engineering	10.1088/1757-899X/386/1/012032	Estimation and comparison of Welding Performances in P-GMAW using MRA and ANN for AA 304LMateria	IConMMEE 2018, July 2018
46	K J Mahendra Babu	IOP Conference Series: Materials Science and Engineering	10.1088/1757-899X/376/1/012032	Numerical Study on Performance Characteristics of Multihole Orifice Plate	IConMMEE 2018, July 2018
47		Bio fule - Publisher: Taylor and Francis	1759-7269	Box-Behnken response surface methodology for optimization of process parameters for dairy washed milk scum biodiesel production	Vol. 9, No.4, pp. 1 - 11, 2018
48	Dr. J Venkatesh	Renewable energy publisher Elsvier	0960-1481	Bio-Based dilutents improve cold flow properties of dairy washed milk scum biodiesel	Vol. 111, pp. 168-174, 2017
49		Renewable energy publisher Elsvier	0960-1481	Acetone and Diethyl ether improve cold flow properties of dairy washed milk scum biodiesel	Vol. 130, pp. 446-451, 2018
50		Journal of minerals and characterization and engineering	2327-4085	Dry sliding wear behavior of Aluminum 6063 composites reinforced with TiB2 Particles	Vol. 5, pp. 74-89, 2017
51	M Prasad	The Ramanujan Journal	1382-4090	On (l,m) - regular partitions with distinct parts	7/24/2017
52		International Journal of Electrical Engineering & Technology (IJEET)	0976-6553	Optimal allocation of dispatchable and non dispatchable DG units in distribution networks	Vol. 8, issue. 6, pp 29-56, Nov 2017
53	Dr. S Gopiya Naik	International Journal of Electrical Engineering & Technology (IJEET)	0976-6545	Optimal networks Expansion planning DG and Capacitor	Vol. 9, issue. 1, pp 1-17, Jan 2018
54		International Journal of Electrical Engineering & Electronics (IOSR-JEEE)	2278-1675	Optimal allocation siting and sizing of DG in distribution networks for power loss saving	Vol. 13, issue. 1, pp 42-53, Jan 2018
55	Dr. S Gopiya Naik	International Journal of Electrical Engineering & Electronics (IOSR-JEEE)	2320-3331	Heuristic Method for sizing and siting of DG in distribution system for voltage drop reduction	Vol. 13, issue. 1, pp 54-65, Jan 2018
56		International Academic Journal o protection and control of modern power systems	0180-1015	programmable protective device for LV distribution system protection	Vol. 3, No. 28, Sept. 2018

7. Publication of Research Papers (SCOPUS)

Sl. No.	Name of author	Title of paper	Type	Department	Source Name
1	Sudhendra, C., Ramkumar, M.A. Rao, K.A.R.K.	Design, analysis, and implementation of spacecloth based on hexagonal resistor grid network of planar resistors	Journal Article	EC	IEEE Microwave and Wireless Components Letters
2	Srikanth, H.V., Venkatesh, J., Godiganur, S., Venkateswaran. S., Manne, B.	Bio-based diluents improve cold flow properties of dairy washed milk-scum biodiesel	Journal Article	AU	Renewable Energy
3	Sathishkumar, H., Parthasarathy, S.S.	A novel neuro-fuzzy controller for vector controlled induction motor drive	Conference Papers	EE	Energy Procedia
4	Sathishkumar, H., Parthasarathy, S.S.	A novel fuzzy logic controller for vector controlled induction motor drive	Conference Papers	EE	Energy Procedia
5	Sathishkumar, H., Parthasarathy, S.S.	A novel neural network intelligent controller for vector controlled induction motor drive	Conference Papers	EE	Energy Procedia
6	Ghanaraja, S., Ravikumar, K.S., Raju, H.P., Madhusudan, B.M.	Studies on Dry Sliding Wear Behaviour of Al_2O_3 Reinforced Al Based Metal Matrix Composites	Conference Papers	ME	Materials Today: Proceedings
7	Thammanna, B.M., Viswanathan, K., Nagaswarupa, H.P., Vishnumahesh, K.R.	Novel $MgTiO_3$:Eu3+Nanophosphor Its Photometric Analysis for Multifunctional Applications	Conference Papers	Physics	Materials Today: Proceedings
8	Surya, V.R., Kumar, K.M.V., Keshavamurthy. R., Ugrasen, G., Ravindra, H.V.	Prediction of Machining Characteristics using Artificial Neural Network in Wire EDM of Al7075 based In-situ Composite	Conference Papers	ME	Materials Today: Proceedings
9	Gurupavan, H.R., Devegowda, T.M., Ravindra, H.V., Ugrasen, G.	Estimation of Machining Performances in WEDM of Aluminium based Metal Matrix Composite Material using ANN	Conference Papers	ME	Materials Today: Proceedings
10	Jain, S.P., Ravindra, H.V., Ugrasen, G., Prakash, G.V.N., Rammohan, Y.S.	Study of Surface Roughness and AE Signals while Machining Titanium Grade-2 Material using ANN in WEDM	Conference Papers	ME	Materials Today: Proceedings
11	Ugrasen, G., Bhagawan Singh, M.R. Ravindra, H.V.	Optimization of Process Parameters for SS304 in Wire Electrical Discharge Machining using Taguchi's Technique	Conference Papers	ME	Materials Today: Proceedings
12	Ugrasen, G., Mukesh, K.G., Darshan, B.M. Koladur.B., Ravindra, H.V.	Estimation of Machining Performances using MRA and GMDH in Wire EDM of Al2024 based Hybrid MMC	Conference Papers	ME	Materials Today: Proceedings
13	Addamani, R., Ravindra, H.V., Ugrasen, G., Kumar, N.P., Darshan, C.S.	Estimation and Comparison of Welding Performances using MRA and GMDH in P-GMAW for ASTM 106 Material	Conference Papers	ME	Materials Today: Proceedings

8. Ph.D Awardees

P.E.S. Research center Encourages Faculty Members Pertaining to different disciplines to take up research work under the able guidance of Professors Registered as guides under VTU Belagavi and other Universities. Our research center has ample number of research supervisors who could cater to the need of the research center. Faculty members from various disciplines, pursued research under P.E.S. research center and have been awarded Ph.D degree for Basic Sciences & Engineering disciplines.

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MACHINABILITY STUDIES AND TRIBOLOGICAL CHARACTERIZATION OF ALUMINUM BASED METAL MATRIX COMPOSITES

Registered for PhD on 7th April 2006
University/Branch: VTU, Mechanical Engineering
Award of PhD degree: 20th July 2018

Prakash.U
Associate Professor
Dept of Mechanical Engg
S.C.T C E., Thiruvananthapuram

Dr. S.L Ajit Prasad
Professor
Dept of Mechanical Engg
PESCE, Mandya

Abstract: 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.

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.t.

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ESTIMATION AND COMPARISON OF MACHINING PERFORMANCES IN WIRE ELECTRIC DISCHARGE MACHINING USING MRA, GMDH AND ANN

Registered for PhD on November 2010
University /Branch: VTU, Mechanical Engineering
Award of PhD degree: August 2018

Ugrasen G
Assistant Professor ,
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Dr. H. V. Ravindra
Principal &
TEQIP Director
P.E.S.C.E, Mandya

Abstract: 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'$_{16}$ 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. Work piece height of 40 mm thickness is chosen to conduct the experiments. Molybdenum wire of 0.18 mm diameter is used as an electrode material.

Multiple Regression Analysis (MRA), Group Method Data Handling (GMDH) Technique and Artificial Neural Network (ANN) mathematically model the relation between the performance parameters and machining parameters. 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 whereas 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.

INVESTIGATIONS ON THE PERFORMANCE ANALYSIS OF BLUETOOTH SECURITY ISSUES USING ADVANCED ALGORITHMS

Ahmad Hweishel.A Alfarjat
PETRF,
PESCE, Mandya

Registered for PhD on 5th August 2014
University /Branch: E&C Engg
Award of PhD degree: 19th March 2015

1
Dr.H.S.Sheshadri
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Dept of E & C
PESCE,Mandya

Abstract: 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 da 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 discusses. 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.

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NOVEL APPROACHES TO DEVELOP MODULES OF SOURCE ANALYSIS FOR KANNADA SENTENCE IN MACHINE TRANSLATION SYSTEM

Prathibha R.J.
Assistant Professor
Department of IS& E,
S.J. C. E, Mysore

Registered for PhD on 07th December 2011
University /Branch: CS Engg
Award of PhD degree: 20th April 2018

Dr. M C Padma
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Department of CS & E,
PECSE, Mandya

Abstract: 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. 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.

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SOLID WASTE MANAGEMENT ISSUES IN MYSORE CITY- A CASE STUDY.

Registered for PhD on 27th April 2006
University /Branch: Civil Engg
Award of PhD degree: 25th May 2018

Lokeshwari M
Asst. Professor
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R.V. C.E, Bengaluru

Dr. C. Nanjunda Swamy
Principal
Dr. AIT, Bengaluru.

Abstract: 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. Transportation of waste from distant wards to centralized compost plant, in excess of its capacity and overloading, and improper management of excess waste at central compost plant lead to nuisance in and around the compost plant and cause land, groundwater and air pollution. In the study, drawbacks in the present system identified and proposed technical solutions to overcome the same by decentralization of SWM in the city. 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.

A Study on Some Problems in The Theory of Graphs

Registered for PhD on May 2014
University /Branch: Mathematics, UOM
Award of PhD degree: Sept.2018

Nayaka S. R.
Assistant Professor,
Department of Mathematics
PESCE, Mandya

Dr. Puttaswamy
Professor and Head
Department of Mathematics
PESCE, Mandya

Abstract: Combinatorics is a branch of mathematics that 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.

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.

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Exploring Fast Maths Techniques for Medical Image Compression with Region of Interest (ROI) coding Scheme.

Registered for PhD on May 2012
University /Branch: Electronics, UOM
Award of PhD degree: Sept.2018

Suma
Associate Professor
Department of E & C
Engineering
VVIET, Mysuru

Dr. V. Sridhar
Principal
Department , of E& C
Engineering
PESCE,Mandya

Abstract: 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.

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.

Therefore, the problem statement of the proposed study is "To design and develop a compression algorithm using Vedic Mathematics to bridge the trade-off between compression performance and signal quality". 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.

"Parametric Optimization and Performance Monitoring in Turning Nickel Base Super Alloys Using Machine Vision and Acoustic Emission Techniques"

Registered for PhD on November 2012 University /Branch: VTU, Mechanical Engineering
Award of PhD degree: 20/08/2018

Y D Chethan
Associate Professor
Department of Mechanical Engineering, MIT Mysore

Dr. H. V. Ravindra
Principal &
TEQIP Director
P.E.S.C.E, Mandya

Abstract: 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 AERMS and AECOUNTS. Turning trails have been carried out on Inconel718 and Nimonic 75 alloys using coated carbide tools. Taguchi's L27 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. 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.

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Experimental Investigation and Numerical Simulation of Flow Past Cylinders

Registered for PhD on February 2012
University /Branch: VTU, Mechanical Engineering
Award of PhD degree: August 2018

Vikram C.K
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Dept of Mechanical Engg
PESCE, Mandya

Dr.Y T Krishne Gowda
Professor,
Dept of Mechanical Engg,
MITT Mysore

Abstract: 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.

MONITORING THE STATUS OF THE DRILLED HOLE IN COMPOSITE MATERIAL USING MULTISENSORY APPROACH

Umesh Gowda B. M.
Vice principal
SET Polytechnic, Melkote
Pandavapura Tq
Mandya

Registered for PhD on December 2008
University /Branch: VTU, Mechanical Engineering
Award of PhD degree: September 2018

Dr. H.V. Ravindra
Principal
TEQIP Director
PESCE, Mandya

Abstract: 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 (Si_3N_4) as reinforcement. Machinability study has been carried out using HSS tool material. The experiment has been carried out by varying the percentage weight of Si_3N_4, 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.

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PLANNERS FOR INSTITUTIONAL ACADEMIC ACTIVITIES

Sl. No.	Faculty	Academic activities
1	Dr. K Narasimhachary	Controller of Examination
2	Dr. S L Ajit Prasad	Dean (Research)
3	Dr. P S Puttaswamy	Dean (Academic)
4	Prof. K M Ananthu	Deputy Controller of Examination
5	Prof. M J Anand	Deputy Dean (Research) & Coordinator - MOOCs, ICT, NPTEL
6	Dr. D R Umesh	Deputy Dean (Academic)
7	Dr. Shivalingegowda	Coordinator – NAAC, IQAC
8	Dr. R Girish	Training & Placement Officer
9	Dr. B S Shivakumar	Dean (III Cell)
10	Dr. N L Murali Krishna	Warden, Boys Hostel
11	Dr. M L Anitha	Warden, Girls Hostel
12	Dr. B Shanmukha	Warden, VSVM Boys hostel
13	Prof. T M Devegowda	Students Welfare Officer
14	Dr. Mahesh Kaluti	Coordinator - GATE Training, NIRF
15	Dr. S Vinay	Coordinator - Business Incubator, ARIIA
16	Prof. M C Girish Babu	Coordinator - AICTE activities
17	Prof. S K Shivashankar	
18	Dr. Somashekhar	Coordinator - Media
19	Prof. A S Mahesh	
20	Dr. Puneeth Kumar M B	Coordinator - Website
21	Dr. L Prasanna Kumar	Coordinator - Environmental

"Expressing gratitude to Dr. V. Sridhar for rendering services as Principal, PESCE Mandya & TEQIP Director till August 2018. Congratulating Dr. H. V. Ravindra, for assuming Charges as Principal & TEQIP Director and Prof. B Dinesh Prabhu, for assuming Charges as TEQIP Co-ordinator, PESCE Mandya from September 2018, for their respective honorable positions".

Upcoming Conference	Proposed Conference under Twinning Programme	
1st National Conference Organized by Dept. of Management Studies On **"Recent Trends in Business Management"** Date: 25th January, 2019	**2nd International conference** Organized by Departments of Mech. Engineering Sciences (ME, IPE & AE) On **ICAMES-2019** During August 2019	**4th International conference** Organized by Circuit branches of Engineering (CSE,ECE, EEE & ISE) On **ICERECT – 2019** During September 2019

P.E.S. COLLEGE OF ENGINEERING

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