THE DEPARTMENT OF MECHANICAL ENGINEERING

THE CRANK

E-MAGAZINE | ANNUAL ISSUE - #1, JULY 2017

INSIDE THIS ISSUE

ST JOSEPH ENGINEERING COLLEGE

VISION

"To be a value based Department committed to excellence in teaching and research, nurturing technically competent and socially responsible engineering professionals."

MISSION

- Providing state-of-the art technical knowledge in Mechanical Engineering.
- Promoting research, education and training in frontier areas of Mechanical Engineering.
- Facilitating faculty development through quality improvement programmes.
- Initiating collaboration with industries, research organizations and institutes for internship, joint research and consultancy.
- Instilling social and ethical values in students, staff and faculty through personality development programmes.
- Developing innovation in engineering and technology in order to provide beneficial service to the local community.

PROGRAMME EDUCATIONAL OBJECTIVES

- Have sound foundation in mathematical, scientific and engineering concepts necessary to formulate, solve and analyze engineering problems.
- Possess the ability to work as part of teams on multidisciplinary projects.
- Excel in professional ventures with successful careers in industry that meet the needs of national and multinational organizations.
- Exhibit qualities of lifelong learning, professional ethics, and social concerns.

PROGRAMME OUTCOMES

Graduates of the Mechanical Engineering program are able to:

- Apply the basic knowledge of mathematics, science, thermal, design, manufacturing engineering.
- Identify, formulate and solve mechanical engineering problems.
- Design a mechanical system that meets desired specifications and requirements.
- Design and conduct experiments, analyze and interpret data, and report results.
- Apply modern engineering software tools and equipments to analyze mechanical engineering problems.
- Apply engineering solutions in global and societal context.
- Understand the impact of engineering on society and demonstrate awareness of contemporary issues.
- Understand the professional and ethical responsibilities.
- Work in a team of core competence or multidisciplinary teams.
- Communicate effectively in both verbal and written forms.
- Understand the values of life-long learning.
- Apply financial and project management skills in their professional ventures

PROGRAMME SPECIFIC OUTCOMES

Graduates of the Mechanical Engineering program are able to:

- Conduct research programmes on contemporary Mechanical Engineering areas.
- Qualify in various competitive examinations and succeed in procuring best opportunities in the corporate.

THE EDITORS

PRUTHVI SERRAO

CHIRANTH B.P.

BINU K.G.

INSIDE THIS ISSUE

Their opinions and our choices...

Editorial boards across the globe have the power to influence opinions. Their collective ideologies and perceptions lead to article selection and writing, that elicit opinions from experts. These expert opinions often influence the choices of ordinary people. While the editorial board of 'The Crank' does not consider itself to possess any profound influence over matters beyond SJEC; the thought process in preparing this Department Magazine, was to be as comprehensive in reporting news of the Department, and diverse in all other content that has been added.

Opinions have been sought from the faculty, students, and alumni, based on expertise, and we hope that the reader's choices will be positively influenced. In this age of limitless creativity, a lot of effort was put in to make 'The Crank' attractive and appealing to the young readers. There will be something of interest for all stakeholders of the Department in this magazine. As a repertoire of event reports, achievements, and future plans, this newsletter will continue to show the way travelled. The benefit of having a well documented Newsletter is immense and its benefits were experienced during accreditation process and inspection.

As the Department grows, it is important for us to reach out to the general public, industry, and other stakeholders to seek their feedback and participation. This Newsletter will also work in this regard.

We request an honest critique of our efforts that will help us improve the product as we move on.

We wish everybody Happy Reading!

On behalf of the Ed. Board,
Pruthvi Loy Serrao
Chief Editor

ARTICLES

DIRECTOR'S MESSAGE

Success is not an accident. It is the outcome of consistency, careful planning and effort. An interested band of students motivated by dedicated teachers can produce wonders. I am aware that this is happening at St Joseph Engineering College all through the years. It's this dynamism that helps to raise the bar of achievements and make the institution lead in ways more than one.

The Mechanical Wing of the Institute has put together its ideas and creativity in the form of Department Magazine showcasing its achievements. While sincerely appreciating the time and energy spent in this endeavor, I wish the Staff and Students of the Department all the best.

God Bless You!

REV. FR WILFRED P. D'SOUZA

FORMER DIRECTOR'S MESSAGE

I am fascinated to know that great words begin with letter C. I want to share three words here which can be three C's of our life – Choices, Chances and Changes. You must make a Choice to take a Chance or your life will never Change.

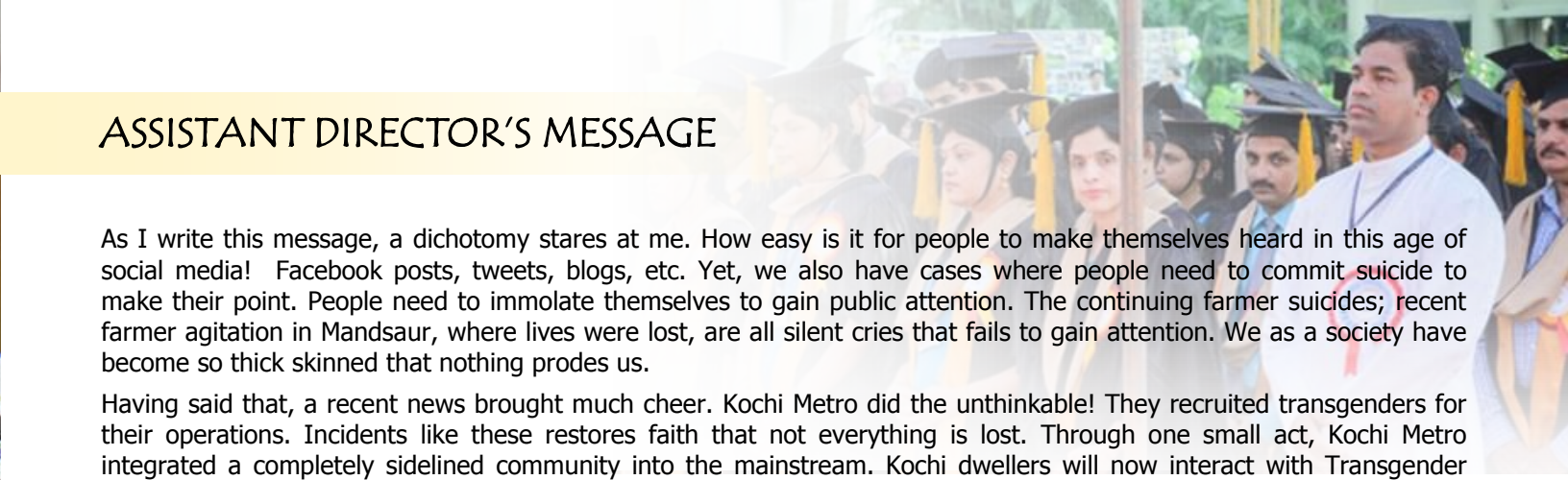
As engineers you will very well know difference between a thermometer and a thermostat. A thermometer only reflects the temperature of its environment adjusting to the situation but a thermostat initiates action to change the temperature of its environment. It takes Charge.

Mechanical Department at SJEC is tremendously immersed in demonstrating a change with student centric choices of learning. I must say it is fully charged, with ideas, potential and energy.

I Am truly delighted to note the various accomplishments of the Mechanical Department of SJEC. I congratulate the Head of the Department Dr Sudheer, the editorial team of The Crank of Mechanical Department. May this Magazine infuse courage to face the challenges, may it bring in a lot of support to stay focused to the future accomplishments at SJEC.

My best wishes to Mechanical Department in all its future endeavours.

REV. FR JOSEPH J. LOBO



ASSISTANT DIRECTOR'S MESSAGE

As I write this message, a dichotomy stares at me. How easy is it for people to make themselves heard in this age of social media! Facebook posts, tweets, blogs, etc. Yet, we also have cases where people need to commit suicide to make their point. People need to immolate themselves to gain public attention. The continuing farmer suicides; recent farmer agitation in Mandsaur, where lives were lost, are all silent cries that fails to gain attention. We as a society have become so thick skinned that nothing prodes us.

Having said that, a recent news brought much cheer. Kochi Metro did the unthinkable! They recruited transgenders for their operations. Incidents like these restores faith that not everything is lost. Through one small act, Kochi Metro integrated a completely sidelined community into the mainstream. Kochi dwellers will now interact with Transgender people on a daily basis and a year from now, they will not be gaped at, they will not be made fun of, they will become one among us. Integration will happen when we are forced to deal with each other. Because, at the core of it, we are all humans. God's children.

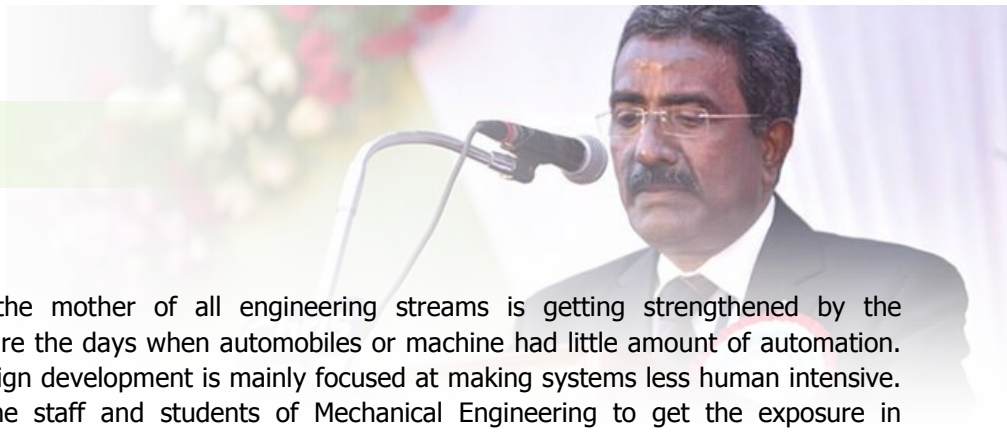
Continuing the point on farmers, I believe things have become bad, because urban India have no connection to farmers. Vegetables, grains and fruits are synonymous with Spar, Easyday, and Apple mart. The hands and souls that raises these essentials are not thought about.

Coming back to messages and the need to be heard, all of us should use every available platform to raise social concerns. I use this opportunity to urge SJEC student community to be aware of the farmers plight. Let's use technology to bring a change in their lives.

I congratulate the editorial board of The Crank for their wonderful job. Keep up the good work.

Best wishes,

REV. FR ROHITH D'COSTA



PRINCIPAL'S MESSAGE

Mechanical Engineering, believed to be the mother of all engineering streams is getting strengthened by the contributions made by its offshoots. Gone are the days when automobiles or machine had little amount of automation. Today we witness the whole process of design development is mainly focused at making systems less human intensive. Therefore it has become important for the staff and students of Mechanical Engineering to get the exposure in interdisciplinary environments. We are witnessing this phenomenon at work through the development of 3D Printer, drones and many other remote controlled devices by the students. Adding to this our students have successfully developed Trackday car, Turtle for SAE-BAJA, Aero-modeling, E-BAJA competitions and have won prizes at the National level, bringing honors to the Institution. A good deal of research in alternative fuel development has been commendable. Efforts towards development of composites are another area where our students have done result oriented work. In this way the Department as a whole has been very active in all spheres of activity, which is highly commendable and noteworthy. The Magazine of the Department The Crank will have enough material to report and make it known. I am highly impressed by the achievements of the Department; the Magazine of the department shall enthuse the youngsters follow the footsteps of their seniors in bettering the accomplishments.

We commend all the remarkable achievements and congratulate the HOD, staff and students and wish everyone the best.

DR JOSEPH GONSALVIS

VICE PRINCIPAL'S MESSAGE

When Alice went through the looking glass,
What was she trying to tell us?
Dream, dream, dream,
Day and night, dream.
But, action is the proof of the pudding,
You gotta do the learned sages' bidding,
Arise, awake, and stop not, till the goal is reached,
SAE India Baja shocked, Manovegam rocked,
A dreamer might conjure up a wonderland
But an achiever can put wonder into any land
Here's wishing that for the Mechanical E-Newsletter
All good things may become always better and better!

Best wishes.

DR RIO D'SOUZA

HOD'S MESSAGE

We are pleased to share E-Magazine 2017 of our Department. The academic year 2016-17 has been a "Year of Achievement" for us. Our students and staffs have imagined their potential and made sincere attempts reaching to the stars with fingers outstretched in all endeavors. I am sure readers will be delighted to know the achievements of the Department.

We would like to acknowledge the excellent support from the Vice Principal, Principal and the SJEC Management. Kudos to the editorial team for giving new dimensions to the E-Magazine.

with regards ..

DR SUDHEER M.

DEPARTMENT STATISTICS

830 - DEPT. STRENGTH

43 FACULTY

7 DOCTORATES

4 FEMALE STAFF

767 STUDENTS

18 FEMALE STUDENTS

47 PLACEMENTS

17 TECHNICAL STAFF

DEPARTMENT ACTIVITIES

The average car has 30,000 parts.

FDP ON AUTOMATION AND ROBOTICS

July 15-16, 2016

A two-day Faculty Development Program on Automation and Robotics was organized by the Department of Mechanical Engineering at SJEC - Vamanjoor, Mangaluru on 15th and 16th July, 2016. The FDP was inaugurated by Mr D. N. Vasuki, CEO of 4i Projects – Bengaluru on 15th July, 2016 at 9:00 am. The ceremony was presided over by Rev. Fr Joseph Lobo, Director – SJEC. Dr Prakash Pinto, Principal (In-charge) - SJEC and Dr Rio D'Souza, Vice Principal - SJEC, graced the occasion as Guests of Honour.

Mr Mohan Raj from MTAB – Chennai, Prof. Dr Muralidhara from NMAMIT – Nitte, Mr Abhinav Sood from FANUC INDIA Pvt. Ltd, Mr Milind Taware from Bosch Rexroth, Mr Himanshu Kumar from Indwell Automation and Training – Pune, along with Mr D.N. Vasuki, were the resource persons. The FDP was attended by 40 delegates from various Engineering Colleges in the region. Dr Sudheer M, Professor and Head of Mechanical Engineering, was the Organizing Secretary of the FDP. Mr Binu KG, Mr Santhosh H, and Ms Chaithra V, faculty in the Department of Mechanical Engineering, were the coordinators.

The details of the sessions are provided below.

Session	Resource Persons	Topic
Day 1: July 15, 2016		
Session – 1: 9:30am to 11:00am	**Mr D. N. Vasuki** CEO – 4i Projects Bengaluru	Industry Scenario Market size Challenges
Session – 2: 11:15am to 12:15pm	**Mr Mohan Raj** MTAB – Chennai	Robot Programming with Aristo SIM and Workspace Software
Session – 3: 12:15pm to 1:15pm	**Dr Muralidhara** NMAMIT – Nitte	Kinematics of Robots
Session – 4: 2:00pm to 3:00pm	**Dr Muralidhara** NMAMIT – Nitte	LabVIEW for Mechanical Engineers
Session – 4: 3:00 pm to 4:00 pm	**Mr Abhinav Sood** FANUC INDIA Pvt. Ltd	Industrial Robots Product Presentation Case Studies, Video
Session – 5: 4:15 pm to 5:15 pm	**Mr Milind Taware** Bosch Rexroth	Electric drives and PLC Product presentation Case studies, Video
Day 2: July 16, 2016		
Morning 3 sessions (9am - 1pm). Afternoon 2 sessions (2pm to 4:30pm)	**Mr Himanshu Kumar & Team** Indwell Automation and Training Pune	PLC: Basics, Programming and Testing with Hands-on

E-TIME 2016 - NATIONAL CONFERENCE

August 05-06, 2016

The 2nd edition of eTIME-2016, the two-day FDP and National Conference on *Emerging Trends in Mechanical Engineering* organized by the Department of Mechanical Engineering was inaugurated on 5th August, 2016 at 9:30 AM. Dr K. Narayan Prabhu, Head of the Metallurgical and Materials Engineering Department at NITK – Surathkal was the Chief Guest for the event. Rev. Fr Rohith D'Costa, Director – Incharge of SJEC presided over the inaugural ceremony. Dr Joseph Gonsalvis, Principal – SJEC, Dr Rio D'Souza, Vice Principal – SJEC, Dr Sudheer M, Head of the Mechanical Engineering Department, Dr Purushothama Chippar, Organizing Secretary of eTIME-2016 along with Dr James Valder, Convener of the FDP, were the other dignitaries on the dais.

Dr Sudheer M, welcomed the gathering and provided an overview of the Department of Mechanical Engineering, highlighting the key achievements of the Department. Addressing the gathering, Dr Prabhu spoke about the significance of academic conferences and FDPs and highlighted the academic and research interest in the field of transport phenomenon.

Dr Joseph Gonsalvis spoke about the need for sustained research and not research for the sake of PhD degree. The necessity of bringing out tangible outcomes was stressed upon. In his presidential address, Rev. Fr Rohith D'Costa, requested the faculty to inspire the students to be researchers and produce the next generation Bill Gates and Steve Jobs from India.

Four sessions were held on Day – 1 as part of the Pre-Conference Faculty Development Program.

The details of the sessions are provided below.

Session	Resource Persons	Title
Session – 1: 10.45 am to 12.00 pm	**Dr K Narayan Prabhu** Professor and Head Department of Metallurgical and Materials Engineering. National Institute of Technology (NITK), Surathkal, Karnataka, India.	Thermal Transport Phenomenon in Materials Processing
Session – 2: 12:00 pm to 1:15 pm	**Dr Sathyashankara Sharma** Professor - Department of Mechanical and Manufacturing Engineering Manipal Institute of Technology Manipal, Karnataka, India.	Heat Treatment of Non-Ferrous Metals and Metal Matrix Composites
Session – 3: 2:00 pm to 3:15 pm	**Dr Srinivas Pai P** Professor - Department of Mechanical Engineering, NMAM Institute of Technology, Nitte, Karkala, Karnataka.	Vibration Signal Analysis for Machining and other Applications
Session – 4: 3:30 pm to 5:00 pm	**Dr B. Surendra Rao** Professor of History (Retd.), Mangalore University Mangalore, Karnataka.	Joy of Doing Research

On the second day about 50 delegates from various institutions across the country presented their papers on frontier areas of research in Mechanical Engineering. The FDP and Conference were successful in facilitating interaction between researchers on various topics. The event received good participation and feedback from the delegates.

FDP ON CONDITION MONITORING

January 09, 2017

The Department of Mechanical Engineering at St Joseph Engineering College – Vamanjoor, conducted a two-day Faculty Development Program on Condition Monitoring, on 9th & 10th January 2017 in Spoorthi Conference Hall, 7th Floor of Academic Block – III. This FDP was an attempt to make the particpants aware of Condition Monitoring aspects of Mechanical & Electrical machines as well as to provide a platform for industry-institute people to interact & brainstorm for improvement of efficiency by using condition monitoring.

Dr Gangadharan K V, Professor & HOD, Dept of Mechanical Engineering, NITK - Surathkal was the Chief Guest of the inaugural programme. Dr Joseph Gonsalvis, Principal-SJEC presided over the programme. Dr Sudheer M, HOD, Department of the Mechanical Engineering, Dr Purushotham Chippar, Organizing Seceretary were present on the dais.

The FDP was inaugurated by lighting of the lamp by the dignataries. Dr. Sudheer M, HOD, Mechanical Engineering introduced the Chief Guest & welcomed the gathering.

Dr Gangadharan K.V. delivered the key note address on Basics of Condition Monitoring Techniques, in which he explained various aspects related to real-time monitoring of condition of machines with an analogy of human health monitoring. He urged the participants to initiate awareness & responsibilities among educators and students towards utilizing Virtual LABs an Initiative of Ministry of Human Resource Development (MHRD) Under the National Mission on Education through ICT.

Mr Ganesh Bhatt, Head of the Maintenance Department, BASF - Mangaluru, was the second speaker of the programme. Mr Bhatt delivered a talk on Maintenance Practices in Process Industries. Later, Mr Krishna Balamurali, Principal Engineer, NV Dynamics - Bengaluru, delivered a presentation on Condition Monitoring, Specific to Vibration Analysis & Demonstration of Instruments & Measurements used in DATA Acquision & analysis.

On the second day of the programme, Dr Srinivas Pai, Professor, Department of Mechanical Engineering, NMAMIT, Nitte, delivered a talk on Condition Monitoring of Rolling Elements Bearing and Gears. Mr Keshav Nayak, MRPL - Mangaluru discussed about various aspects on Troubleshooting of Rotary Equipments in Refinery sing Vibration Analysis.

Dr Purushothama Chippar, Associate Professor - SJEC, Mangaluru, provided insights on A Step towards next Gen HUMS in Helicopters. In the afternoon session Mr Santosh C. Assistant Business Manager, AIMIL Ltd. Delivered hands-on training on latest condition monitoring equipments.

The FDP concluded by a Valedictory speech by Dr Sudheer M, HOD of Mechanical Engineering Department at SJEC.

TALK ON INDUSTRIAL AUTOMATION

March 06, 2017

The TORQUE Association of Mechanical Engineering organized a talk on industrial automation on 6th March 2017 for pre-final year students in spoorthi conference hall. The session started at 10:00 am for M1 and M2 class students and at 3:00 pm for M3 and M4 class students. Mr. Sagar Chakraborty, Technical Alliance Manager from Technologics Global Pvt. Ltd, Bengaluru, was the key speaker. The resource person was welcomed by the Torque Staff Coordinator Mr. Swaraj Dominic Lewis which was followed by the session extending for one hour. The speaker also informed the students about the various courses the companies offer regarding the training in automation fields. The session ended with question and answers.

TALK ON CAREER GUIDANCE AND GRADUATE APTITUDE TEST

March 07-21, 2017

The Department of Mechanical Engineering in association with TORQUE - Mechanical Engineering Students' Association and TIME Institute of Management had organized a talk on Career Guidance and graduate aptitude test for pre final year students on 7th and 21st March 2017 at 11.00am by Mr Arun Gundmi, Regional Manager, TIME Institute of Management.

The programme started at 11:10 am at Spoorthi hall, 7th floor, Academic Block 3 on 7th March 2017 for 3rd year M1 and M2 students and same on 21st March 2017 for M3 and M4 students. Mr. Arun Gundmi, Regional manager was the guest representatives from T.I.M.E. The guests were welcomed by the Torque coordinator Mr. Swaraj Lewis. The Mechanical HOD Dr. Sudheer M was present at the event.

Mr. Arun Gundmi gave a detailed explanation on the advantages of MBA, road to success and the importance of CAT exams. The theme of his talk was based on 'Opportunities in M.Sc. in India and abroad '. He highlighted the importance for students to prepare well in advance for the various competitive exams like TOFFEL and GRE so that they might get admissions into recognized national or international organizations. He also informed the students on how to choose better colleges by talking about the various grades of colleges, their course fees, and placement opportunities.

After the conclusion of the speech the students of the third year Mechanical Department had to answer a general aptitude test comprising of hundred questions for a duration of 1 hour. The students at the event acknowledged having gained a lot of information from the talk, along with awareness of their capabilities for performing in competitive exams. The entire programme went on well and the guest representatives were thanked for taking time off to be at our institute for giving the talk and conducting the test. Also the faculty and the 2nd year volunteers were thanked for their support and co operation. The programme ended at 1:00 pm.

WORKSHOP ON NDT

May 09, 2017 @9:15 AM

A Workshop on Non Destructive Testing was organized by the Department of Mechanical Engineering under the banner of its Students Association - TORQUE on Tuesday, 9th May 2017 in the Spoorthi Conference Hall at 9:15 am. The workshop aimed at providing a platform for budding professionals to enhance knowledge and practice of non-destructive testing technology.

Mr Girish Babu, Executive Director and Mr Ganesh S. Tahashildar, Sr. Quality Manager at V&G Industrial Testing Laboratory were the Resource Persons.

Dr Sudheer M, HOD - Mechanical Engineering, welcomed the resource persons. Mr Swaraj Lewis and Mr Poornesh M, TORQUE Coordinators were the event organizers.

The first lecture was presented by Mr Ganesh S. Tahashildar, who gave a technical session on the topic of Welding Defects using NDT. The talk concluded with a Question and Answer

sessions where the students put out their queries on the topic. The second session of the day was on the topic of NDT Methods, which was presented by Mr Girish Babu. The last session was presented by Mr Naveen R, Assistant Professor in the Department of Mechanical Engineering – SJEC on the subject matter of NDT in Process Plants. This was followed by a vote of thanks by the Torque coordinator, Mr. Swaraj D Lewis.

The afternoon session was an industrial visit to V&G Industrial Testing Laboratory in Baikampady. The company representatives conducted demonstration on several NDT techniques like radiography, ultrasonic testing, magnetic particle tests, dye penetration tests etc.

'ALOHA' - FAREWELL PROGRAMME FOR CLASS OF 2017

May 18, 2017

The Mechanical Engineering Department organized the farewell function "Aloha-2017" on Thursday, 18th May 2017 at 2:30 pm in Bishop Aloysius Paul hall. The function was organized with the help of 3rd year and 2nd year mechanical engineering students. Dr Joseph Gonsalvis, Principal at SJEC was the chief guest, Dr Sudheer M., Dean- student welfare and HOD, Mechanical Engineering Department was the guest of honour and Dr Raju K., Research Head - Mechanical Engineering Dept. presided over the function, Mr Vinoothan Kaliveer, Assistant Professor, Mechanical Engineering Department was the convener of the farewell function.

The MC Mr Uttam Bangera student of 3rd year Mechanical Engineering welcomed the dignitaries and the gathering and prayer led by 3rd year and 2nd year Mechanical Engineering students, program continued with welcome speech and raising the toast by Dr Raju K., this was followed by replies to the toast by Mr Anston Pais, Ms Krisantha Pais, Mr Vicky Vaz and Mr Nelroy Periera , followed by guest of honour speech by Dr Sudheer M, followed by distribution of mementos to all final year students and felicitation program of students SAE, ARC, TORQUE, and ISTE associations and the formal function was concluded by proposing vote of thanks by Mr Vinoothan Kaliveer.

The MC Reyon Elias Joseph Lobo continued the informal function which consisted video presentation, singing, dance, attractive games and baila. Informal function was concluded by distributing snacks and the function ended at sharp 5:00 pm.

'TECHNOVA 2017' - PROJECT EXHIBITION

May 26, 2017

The project exhibition 'TECHNOVA 2017' was held on the Friday, 26th of May, 2017. The final year students of Mechanical Engineering had submitted 50 projects in various streams for the exhibition. The projects were divided into three separate streams like Design and Fabrication, Thermal and Material Science.

The judges invited were from academics and industrial fields.

Stream	External Judge	Internal Judge
Design	**Mr. Somshekaran.S** General Manager Maintenance & Engg MCF	**Dr. Raju K** Professor and Head-Research Centre Department of ME SJEC, Mangaluru
Thermal	**Dr. Shankar K S** Associate Professor Department of ME P. A. C.E, Mangalore	**Dr. Purushothama C** Associate Professor Department of ME SJEC, Mangaluru
Material Science	**Dr. Satyanarayan** Professor Department of ME AIET, Moodabidri	**Dr. James Valder** Associate Professor Department of ME SJEC, Mangaluru

The judges were welcomed to the exhibition with a brief introduction by Dr. Sudheer M, Dean -Student welfare, HOD, Department of Mechanical Engineering.

The parents and invitees witnessed the exhibition and appreciated the student's effort. The students were given useful feedback during the interaction.

The Valedictory program was held at 4:00 pm. Dr. Sudheer M, Dean -Student welfare, HOD-Department of Mechanical Engineering welcomed the dignitaries and participants.

Rev. Fr Wilfred Prakash D'Souza, Designate Director, honoured the first prize winners, Rev Fr. Rohith D'costa, Asst Director honoured the second prize winners and Dr. Rio D'Souza, Vice Principal, SJEC gave the award for innovative prize. Rev. Fr Wilfred Prakash D'Souza Designate Director addressed the gathering in which he stressed upon the students growth and innovativeness.

The first prize was bagged by the students Vion J Martis, Venkatesh Mayya N , Gautami Shetty and Deepak Divakar Naik who were guided by Mr Yathish K for their work titled "*Design and fabrication of Areca nut Processing Unit.*"

The second prize was awarded to the research based project titled "*Investigation of Vateria Indica Biofuel with minimum fuel processing and without any engine modification*" carried out by the students - Joynel Pinto, Aldrin J Nazareth, Jayadeva P Y and Anston Cleevan Pais under the guidance of Dr. Raju K and Mr. Sushanth H G.

Additionally, the work of students - Khalid Mohammed, Abdul Razaak, Mohammed Zohair and Rolwin Winston Carlo on

'*Multi Functional Andriod controlled robotic arm for cutting drilling and Cleaning operation'* was awarded as the Innovative project of the year which was guided by Mr Sharun Mendonca.

First Prize Winners: *Design and fabrication of Areca nut Processing Unit*

Second Prize Winners: *Investigation of Vateria Indica Biofuel with minimum fuel processing and without any engine modification*

Innovative Project: *Multi Functional Andriod controlled robotic arm for cutting drilling and Cleaning operation*

NBA EXPERT TEAM VISIT FOR RE-ACCREDITATION

October 14-16, 2016

The BE Mechanical Engineering programme along with the bachelors programme of CS, E&E and ECE have been re-accreditated by National Board of Accreditation (NBA), New Delhi, for a period of three years from July 2016 to June 2019. The four programs were first accredited by NBA, in November 2013.

The NBA Expert Team had visited the college from 14th to 16thOctober 2016 and rigorously assessed various aspects at the institute level and within various departments. The infrastructure, facilities, faculty qualification and contribution, students performances, etc. were the evaluation criteria amongst many that has been assessed.

The expert team have appreciated the Infrastructure, Management, Faculty, Student Contributions and Outcome-Based Education (OBE) practices adopted in the college.

FACULTY ACHIEVEMENTS

01 PHD AWARDED

01 PATENT PUBLISHED

35 PUBLICATIONS

10 DISTINGUISHED AWARDS

Dr Binu K.G. has been awarded Doctor of Philosophy for his thesis titled "THEORETICAL AND EXPERIMENTAL STUDY OF THE INFLUENCE OF NANOPARTICLES IN FLUID FILM LUBRICATION" by Manipal University on *10th June 2017*.

Dr Purushothama Chippar's invention titled 'AIRCRAFT PROGNOSTIC SYSTEMS AND METHODS FOR DETERMINING ADAPTIVE TIME BETWEEN OVERHAUL, FOR LINE REPLACEABLE UNITS' is published in US patent office journal on *15th December 2016.*

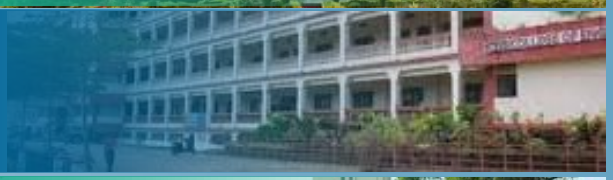
Mr Sharun Mendinca has been awarded for the "Young Mechanical Engineer Award-2016" for his contribution to the field of Mechanical Engineering on Engineers' Day on *15th September 2016*.

Mr Noel Deepak Shiri and Mechanical Engineering students had participated and won the First place in the "Engineering Student Project Exhibition" held in Pilikula Regional Science Centre on the occasion of "National Science Day – Make in India: Science & Technology Driven Innovations" on *28th February 2016*.

FACULTY INTERACTIONS WITH OUTSIDE WORLD

Dr Shreeranga Bhat
Delivered a technical talk on "Design of Experiments"
@ K.V.G College of Engineering, Mangaluru
28th April 2017

Dr James Valder
Delivered a technical talk on "Metal Forming Process"
@ K.V.G College of Engineering, Sullia
18th March 2017



Dr Shreeranga Bhat
Delivered talk on "Productivity Enhancement in a Traditional Small Scale Industry-Application of Six Sigma Strategy"
2nd International Conference on Statistics for Twenty-First Century (ICSTC-2016)
@ Department of Statistics, University of Kerala, Trivandrum
21st to 23rd December 2016

Dr Shreeranga Bhat
Delivered lecture on "Lean Thinking for Productivity Improvement"
FDP - "Entrepreneurship for Academicians" (sponsored by NSTEDB, DST, New Delhi and EDI, Ahmedabad)
@ S.D.M. Institute of Technology, Ujire
19th to 31st December 2016

Mr Sharun Mendonca & Mr Rudolf D'Souza
Conducted theory classes on 'Air condition & Refrigeration' and 'Industrial Safety'
@ RUSEMP Community College, Pakshikere
29th September 2016

Mr Pruthvi Loy Serrao
Delivered a session titled "Knowledge Sharing through Blogging"
FDP - Vikasana
@ Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Udupi
18th & 19th July 2016

Dr Shreeranga Bhat
Delivered lecture on "Design of Experiments, and Taguchi's Methodology"
FDP - Applications of Statistical and Neural Network Techniques in Engineering
@ Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Udupi
6th to 7th of June 2016

Dr Sudheer M
Chaired a session in the international conference on Emerging Trends in Engineering (ICETE-2016)
@ NMAM Institute of Technology
12th and 13th May 2016.

OTHER EVENTS

Faculty	Event	Venue	Date
Mr Rolvin & Mr Pruthvi Loy	Judges for Project Exhibition	SIT, Mangaluru	3rd May 2017
Dr Shreeranga Bhat	Evaluated the event 'Vision -2017' in DYNAMECH-2017	KVGCE, Sullia	28th April 2017
Dr Raju K	Evaluated an Inter College Technical Fest "Enigma 2K17	BIT, Mangaluru	07th April 2017
Mr Sushanth H.G.	Session on 'Problems regarding interview techniques'	NIIT, Ramanagar	28th Nov 2016
Dr Raju K	Evaluated an Intra College Technical Projects Fest	SCEM, Mangaluru	30th April 2016
Mr Vijay V S	Judging panel of Envision-16 (National level Tech Fest)	SIT, Mangaluru	17th Feb 2016

FDP'S, WORKSHOPS & CONFERENCES ATTENDED

Dr Sudheer M, Dr Raju K, Dr Shreeranga Bhat, Dr James Valder, Dr Purushothama C, Mr Binu K G, Mr ChiranthB P, Mr John Vas, Mr Neil Vaz, Mr Pavana Kumara B, Ms Ramya M, Mr Ravikantha Prabhu, Mr Sampath Kumar, Mr Sharun Mendonca, Mr Vinnothan K, Mr Yathish K, Mr Swaraj Lewis, Mr Vijay V S, Mr Noel Shiri, Mr Sushanth H G, Mr Orville Sutari, Mr Rahul Kumar, Mr Poornesh M, Mr Manjunatha B , Mr Karthik M, Mr Rudolf D'Souza, Mr Prathviraj H, Mr Ashwin Shetty has attended Workshop on OBE and New SAR, Integra – 2016 held on 21st January 2016 at St Joseph Engineering College, Mangaluru.

Mr Pavana Kumara B attended the National Conference on "*Advances in Mechanical Engineering Sciences*" held on 6th and 7th May 2016 at Srinivas Institute of Technology, Valachil, Mangaluru.

Mr Yathish Kumar and Mr Neil Vaz attended a National level short course on "*Application of Tribology in engineering and health science*" held from 19th to 21st May 2016 at Manipal Institute of Technology, Manipal.

Mr Ravikantha Prabhu and Mr Sharun Mendonca has participated in Two day faculty development program on "*Application of Statistical and Neural Network Techniques in Engineering*" held from 6th to 7th June 2016 at Shri Madhwa Vadiraja Institute of technology and Management, Bantakal.

Dr Purushothama Chippar and Mr Sushanth H G attended a summer course on "*Applied CFD and Finite Element Analysis Using Ansys*" held from 4th July to 13th July 2016 at Manipal Institute of Technology, Manipal.

Mr Yathish Kumar K has participated in the five days workshop on "*Advanced Simulation using MATLAB*" held at St Joseph Engineering College, Mangaluru during July 18-22, 2016 organized by Dept of E&C Engg, in association with CoreEL Technologies, Bengaluru.

Dr James Valder attended two days National Conference on "*Futuristic Advancements in Mechanical Engineering*" held on 8th and 9th August 2016 at College of Engineering Thalassery, Kerala.

Mr Pavana Kumara B, Mr Karthik Madhyastha, Mr Jaganesh G C and Mr Joel Concessao has participated in a two days workshop on "*Tribology Frontiers in Design & Manufacturing*" from 24th to 25th October 2016 at National Institute of Technology Karnataka, Surathkal.

Mr Mark G Rosario and Mr Anil Prashanth Rodrigues has participated in five days Faculty Development Programme on "PLC, HMI, SCADA, DRIVE, ANALOG MODULE" from 12th to 16th December 2016 at Manipal Institute of Technology, Manipal.

Dr Sudheer M has attended a course on "*Hybrid Composites: Manufacturing, Mechanics and Materials*" from 18th to 22nd December 2016 at National Institute of Technology Karnataka, Surathkal.

Dr Shreeranga Bhat has participated in the Fourth International Conference on '*Transformation in Engineering Education*' held during January 6-8, 2017 at Vardhaman College of Engineering, Hyderabad, India as a DELEGATE.

Mr Binu K G has attended a workshop on '*Linear Algebra and its application*' and '*Statistics and Queuing theory*' on 7th January 2017 at St Joseph Engineering College, Vamanjoor, Mangaluru.

Mr Noel Deepak Shiri, Mr Naveen R, Mr Karthik Madyastha, Mr Pvana Kumara B, Mr John Paul Vas, Dr Raju K, Mr Sharun Mendonca, Mr Alister G Dsouza, Mr Chiranth B P, Mr Ravikantha Prabhu, Mr Pruthviraj H, Mr Rolvin D'silva, Mr James Valder, Mr Sudheer M, Mr Sampath Kumar, Mr Ashwin Shetty, Dr. Purushothama Chippar, Mr Binu K G, Mr Prashanth Kumar, Mr Rudolf C Dsouza, Mr Vijay V S, Mr Pruthvi Loy Serrao, Mr Swaraj D Lewis, Ms Ramya M, Mr Vinoothan Kaliveer, Mr Poornesh M, Mr Manjunath B A, Mr Joel A D'mello, Mr Anil P Rodrigues, Mr Joel I Concessao, Mr Sudheer Kini K, Mr Naresh R has participated in the two day workshop on "*Condition Monitoring*" from 9th to 10th January 2017 at St. Joseph Engineering College, Mangaluru.

Mr Santhosh H has attended a workshop on '*Programmable Logic Controllers & SCADA*' from 9th to 11th January 2017 at St Joseph Engineering College, Vamanjoor, Mangaluru.

Mr Pavana Kumara B, Mr Karthik Madhyastha and Mr Naveen R has participated in a two days workshop on "*Theoretical and Computational Mechanics*" (TEQIP II funded) from 19th to 21st January 2017 at NMAM Institute of Technology, NITTE.

Dr. Shreeranga Bhat, Mr Rahul Kumar, Mr Santhosh H, Mr Jaganesh G C, Mr Manjunath B A, Dr Raju K, Mr Chiranth B P, Mr Vijay V S, Mr Joel Antony D'Mello, Dr Sudheer M, Ms Chaithra S V, Mr Anil P Rodrigues, Mr Joel Concessao, Mr Sudheer Kini K, Mr Naresh R, Mr Naveen R, Mr Orville Sutari has participated in the two day workshop on "*Quality Assurance in Engineering Education through OBE*" from 30th to 31st January 2017 at St. Joseph Engineering College, Vamanjoor, Mangaluru.

Mrs Ramya M and Mr Naresh R has participated in a two days workshop on "*Biofluid Dynamics and Bioheat Transfer*" (TEQIP II funded) held during 20th and 21st February 2017 at NITK, Surathkal , Mangaluru.

FACULTY PUBLICATIONS

INTERNATIONAL JOURNAL

- **Sharun Mendonca** (2016). "*Design of a Model of Power Generation System using Kites*", International Journal for Scientific Research & Development, Vol. 4, Issue 1, pp. 106-108. ISSN (online): 2321-0613.
- **Sharun Mendonca** (2016). "*Influence of injection timing on performance and combustion characteristics of simarouba biodiesel engine*", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 5, Issue 4, pp. 4865-4872. ISSN (online): 2319-8753.
- **Pruthvi Serrao**, Jagannath Nayak (2016). "*Effect of Surface Mechanical Attrition Treatment on High Temperature Oxidation of CP Titanium*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 20-24. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.04.
- **Joel Immanuel Concessao**, Jaimon D. Quadros, Vaishak N. L. (2016). "*Effect of Ageing on the Tribological Behavior of Inconel 690 Using Taguchi's Method*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 25-30. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.05.
- **Poornesh M**, Harish N, Kiran Aithal (2016). "*Mechanical and Tribological Properties of Centrifugally Cast Al-Si-SiC Composites*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 31-35. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.06.
- **Ravikantha Prabhu**, **Sharun Mendonca**, Darren, Gladson, **Thirumaleshwara Bhat** (2016). "*Mechanical and Tribological Properties of Injection Moulded Modified $CaCO_3$/PP, LDPE Composites*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 61-66. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.12.
- **Poornesh M**, Harish N, Kiran Aithal (2016). "*Study of Mechanical Properties of Aluminium Alloy Composites*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 72-76. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.14.
- **Sudheer M** (2016). "*Study of Wear Behaviour of Recycled Metal Powder Filled Epoxy Composites Using Factorial Analysis*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 82-87. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.16.
- **Noel Deepak Shiri**, **Shreeranga Bhat**, Babisha K. C., Krishna M. Moger, Minal Patricia D'almeida, Clyde Jofan Menezes (2016). "*Taguchi Analysis on the Compressive Strength behaviour of Waste Plastic-Rubber Composite Materials*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 88-93. (Scientific & Academic publisher), DOI:10.5923/c.materials.201601.17.
- Sanjay K. C., Shreyas, Vinol Pinto, Sheikh Shoaib Abdul Gafoor, Thilak Biju, **K. Raju** (2016). "*Effect of Alumina Nanoparticles on the Performance and Emission Characteristics of CI Engine Fuelled with Lard Oil Methyl Ester Blends*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 94-98. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.18.
- Rijesh M., **James Valder**, Jithin D., Dileep C. R., Abin R. N., Shibin F., Havila M. M. (2016). "*Production of Al-Al_2O_3 MMC by P/M Route and to Study the Feasibility of Fusion Welding*", American Journal of Materials Science, Vol. 6, No. 4A, pp. 99-101. (Scientific & Academic Publisher), DOI:10.5923/c.materials.201601.19.
- **Manjunath B. A.**, Sabeel Ahmed K., Sreepathi L. K. (2016). "*Design and Fabrication of Pongamia Pinnata Decorticator*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 1-7. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.01.
- **Pruthvi Serrao**, **Ravikanth Prabhu**, **Chiranth B. P.**, Yazid Mohammed (2016). "*Application of Taguchi Method to Predict the Abrasive Wear Behavior of CP Titanium*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 13-17. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.03.
- **Sudheer M** (2016). "*Thermo-mechanical Properties of Epoxy/PTW Composites*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 18-21. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.04.
- Sushmita, Rajesh M., Hemanth K., **Ravikantha Prabhu**, Sharath Meloth C, **Binu K. G.** (2016). "*Processing and Testing of Hybrid Sandwich Composites for Vibration Damping and Mechanical Properties*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 22-27. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.05.
- **Rolvin D'Silva**, **Vinoothan K.**, **Binu K. G.**, **Thirumaleshwara Bhat**, **Raju K.** (2016). "*Effect of Titanium Dioxide and Calcium Carbonate Nano additives on the Performance and Emission Characteristics of C.I. Engine*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 28-31. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.06.
- **Shreeranga Bhat**, Jnanesh N. A., Mathew Jose (2016). "*Process and Productivity Improvement through Six Sigma: A Case Study at Production Industry*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 32-39. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.07.

- **Shreeranga Bhat**, Jnanesh N. A., Prashanth P. Kamath, Rajat R. Nayak, Nithin M. D'souza (2016). "*Enhancing the Performace of an Automobile Service Industry: Lean Thinking Approach*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 40-48. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.08.
- **Swaraj D. Lewis**, **Noel D. Shiri**, Vikesh K., Sonali C. Olivera, Vishram Konde, Prakash C. Dsouza (2016). "*Fabrication and Testing of Scaled Prototype of Hoverbike*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 71-74. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.13.
- Spoorthi Megha, Susheel Kumar N, **Rolvin D'Silva** (2016). "*Vibration Analysis of Magnetorheological Elastomer Sandwich Beam under Different Magnetic Fields*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 75-80. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.14.
- **Anil Prashanth Rodrigues**, Grynal D'Mello, Srinivasa Pai P (2016). "*Selection of Mother Wavelet for Wavelet Analysis of Vibration Signals in Machining*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 81-85. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.15.
- M. Tony, C. Johny, S. Sayooj, **K. Yathish**, **J. P. Vas** (2016). "*Design and Fabrication of Arecanut Tree Climbing and Spraying Machine*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 93-96. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.17.
- Jordan Lewis, Karthik B. M., Joswin Maxim Lobo, **James Valder**, Rijesh M. (2016). "*Fabrication of an Automated Collison Avoidance System using Ultrasonic Sensor*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 97-101. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.18.
- Rajesh A. R., **Joseph Gonsalvis**, Venugopal K. A. (2016). "*Design and Testing of Gears Operating between a Specified Center Distance Using Altered Tooth-sum Gearing (Z± Gearing)*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 102-108. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.19.
- Ramyashree A. P., **Joel A. Dmello**, Rakshith H. S., Impha Y. D., Mahammad Yunus C., Ajaygan K., Mustaqeem Raza, Mohammed Imran M. A., Harsharaj K. (2016). "*Heat Recovery from Air Conditioner*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 113-116. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.21.
- N. Amulya, PVS Subhashini, K. Chinmayi, **Naveen R.** (2016). "*Parametric Optimization of Heat Generation during Turning Operation*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 117-120. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.22.
- **Vijay V. S.**, Aravinda Bhat K., Sachin Shetty, Gurudatta N. V., Russell Sequeira (2016). "*Design and Fabrication of Heat Exchanger for Waste Heat Recovery from Exhaust Gas of Diesel Engine*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 131-137. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.25.
- Girisha N., Manikumar K. C., Manjunath H. N., **Sushanth H. Gowda**, N. Kapilan (2016). "*A Study on Effect of Alternative Refrigerant on the Performance of a Domestic Refrigerator*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 138-141. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.26.
- **K. G. Binu**, **K. Yathish**, D. S. Rao, R. Pai, B. S. Shenoy (2016). "*Static Characteristics of Journal Bearings Operating on TiO_2 Nanolubricants at Low Shear Condition*", Journal of Mechanical Engineering and Automation, Vol. 6, No. 5A, pp. 142-146. (Scientific & Academic publisher), DOI:10.5923/c.jmea.201601.27.
- **Vinoothan Kaliveer**, Prajwal Raphael Sequeira, Rayan Veneeth D'sa, Simmons Antony Dsilva, Sandeep B., **Rolvin S. D'silva** (2016). "*Investigation on the Performance and Emissions Characteristics of CI Engine Using Different Blends of Waste Cooking Oil Methyl Ester-Ethanol-Diesel Oil*", Energy and Power, Vol. 6, No. 1A, pp. 28-32. (Scientific & Academic publisher), DOI:10.5923/c.ep.201601.05.
- **Sudheer M.** (2016). "*Evaluation of abrasive wear behavior of dual ceramic whisker reinforced epoxy composites*", Materials Discovery, Vol. 6, pp. 17-27. DOI:10.1016/j.md.2017.04.002.

INTERNATIONAL CONFERENCE

- **Mr Sudheer Kini K** has presented paper titled "*Numerical analysis of fatigue crack growth in a rotating disc with bolt holes using XFEM*" during International Conference on advance in Mechanical Engineering Science (ICAMES- 17) held at P.E.S College of Engineering, Mandya on 21st -22nd April 2017.

NATIONAL CONFERENCE

- **Mr Vijay V S** presented a paper entitled "*Prediction of Failure of Journal Bearing Due To Variation of Fluid Pressure With Various SAE Grade Oils"* during 42nd National Conference on Fluid Mechanics and Fluid Power held during December 14th to 16th, 2015 at National Institute of Technology, Surathkal.
- **Mr Ravikanth Prabhu** presented a technical paper entitled "*Application of Taguchi Techniques to study the effect of Alkaline treatment & Fiber Length on mechanical properties of cocanut coir reinforced empoxy composites"* in the National Conference on "Emerging Trends in Science and Engineering (NCETSE 2017)" held on 23rd & 24th February 2017 at Shri Madwa Vadiraja Institute of Technology and Management, Vishwothama Nagar, Bantkal, Udupi.
- **Mr Rolvin S D'Silva** presented a technical paper entitled "*Influence of $CaCo_3$ nanoparticles as a fuel additive on the performance & emission characterization of C.I. Engine"* in the National Conference on "Emerging Trends in Science and Engineering (NCETSE 2017)" held on 23rd & 24th February 2017 at Shri Madwa Vadiraja Institute of Technology and Management, Vishwothama Nagar, Bantkal, Udupi.

Dr Purushothama Chippar, Associate Professor

Awarded with a grant of 13.5 Lakhs by Institute for Plasma Research, Gujarat (Department of Atomic Energy, Government of India) (2016-17).

Dr Sudheer M, Dean (SW) & HOD

Became a member for life of "The Indian Society for Advancement of Materials and Process Engineering (ISAMPE)" (L-1639) with the effect of 29.09.2016.

Has been appointed as the Dean – Student Welfare at St Joseph Engineering College, Mangaluru for a term of 3 years with effect from May, 2017.

Mr Vijay V S, Assistant Professor

Patent application filed by for the title "Efficient two Stroke Engine" published by Official Journal of the Patent Office on the date 5th February 2016.

Mr John Paul, Assistant Professor

Has been adjudged as best guide for the project titled "Production of high grade liquid fuel for U engine by thermo catalytic cracking of waste plastic" in State Level Project Competition & Exhibition "INNOVATA- 2K17" at SDMIT, Ujire on 20th May 2017.

Mr Rolvin S. D'Silva, Assistant Professor

Has been adjudged as best guide for the project titled "Effect of Copper oxide Nanoparticles on the performance and emission characteristics of C.I. Engine" in State Level Project Competition & Exhibition "INNOVATA- 2K17" at SDMIT, Ujire on 20th May 2017 .

Dr Binu K.G., Associate Professor

Secured the Best Paper Award for his research paper titled *"Dynamic Performance Characteristics of Finite Journal Bearings Operating on TiO_2 based Nanolubricants"* at the 2nd International Conference on Computational Methods in Engineering and Health Sciences 2015 held on 19th & 20th December, at Universiti Putra Malaysia, Malaysia. The paper is also co-authored by **Yathish Kumar K.**, Assistant Professor in the Department of Mechanical Engineering at SJEC.

Dr Shreeranga Bhat, Associate Professor

Has been awarded 'Master Black Belt in Six Sigma' by the Indian Statistical Institute (ISI), Bangalore after attending a two weeks training programme from 5th - 17th July 2017.

STAFF RESPONSIBILITIES - ACADEMIC YEAR 2016-17

SL.NO	Staff Names	Designation	Major Responsibilities at Department Level
1	Dr Joseph Gonsalvis	Principal	Professor, Chief Advisor - eTime 2017
2	Dr Raju K.	Professor	Head of Research, Advisor - eTime 2017
3	Dr Sudheer M	Prof. & HOD	Head of Department, Chief Advisor - eTime 2017
4	Dr James Valder	Assoc. Professor	Class Advisor III-M2 & VIII-M3
5	Dr Purushothama Chippar	Assoc. Professor	Innovation Club Coordinator, Class Advisor VI-M3, ETIME-2016 Organizing Secretary, NAIN Coordinator
6	Dr Binu K.G.	Assoc. Professor	ARC-SJEC Main Coordinator, IIC member, Valuation Center Co-ordinator, Class Advisor IV-M1
7	Dr Shreeranga Bhat	Assoc. Professor	Class Advisor VII-M2, Organizing Secretary - eTime 2017
8	Mr Sampath Kumar	Asst. Professor	Department Library In-charge, Class Advisor V-M2 & IV-M3
9	Mr Prashanth Kumar	Asst. Professor	Project Coordinator (II Shift), Class Advisor V-M1 & VIII-M1
10	Mr Rolvin S. D'Silva	Asst. Professor	Project Coordinator, Class Advisor III-M3
11	Mr Prathviraj H.	Asst. Professor	Class Committee Coordinator, Class Advisor VII-M1 & IV-M2
12	Mr Rudolf C. D'Souza	Asst. Professor	Workshop In-charge, Placement & Practical Exam Coordinator
13	Mr Vijay V S	Asst. Professor	Senior Faculty Advisor (SAE India- SJEC), Accreditation Program Coordinator, Aptitude Training Coordinator, Class Advisor V-M4
14	Mr Pruthvi Loy Serrao	Asst. Professor	MT Lab In-charge, Class Advisor III-M1
15	Mr Noel Deepak Shiri	Asst. Professor	ISTE Coordinator, Class Advisor V-M3
16	Mr Ravikantha Prabhu	Asst. Professor	Time Table & Virtual Lab Coordinator, CAMD Lab In-charge
17	Mr Sushanth H. G.	Asst. Professor	EC and HMT Lab In-charge, Class Advisor III-M4 & IV-M4
18	Mr Chiranth B. P.	Asst. Professor	IIC Main Coordinator, F&F and Machine Shop In-charge
19	Mr Neil Vaz	Asst. Professor	CAMA and CIM Lab In-charge, Class Advisor VII-M3 & VI-M1
20	Mr John Paul Vas	Asst. Professor	CAED Lab In-charge, Class Advisor I-D Section
21	Mr Sharun Mendonca	Asst. Professor	EDC- Coordinator, Class Advisor VI-M2, Time Table Coordinator
22	Mr Pavana Kumara B.	Asst. Professor	Accreditation Program Coordinator
23	Mr Swaraj D. Lewis	Asst. Professor	TORQUE – Main Coordinator
24	Mr Orville Sutari	Asst. Professor	Accreditation Program Coordinator
25	Mr Yathish Kumar K.	Asst. Professor	Faculty Advisor (ISIE, SAE India- SJEC,)
26	Ms Ramya M.	Asst. Professor	Placement Coordinator
27	Mr Karthik Madhyastha	Asst. Professor	Torque Member, Alumni Association Member
28	Mr Vinoothan Kaliveer	Asst. Professor	ALOHA-2017 Coordinator
29	Mr Ashwin Shetty	Asst. Professor	Alumni Coordinator
30	Mr Poornesh M	Asst. Professor	First Year Accreditation Program Coordinator, TORQUE – Coor-dinator, TIARA Department Coordinator
31	Mr Rahul Kumar	Asst. Professor	Aptitude Training Coordinator, ARC-SJEC Coordinator
32	Mr Manjunath B A	Asst. Professor	EMS- Coordinator
33	Mr Santhosh H	Asst. Professor	ARC-SJEC Coordinator
34	Ms Chaithra S V	Asst. Professor	ARC-SJEC Coordinator, Jagruthi Committee Member
35	Mr Naveen R	Asst. Professor	ISIE-Faculty Advisor

Sl. No.	Staff Names	Designation	Major Responsibilities at Department Level
36	Mr Alister Gleason D'souza	Asst. Professor	Sports Coordinator, Cultural Coordinator, Class Advisor VI-M4,
37	Mr Joel Antony D'mello	Asst. Professor	Project Coordinator , Class Advisor VII-M4 & VIII-M4
38	Mr Anil Rodrigues	Asst. Professor	Sports Committee Member
39	Mr Joel Concessao	Asst. Professor	ISTE Coordinator, EDC Coordinator, Placement Coordinator
40	Mr Sudheer Kini K	Asst. Professor	CCC Coordinator
41	Mr Jaganesh G C	Asst. Professor	EMS-Coordinator
42	Mr Naresh R	Asst. Professor	NIRF Coordinator, Jagruthi Committee Member
43	Mr Vikas Anand	Asst. Professor	ISIE-Faculty Member

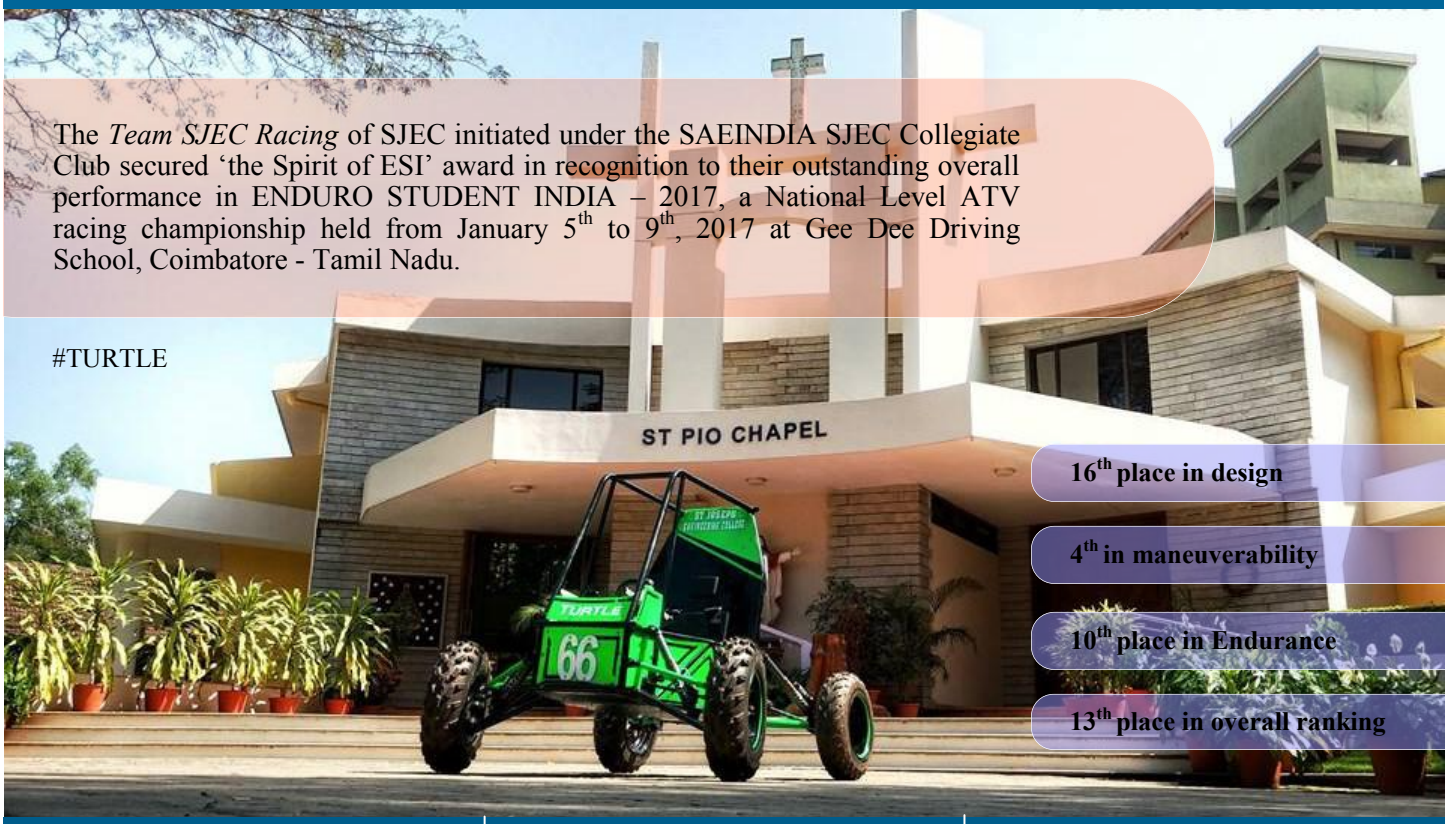
TECHNICAL STAFF - ACADEMIC YEAR 2016-17

SL.NO	STAFF NAMES	DESIGNATION
1	Mr Lawrence L. Pinto	Workshop Supervisor
2	Mr James Manoj Mascarenhas	Foreman
3	Mr Christopher Cutinha	Lab Instructor
4	Mr Janardhan Acharya	Lab Instructor
5	Mr Harshith	Lab Instructor
6	Ms Jayashri	Lab Instructor
7	Mr Sinoj M R	Lab Instructor
8	Mr Rajesh	Lab Instructor
9	Mr Rajesha A	Lab Instructor
10	Mr Immanuel J Amanna	Lab Assistant
11	Mr Santosh Praveen Veigas	Technician
12	Mr Gunakara	Technician
13	Mr Preethesh	Technician
14	Mr Pranoy X. D'Cunha	Technician
15	Mr Praveen G. D'Souza	Mechanic
16	Mr Bhasker	Jr. Technician
17	Mr Minin D'Souza	Plumber cum welder

ADMINISTRATIVE STAFF - ACADEMIC YEAR 2016-17

SL.NO	STAFF NAMES	DESIGNATION
1	Ms Divya Miranda	Jr. Asst. Clerk
2	Mr Franklin D'Souza	Attender
3	Mr Charles Fernandes	Attender

STUDENT ACHIEVEMENTS



The *Team SJEC Racing* of SJEC initiated under the SAEINDIA SJEC Collegiate Club secured 'the Spirit of ESI' award in recognition to their outstanding overall performance in ENDURO STUDENT INDIA – 2017, a National Level ATV racing championship held from January 5th to 9th, 2017 at Gee Dee Driving School, Coimbatore - Tamil Nadu.

#TURTLE

16th place in design

4th in maneuverability

10th place in Endurance

13th place in overall ranking

The Robo war teams of SJEC have performed exceptionally well at the technical fest of several engineering colleges. They have won awards at the technical fest of the following engineering colleges:

- ◊ IIT, Madras
- ◊ BITS Pilani, Goa
- ◊ Padre Conceicao College of Engineering, Goa
- ◊ SIT, Mangaluru
- ◊ SDIT, Mangaluru

Mr Sanjay K.C. has been awarded the University Gold Medal for M.Tech CAMS. Also, Mr Yazid Mohammed and Mathew Jose have bagged the 2nd and 3rd ranks.

ARC has shown exception performance at the Magnovite - Fest of Faculty of Engineering, Christ University, B'lore and won 5 prizes along with Championship award.

Team **AIRBORNE** secured All India 2nd place in the Final Round of Manovegam – an Aero Design Competition organized by SAEINDIA, Bengaluru section and Aerospace Board of SAEINDIA. The event was held on 14th and 15th April, 2017 at Siddaganga Institute of Technology – Tumkur.

Team **ASTRO** secured 12th overall ranking (1st in Karnataka) in SAEINDIA Aero Design Challenge 2017 under Regular Class Aircraft (RCA) held at Anna University, Chennai during June 2017.

CLASS TOPPERS - ACADEMIC YEAR 2015/16

BE - 4th Year

Shreyas (78.6%)

Sharath M.C (78.4%)

BE - 3rd Year

Darshan C (78%)

Nithesh K.S (77.2%)

Krisantha Pais (77.2%)

BE - 2nd Year

Naveen Fernandes (83.9%)

Naoman Khan (82.1%)

BE - 1st Year

Deekshith (9.29 CGPA)

Joswin P.R. (8.96 CGPA)

Pratheek A (8.96 CGPA)

Prithesh K (8.96 CGPA)

M.Tech (CAMS)

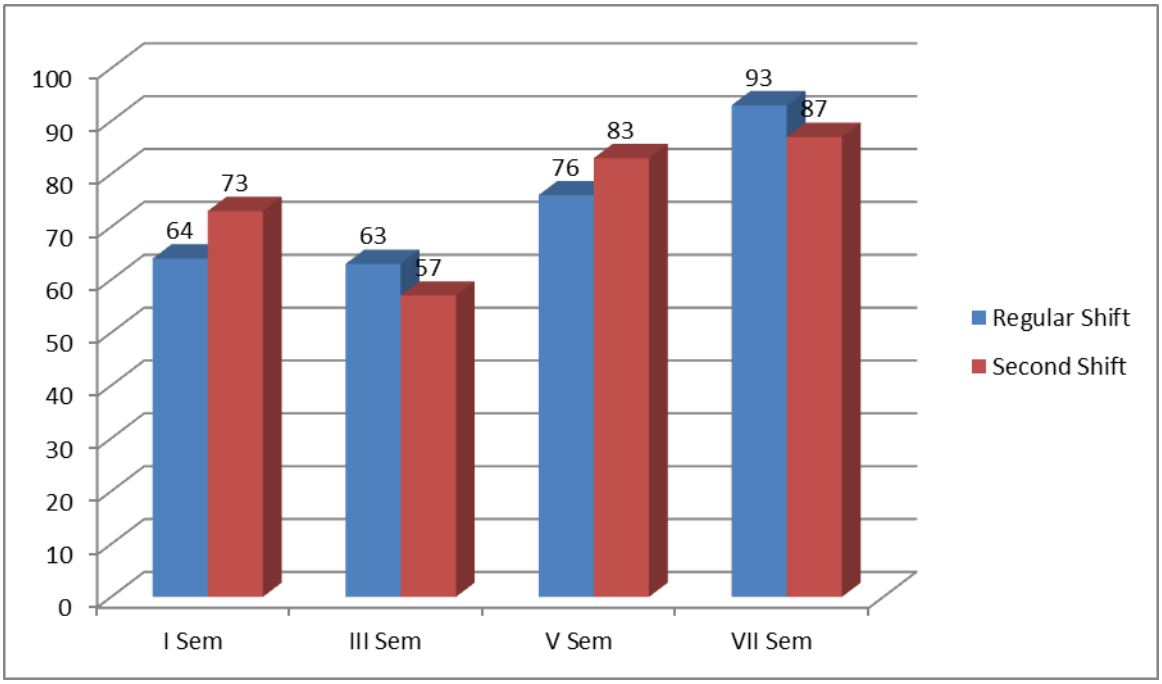
Sanjay K.C (77.54%)

Yazid Mohammed (75.9%)

Mathew Jose (71.42%)

ODD SEMESTER EXAMINATION RESULTS - ACADEMIC YEAR 2016/17

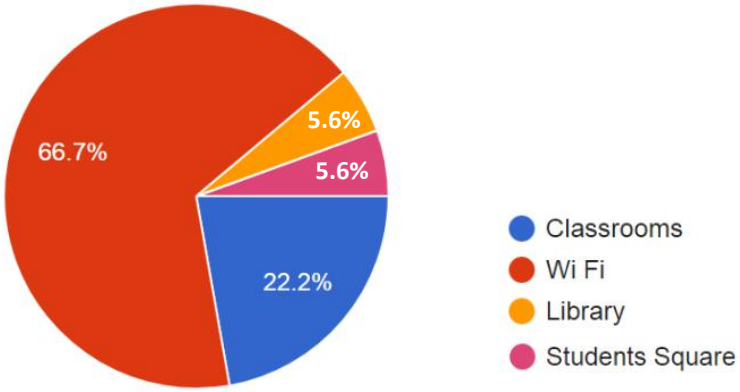
Semester	Regular Shift		Second Shift		Total	
	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam	Appeared in exam	Passed the exam
I	119	76	37	27	156	103
III	158	99	49	28	207	127
V	134	102	41	34	175	136
VII	149	138	55	48	204	186



Pass percentage of students

OPINION POLL

The Best Facility Provided at the SJEC campus.



* the above statistics are based on responses obtained from Josephites through an online survey.

COCURRICULAR & EXTRACURRICULAR ACHIEVEMENTS - 2016/17

1st place in "Engineering Student Project Exhibition"	Students of Mechanical Department
"National Science Day – Make in India: Science & Technology Driven Innovations"	
Pilikula Regional Science Centre, Mangaluru	28th February 2016
1st place for poster presentation	Mr Aravind Bhat & Mr Sachin Shetty
Jnanasangama 2017 - A national level student conference	
VCET, Puttur	3rd May 2016
ISTE Best Student Award – 2016	Mr Sandeep B
"E-PRAVARTHANA-2K16" (13th State Level ISTE Students Annual Convention)	
JSS Academy of Technical Education, Bengaluru	25th August 2016
2nd place in ROBOWARS	Mr Akshay Veigas
TECHNOY - the annual technical event	
Padre Conceicao College of Engineering, Goa	6th and 7th October 2016
Overall championship	Students of Mechanical Department
Technidarshan'16 – a technical fest	
NMAM Institute of Technology (NITTE), Karkala	22nd to 24th October 2016
2nd place in FIFA	Mr Akash Rai
AEROPHILIA 2017 - a National Level Modelling Competition	
Sahyadri College of Engineering and Management, Mangaluru	27th & 28th January 2017
1st and 2nd place in METAL COMBAT 1.0	Students of Mechanical Department
VARNOTHSAVA - an intercollegiate techno cultural fest	
Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal	16th February 2017
1st place in ROBOWARS	Students of Mechanical Department
Sambhram'17	
Shree Devi Institute of Technology, Kenjar	22nd & 23rd February 2017
2nd place in ROBOWARS	Students of Mechanical Department
ENVISION 2K17 - a National level festival	
S.I.T, Mangaluru	27th & 28th February 2017
1st in "Paper expose, Detach & Construct" & 2nd in "Eureka"	Students of Mechanical Department
Magnovite v6.0 - the annual Techno-Cultural Fest	
Faculty of Engineering, Christ University, Bengaluru	2nd March 2017

1st in Urban Planning & 2nd in Bridge Design & Fabrication	Students of Mechanical Department
Magnovite v6.0 - the annual Techno-Cultural Fest	
Faculty of Engineering, Christ University, Bengaluru	3rd March 2017

Championship Award for Robowars	Shreedhara, Vikas, Venkatesh M. & Vignesh Kamath
Shaastra Robowars - National Level Robowar Competition	
IIT - Madras	

2nd place in Group Song (WESTERN) event	Mr Galvin Gain Fernandes, Mr Brian Nicholas Rego
YUVA KALANJALI 2016/17 - 17th VTU festival	
Sir. M. Visvesvaraya Institute of Technology, Bengaluru	16th to 19th March 2017

"Championship" in Chess, 5th Place for Men's chess team	Ms Chrisel Ann Pais and Mr Goutham
VTU Rest of Bangaluru Chess Championship	
SJMIT, Chitradurga	20th to 23rd April 2017.

2nd place in Contraption	Mr Akshay Veigas
Quark'17-Shifting Paradigms	
BITS Pilani, K.K. Birla Goa campus	4th January 2017

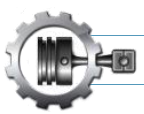
1st position in ROBO RACE	Students of Mechanical Department
Quark'17-Shifting Paradigms	
BITS Pilani, K.K. Birla Goa campus	3rd to 5th February 2017

2nd place in regular class Aero Championship	Students of Mechanical Department
"MANOVEGAM AERO CHAMPIONSHIP 2017" organized by SAEINDIA Bengaluru section & SAEINDIA Aerospace	
Siddaganga Institute of Technology, Tumakuru	14th & 15th April 2017

13th Overall Rank, and "Spirit of ESI" award	SJEC RACING of SAEINDIA-SJEC Collegiate Club
ENDURO STUDENT INDIA- 2017	
Gee Dee Driving School, Coimbatore	5th to 9th January 2017

18th All India Ranking and 1st place in South India	SJEC RACING of SAEINDIA-SJEC Collegiate Club
VIRTUAL ROUND of BAJA SAEINDIA STUDENT – 2017	
Indore, M.P.	24th & 25th July 2016

47th All India Rank (3rd in State), 26th in Endurance (1st in state)	SJEC RACING of SAEINDIA-SJEC Collegiate Club
BAJA SAEINDIA 2017 (Final Round)	
NATRIP facility, Pithampur, Indore	15th & 19th February 2017



The first IC engine was invented in 1680, but they were not used to power automobiles until the late 1800s.

LIST OF STUDENT PROJECTS - ACADEMIC YEAR 2016/17

Thermal Stream	
Sl. No.	**Project Title**
1	Aero blended ethanol for IC Engines
2	Study on Performance and emission characteristics of diesel engine using waste cooking oil methyl ester and ethanol
3	Feasibility study of conversion of waste cooking oil to biodiesel
4	Oil extraction from oil spills using the principle of MR Fluid
5	Production of high grade liquid fuel for IC Engine by thermo catalytic cracking of waste plastic
6	A study on the injection pressure on performance and emission characteristics of CI engine with blends of MME
7	optimisation of copper oxide nano particles in B 20 Blend
8	Investigation of vateria indica bio fuel with minimum fuel processing and without any engine modification
9	CFD analysis and heat transfer in ceramic pebble bed in extraction of tritium
10	Modelling and optimisation of heat exchanger design for efficient heat transfer
11	Performance characteristics of pyrolysis fuel on VCR engine
12	Performance of diesel at high temperature

Design Stream	
Sl. No.	**Project Title**
1	Generation of Electricity from solar energy using Fresnel Lens
2	Spiral Wind mill
3	Design and fabrication of turbo jet engine
4	Design and fabrication of Air Powered engine
5	Design, Analysis & Fabrication of double stage helical gear box
6	Fabrication of Crop Cutter for multi purpose application
7	Design and fabrication of pneumatically powered human exoskeleton arm
8	Design and fabrication of Areca nut processing unit
9	Automated solar powered lawn mover
10	Brick Wall building machine
11	Wall Plastering Machine
12	Pedal operated sweeping machine
12	Pro electric generator
14	Magnetic Motor
15	Design and fabrication of Pneumatic sheet metal cutting machine
16	Gyroscopic stabilised platform
17	Fabrication of Economical paper recycling machine
18	Design, Analysis & Fabrication of ATV roll cage
19	Optimising the design of an helmet for a motorcycle using FEM
20	Multi functional android controlled robotic arm for drilling cutting and cleaning operation
21	Design, Analysis and fabrication of track day car
22	Design and fabrication of a CNC Plotter

23	Fabrication of Plastic Bricks
24	Fabrication and analysis of plastic extruding machine
25	Fabrication and analysis of plastic shredder cum washer
26	Design and fabrication of journal bearing test rig and analysis of MR fluids as lubricant

Materials Stream	
Sl. No.	**Project Title**
1	Processing and characterisation of natural fibre reinforced polymer matrix composites
2	Implementation of lean strategy on plywood industry
3	Fabrication and characterisation of an eco friendly biodegradable epoxy/ chitisan composite
4	Equal channel angular preening and age hardening
5	Effect of double thermal aging on hardness of AA6061+2.5% rice husk comp
6	Tribological Behaviour of Magnesium-Rear Earth alloys
7	Fabrication and analysis of bamboo fibre polymer reinforcement composite
8	Mechanical and tribological properties of silicon carbide and coconut shell ash reinforced aluninium composites
9	Fabrication and analysis of flax, jute and E glass hybrid composites using rice husk ash with epoxy resin
10	Study on mechanical properties of inorganic and bio based binders for preparation of sand core in foundry industry
11	Optimisation of FSP tool design and parameters using taguchi analysis

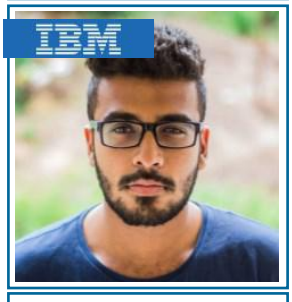
LIST OF KSCST FUNDED PROJECTS - ACADEMIC YEAR 2016/17

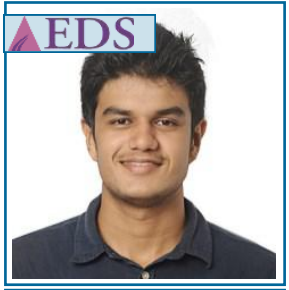
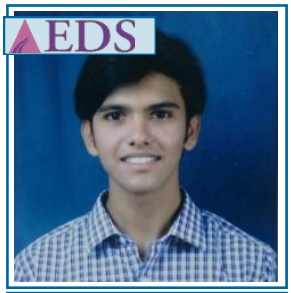
Sl No	Title of the Project	Faculty Supervisor	Student (Team Leader)	Sanctioned Amount (Rs)
1	PRODUCTION OF HIGH GRADE LIQUID FUEL FOR CL ENGINE BY THERMO-CATALYTIC CRACKING OF WASTE PLASTIC	Mr John Paul Vas Mrs Ramya M	Mr Ashlin Leroy D'Silva	8,000.00
2	AERO-BLENDING OF ETHANOL FOR INTERNAL COMBUSTION ENGINE	Dr Joseph Gonsalvis	Mr Rohan Manuel D'Souza	6,000.00
3	PADDY CLEANING MACHINE	Mr Ashwin Shetty	Mr Manish Nayak	7,000.00
4	DESIGN AND FABRICATION OF ARECANUT PROCESSING UNIT	Mr Yathish Kumar	Mr Vion Joseph Martis	8,000.00
5	EXTRACTION OF OIL FROM WATER BODIES BY THE APPLICATION OF MAGNETORHEOLOGICAL FLUID PRINCIPLE	Dr Binu K G	Mr Varun Thomas	9,000.00

PROJECTS AWARDED AT THE EXHIBITION - ACADEMIC YEAR 2016/17

Sl No	Title of the Project	Faculty Supervisor	Student	Event & Institute
1	Effect of Copper oxide Nanoparticles on the performance and emission characteristics of C.I. Engine	Mr Rolvin S. D'Silva	Mohammed Hafeez Ibrahim Abdul Rahiz Joyal Fernandez Faheem Paloth	INNOVATA 2017 SDMIT, Ujire
2	Production of high grade liquid fuel for CI engine by thermo-catalytic cracking of Waste plastic.	Mr John Paul Vas	Ashlin Leroy Dsilva Farish Demash Joshua Damien Dsa Earl Justin Serrao	INNOVATA 2017 SDMIT, Ujire

CAMPUS PLACED STUDENTS - ACADEMIC YEAR 2016/17

				
Vicky F. Vaz	Allen J. Fernandes	Ashlin L. D'Silva	Basil John	Dean S. D'Silva
				
Devaiah M S	Dilish J. Lobo	Krisantha A. Pais	Madhukar H Shetty	Nikhil K. Suvarna
				
Prajwal Shetty K S	Rahul A D'Souza	Rahul K	Roger M. Pereira	Brison S. Pinto
				
Dinaraj P	Nelroy Pereira	Sean A. Moreira	Antony Varghese	George Varghese
				
Joynel Pinto	Jeffin Tom Jacob	Zuzarte Aaron	Dinesh Kumar	Sagar Salian

				
Loy Fernandes	Mohammed Saahil	Karthik J Ghorpade	Loyson A. Noronha	Adithya C
				
Sagar S Shetty	Devaiah M S	Dilish J. Lobo	Roger M. Pereira	Mohammed Saahil
				
Darshan C	Vicky F. Vaz	Allen J. Fernandes	Madhukar H Shetty	Devaiah M S
				
Keith Royston Dsilva	Vishwas N Naik	Varun S Mallya	Venkatesh Mayya N	Shetty Gautami
				
Pritham P Rao	Rithesh Kumar	Winston Pinto	Lester D'Almeida	Rhea Dmello

The Department of Mechanical Engineering congratulates all the placed students and wishes them a successful career ahead.

India is producing 1.5 Million Engineers every year, which is twice the population of Iceland.

Placed students: *Top row* - Zuzarte Aaron, Jeffin Tom, Antony, Lester D'Almeida, Devaiah , Loy Fernandes, Winston Pinto, Dinesh Kumar, Rahul K, Prajwal Shetty. *Mid row* - George, Sagar Shetty, Brison Pinto, Dean D'silva, Nikhil Suvarna, Dilish Lobo, Roger Pereira, Allen Fernandes, Loyson Noronha. *Bottom row* - Mohammed Saahil, Nelroy Pereira, Sean Moreira, Rahul D'souza, Krisantha Pais, Rhea D'mello, Jonel Pinto, Ashlin, Darshan C.

Message

Robert Frost, in his poem "The Road Not Taken," inspires every individual to take the path less treaded. Be it as it may, Engineers give a whole new meaning to this poem. We take the path most travelled i.e., Engineering, and then we form our own unique paths always trying to defy the laws of nature. I am one such example from a million engineers out there.

Proudly joining the Mechanical Department in my first year, I have successfully transformed myself from being an amateur to, setting benchmarks as a professional. My journey of four years has taught me how to value life, how to respect each and every individual and also how to be prepared for any challenges I could come across. One such challenge would be placements. Our HOD, Dr. Sudheer M. has taken a lot of effort to ensure that all mechanical students would be job ready by the end of Engineering. With Aptitude training classes, I-Point sessions and a passionate army of Faculty, I was able to inculcate and assimilate the essential skills to face interviews, communicate effectively and work meticulously every day. My productivity, creativity and knowledge have been enhanced thanks to the opportunities I received at SJEC.

I wish the juniors good luck in their endeavours and assure them that success is not far away once you are a Josephite.

Roger M Pereira
4SO13ME095
Placed in Tech Mahindra & EDS Technologies

STUDENT ASSOCIATIONS

SAEINDIA - SJEC Collegiate Club

Established On : 5th April 2016
Student members : 150
President : Mr Dilish J. Lobo
Vice President : Mr Devaiah M.S
Secretary : Mr Roger Pereira
Treasurer : Mr Varun Thomas
Faculty in-charge : Mr Vijay V.S.
Mr Yathish K
Events took part : Baja SAE India, ESI

Achievements
Spirit of ESI, 18th rank (1st in south India) in SAE Baja Virtuals

Automation & Robotics Club, SJEC

Established On : 26th October 2016
Student members : 50
President : Mr. Vion Martis
Vice President : Mr. Uttam Bangers
Secretary : Mr. M. Hussainer
Faculty in-charge : Dr. Binu K.G.

Achievements
Overall Runner's Up at the Magnovite 2017 at Christ Univesity - Bengaluru

ISIE - Students Research Association

Established On : 30th May 2017
Student members : 64
President : Deepak Sequeira
Faculty in-charge : Mr Naveen R.
Mr Yathish K.

The Students Research Association of ISIE has just been formed towards the end of odd semester and have plans of attending various events and great aspirations of achievements for the next academic year.

Find us on Facebook
https://www.facebook.com/torquesjec/

INAUGURATION OF TORQUE

September 01, 2016

The Mechanical Engineering Department of St Joseph Engineering College – Vamanjoor, Mangaluru inaugurated the activities of its students' association - TORQUE on Thursday, September 01st, 2016, at 10:30 am in the College Kalam Auditorium in Academic Block II.

Mr Mayank Kulshreshta, Senior System Engineer, Infosys, Mangaluru was the Chief Guest of the programme. Dr Joseph Gonsalves, Principal - SJEC presided over the function. Rev Fr. Rohith D'Costa, Assistant Director - SJEC was the Guest of Honour. Dr Sudheer M, HOD of the Mechanical Engineering Department, Mr Swaraj Dominic Lewis and Mr Poornesh M, Coordinators of TORQUE, Mr Dinesh K, President & Mr Lester D'Almeida, Vice-President of TORQUE, were also present on the dais. Mr Loy Fernandes presented the annual report of TORQUE Activities for the year 2015-16.

Dr Sudheer M, welcomed the gathering and introduced the Chief Guest to the gathering. Rev. Fr. Rohith D'Costa florally welcomed the Chief Guest. The students' association was inaugurated by lighting of the lamp. Mr Lester D'Almeida welcomed the II year students to the function & gave an insight on various events conducted by the Mechanical Engineering Department under TORQUE association & urged them to volunteer & participate in them. Toppers & class representatives from all section of II year students were felicitated with gifts. The oath was administered to the association members and students by Mr Swaraj Dominic Lewis.

The Chief Guest for the day, Mr Mayank Kulshreshta, in his speech, motivated the students to try and study engineering with a different perspective and seek excellence in all the activities undertaken by them. He quoted that "Patience, purity, and perseverance are the secret of success in life" and asked everyone to strive towards achieving these fundamental qualities to overcome any obstacles in life. He urged the students to take up responsibilities to create a better environment in our society. Rev. Fr Rohith D'Costa addressed the gathering and asked the students to take active participation in the association activities and understand the prime importance of studies & related activities which will help them to excel in their career. He also congratulated SAE SJEC club on their achievement.

Dr Joseph Gonsalves, president of the function delivered the Presidential address. In his speech, Dr Gonsalvis motivated the students to participate in various activities conducted in the College and urged them to take up initiatives to shape their ideas into realities. Dr Gonsalvis also appreciated the hard work done by the SAE SJEC club in the BAJA SAE competition. Mr Dinesh proposed the vote of thanks.

TORQUE ASSOCIATION - OFFICE BEARERS

Mr Swaraj Dominic Lewis
Faculty Coordinator

Mr Poornesh M
Faculty Co-coordinator

The Association started functioning for the academic year 2016-17 with a total student strength of 92 from third and final year Mechanical Engineering. A total of 35 students had registered from final year and 55 from third year. The following students were appointed to represent as the office bearers of the Association:

NAME	USN	DESIGNATION
Dinesh Kumar K	4S013ME713	President
Lester D'Almeida	4SO13ME732	Vice President
Rajath Rao	4SO14ME088	Secretary
Nileema Pereira	4SO14ME072	Joint Secretary

The students of Torque association are appointed towards volunteering for various activities conducted in the Department. This serves as a great opportunity to develop necessary skills such as team work, leadership, event management, scheduling and planning, etc.

CORE COMMITTEE MEMBERS

Mr Naveen R

Mr Manjunath B.A

Mr Rahul Kumar

Mr Santhosh H

Mr Ashwin Shetty

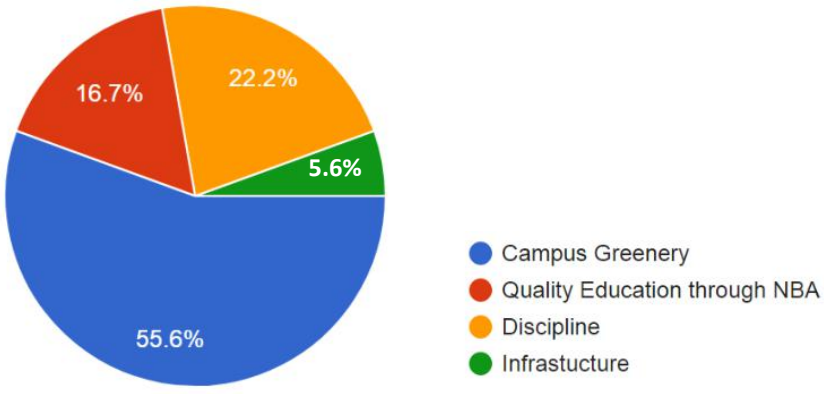
Mr Joel Concessao

Mr Karthik M

Mr Alister D'souza

OPINION POLL

The Most Valued Achievement of Our Former Director, Rev Fr Joseph Lobo.



* the above statistics are based on responses obtained from Josephites through an online survey.

Producing new steel from recycled scrap steel requires only about a quarter of energy required to produce it from iron ore.

ENGINEERS DAY CELEBRATION

September 27, 2016

The Mechanical Engineering Department and its Students Association Torque celebrated the Engineers' Day on Tuesday, 27th September, 2016, at 11:00 am in the Fr. Fred Memorial Hall. The guest of honor was Mr A V Harinath, Deputy Chief Engineer at NMPT - Mangaluru.

The inaugural function was followed by few activities conducted by the Torque association for students of Mechanical Engineering Department in showcasing the technical skills of its students.

1. Mr. Machinist - was conducted where the students had participated in Metal hunt, Assembly of Multipurpose agricultural Machine, Stacking of Nuts etc.

Results of the event:
1st Place – Ruben Anselmnetto (F section 1st year)
2nd Place – Varun Raj (1st year F section)

Judges for the particular events:
Mr Chiranth B. P and Mr Santhosh H,
Assistant Professors, Department of Mechanical Engineering.

2. CAMD-Modeling – was conducted to evaluate the designing skills & innovation in the budding engineers using Solid Edge ST6 software for design.

Results of the event:
1st Place –Vishwanath (5th Semester M3)
2nd Place – Shankara V (3rd Semester M3)

Judges for the particular events:
Mr Ravikantha Prabhu and Mr Alister G Dsouza
Assistant Professors, Department of Mechanical Engineering.

3. Technical Quiz – was conducted to test the knowledge of students in general science as well as their respective technical field.

Results of the event:
1st Place – Naveen Fernandes & Mr Royson D'cunhna (5th Semester M2)
2nd Place –Aloysius & Mr. Anson (1st year G section)

Judges for the particular events:
Mr Sushanth H. G. and Mr Manjunath B A
Assistant Professors, Department of Mechanical Engineering.

4. Sketch-IT – was conducted to examine the talent of drawing & sketching of a 3D picture of any machine related to mechanical engineering.

Results of the event:
1st Place –Aaron Dsouza (1st year E section)
2nd Place –Sameer Hussain (5th Semester M2)
3rd Place –Keshav JG (5th Semester M1)

Judges for the particular events:
Mr Pruthvi Loy Serrao and Mr Yathish Kumar K
Assistant Professors, Department of Mechanical Engineering.

5. How it works - Creating the model of mechanical Mechanisms using the thermocole.

Results of the event:
1st Place – Vineet B, Subramanya& Deepak N A (5th Semester)
2nd Place – Praveen G , Wilvin Roy and Nilima Pereira (7th Semester)

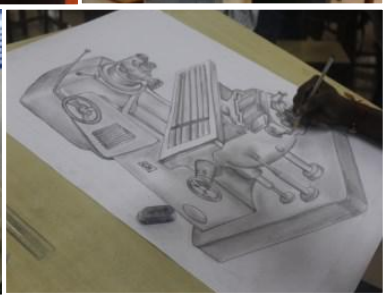
Judges for the particular events:
Dr. James Valder, Associate Professor and
Mr Pavana Kumara B, Assistant Professor
Department of Mechanical Engineering.

6. Mechanical Collage - Was conducted Where using the Newspaper Clippings collage is done on recent trends in Mechanical Engineering.

Results of the event:
1st Place – Lionel D'silva & Duane Gonsalves
(3rd Semester M1)
2nd Place – Glavin Andrade (3rd Semester M1) &
Anston Pais (7th Semester M1)

Judges for the particular events:
Dr. Raju K, and Dr Purushothama Chippar
Professor, Department of Mechanical Engineering.



The events were hosted by the Torque Coordinator Mr Swaraj Dominic Lewis, Co-coordinator Mr Poornesh M, along with President of Torque Mr Dinesh Kumar K, and Vice President Mr Lester D'Almeida, Secretary Mr. Rajath Rao and Joint Secretary Nileema Pereira.

TORQUE ACTIVITIES DURING TIARA

Inter-college technical and cultural activities were held in the Department under TIARA-2017 on 22nd & 23rd February 2017. The Torque Association had organized the following activities for the students:

- ◊ Paper Presentation
- ◊ Load Up
- ◊ Hydrocanons
- ◊ Mr Machinist
- ◊ Technical Quiz
- ◊ Robowars


Message

TORQUE - The Mechanical Engineering Students' association has successfully completed another year with lots of activities for the students in the Department as well as the external participants. The Student members in Torque develop abilities such as team leadership, team works, event management and accountability. The various activities of Torque brings liveliness and improves the interactions between students across sections. They work together as one team in organizing various events of the Association and the Department. Finally, I congratulate the outgoing batch of students from Class of 2017 for their contribution to the Association. I also look forward to the new batch of Torque members to continue the good work of the Association.

Mr Swaraj Dominic Lewis
Torque Coordinator

WHAT ARE THE ODDS?

7 THINGS THAT ARE MORE LIKELY TO HAPPEN THAN WINNING THE LOTTERY

First off, the odds of winning a lottery is around 1 in 292 million (Powerball lottery).

You would be surprised to know that you are more likely to die on the way to buy your lottery ticket than you are to win the lottery. Want to know what else is more likely to happen than wining a lottery?

- ◊ Becoming an astronaut - 1 in 12 million
- ◊ Getting attacked by a shark - 1 in 11.5 million
- ◊ Becoming US president - 1 in 10 million
- ◊ Becoming a Movie Star - 1 in 1.5 million
- ◊ Getting Struck by Lightning - 1 in a million
- ◊ Winning an Olympic gold medal - 1 in 0.6 million
- ◊ Dating a millionaire - 1 in 215

Well, now you know what's easier than winning a lottery. Go try to find one of those millionaires instead!!!

Source:

Titanium is a poor electrical conductor. Taking the conductivity of copper as 100%, Ti has a conductivity of only 3.1%.

Find us on Facebook
https://www.facebook.com/teamsjec/

INAUGURATION OF SAEINDIA - SJEC Collegiate Club | April 05, 2016

SAEINDIA – SJEC Collegiate Club affiliated to SAEINDIA Bangalore Section was inaugurated at SJEC on 5th April, 2016. Mr Javaji Munirathnam, Chairman, SAEINDIA Bangalore Section, and Founder CEO, Javaji M Consulting (P) Ltd graced the occasion as Chief Guest. Mr K. P. Murthy, Vice Chairman, SAEINDIA Bangalore Section and Strategic Consultant and Dr Joseph Gonsalvis, Principal – SJEC were the Guests of Honour. The ceremony was presided over by Rev. Fr Joseph Gonsalvis, Director – SJEC. The Inaugural Ceremony was followed by a technical talk by Mr Purushotham S Joshi, Business Development Manager - SAEINDIA Bangalore Section.

SAE - SJEC collegiate club was formed with the purpose of building an indigenous All-Terrain Vehicle (ATV) as per rules and standards of SAE.

AEROSPACE AWARENESS PROGRAM

November 24, 2016 @ 9:30AM

SAEINDIA SJEC Collegiate Club organized an Aerospace Awareness Programme in association with Society of Automotive Engineers INDIA and Aerospace Board of Bangalore Section on 24th November 2016 for students of nearby engineering colleges of Mangaluru region keeping in view the career opportunities and challenges in the Aerospace industry. The program was inaugurated by Mr Munirathnam, Chairman SAEINDIA Bangalore Section who also briefed the gathering about the objectives and activities of SAEINDIA. Mr Damodaran Subramanian, Senior Vice President, SAFRAN Engineering Services delivered the key note address on Opportunities and Challenges in Aerospace Industry. Mr. Dinesh Manoharan, Senior Manager, UCAL-JAP Systems LTD, Chennai, educated the students about construction and design of Unmanned Aerial Vehicle (UAV) and explained the guidelines of Manoveagam, a competition where students will design, build and fly an aircraft.

More than 150 students participated in the programme. Rev. Fr Rohith D'Costa, Assistant Director, presided over the function. Dr Rio D'Souza, Vice Principal was the Guest of Honour. Dr Sudheer M HOD – ME, Mr. Vijay V.S. Senior Faculty Advisor, Mr Yatish Kumar K, Additional Faculty Advisor, and Mr Dilish Joy Lobo, Student Chairman, conducted the proceedings.

Message by the President

Dream big, because dreaming small is a sin. We, the Team SJEC Racing had a dream to build a reliable, strong, dynamic and an ergonomic All Terrain Vehicle - The Turtle and today our dream has come true.

When we invest a lot on our human capital, the result would be unprecedented. This journey of building 'The Turtle' had enabled us to enhance our capabilities by working together as a team. It has been proved that if we move towards a particular direction with a clear goal in mind, we could do wonders. The Team SJEC Racing was highly motivated from day one. We worked tirelessly day and night spending sleepless nights with perseverance and determination to realize our goal. Our college supported us by providing us a platform to explore and showcase our hidden talents.

An engineer needs to be a perfect blend of theory and practice. At the time where we speak of Start Up India and Make in India, the Team SJEC Racing has led others by example. Now it's left to the successors to continue our legacy. Ten years down the line when I come back and visit my institution, I would want to see Team SJEC Racing scaling pinnacle.

Dilish Joy Lobo
President
SAE, SJEC Collegiate Club

SJEC - RACING SECURES BEST PERFORMER AWARD AT ESI 2017

January 5-9, 2017

The Team SJEC Racing of SJEC initiated under the SAEINDIA SJEC Collegiate Club secured the ***Spirit of ESI*** award in recognition to their outstanding overall performance in ENDURO STUDENT INDIA – 2017, a National Level ATV racing championship held from January 5th to 9th, 2017 at Gee Dee Driving School, Coimbatore - Tamil Nadu. They have also secured ***13th Overall ranking*** out of 99 teams bettering institutions like IIT-Hyderabad, IIT K, BITS Pilani, MIT Manipal and RVCE Bangalore.

In the event, every ATV had to pass through static, dynamic and endurance tests. Static tests include Design, Cost and Sales. Dynamic tests consist of Acceleration, Sprint, and Manoeuvrability. The ATV designed and developed exclusively by SJEC Racing Team named ***TURTLE*** achieved ***16th place in design***, ***4th in manoeuvrability*** and ***10th place in Endurance***. A final score of 683 out of 1000 points enabled SJEC to secure 13th rank. The result makes SJEC eligible for ***direct entry*** to next year's event. SJEC Congratulates the Students on this wonderful achievement.

Enduro Student India is an exclusive student design competition which has been conceived and conducted exclusively by Delta Inc. Kolkata. The rules and regulations adopted by Delta Inc. are prescribed by International standards which are publicly available in the public domain and these are the universal standards adopted by other similar events across the globe.

SJEC Racing Team was formed in April 2016 led by Mr Dilish Joy Lobo and comprises of 26 members, with the purpose building an indigenous All-Terrain Vehicle (ATV) as per rules and standards of SAE. The team had previously secured First Place in South India and 18th nationally in the SAE BAJA Virtual Design Competition held in Indore, M.P on 24th and 25th July 2016. Mr Vijay V.S. and Mr Yathish Kumar K. Assistant Professors in the Department of Mechanical Engineering are the Faculty Advisors of the Club. The Team SJEC Racing has students working in the six departments of Drive Train, Braking, Design, Suspension, Steering, and Marketing. The participation offers the students the opportunity to apply the concepts learnt in classroom and develop their own ideas and innovativeness to design and develop a fully functional state of the art ATV.

The Collegiate Club has also started SAE AERO Team, where students are building Unmanned Aerial Vehicles(UAV) or Micro Aircrafts for competetions like MANOVEGAM – 2017 organized by SAEINDIA Bangalore Section and Aero Design Challenge – 2017 organized by SAEINDIA Chennai Section. Total SAE members as of March 2017 is 150.

SJEC - AIRBORNE SECURES ALL INDIA 2ND PLACE AT MANOVEGAM

April 14-15, 2017

The TEAM SJEC - AIRBORNE participated in the Final Round of Manovegam – All India Aero Championship 2017, an Aero Design Competition organized by SAEINDIA, Bengaluru section and Aerospace Board of SAEINDIA. The event was held on 14thand 15th April, 2017 at Siddaganga Institute of Technology – Tumkur.

With great pride, we announce that the TEAM SJEC - AIRBORNE has secured ***All India 2nd Place*** out of 11 teams that participated in the Regular class (IC Engine class) from all over the country.

The Team was represented by following students of Final Year Mechanical Engineering.

NO	NAME	USN	SECTION
1	Rohan Manuel Dsouza	4SO13ME096	M2(4th YR)
2	Loyson A. Noronha	4SO13ME071	M2(4th YR)
3	Rahul Dsouza	4SO13ME089	M2(4th YR)
4	Madhukar Shetty	4SO13ME072	M2(4th YR)
5	Melon Thomas Lobo	4SO13ME075	M1(3rd YR)
6	Wilvin Roy Crasta	4SO13ME125	M2(4th YR)
7	Stephen Eric Madtha	4SO13ME108	M2(4th YR)

INAUGURATION OF ARC | October 26, 2016

ARC (Automation and Robotics Club) SJEC Club was inaugurated on Wednesday, 26th October 2016 in the Bethania Hall, SJEC.

Mr. Nithin Jose (Service Engineer/Branch Manager, SMEC Automation Pvt, Ltd. Mangaluru) was the Chief Guest and delivered technical talk on Automation and Robotics. The club presently has got 45 student members and dept. faculty Mr. Binu K G, Mr. Santhosh H, Mr Rahul Kumar and Ms. Chaithra S V guiding student on activities of the club.

"ARC is a platform for students to work in Interdisciplinary subjects like electronics, artificial intelligence and almost all fields of engineering."

Find us on Facebook
https://www.facebook.com/ARCSJEC/

The Objectives:

- Hands on training and Workshop on Automation & Robotics
- Hands on training on LabVIEW (Software & Hardware)
- Design and development of Robot and Automation Systems
- Training for participation in Robotics competitions. (WRO Olympiad, NI-Yantra, E-Yantra, Robocon India etc.)
- Technical support for Final Year Student Projects
- Working towards Industry 4.0

Message by the President

As this is the era of automation and robotics, there was a need for a students club to work towards automation and robotics in SJEC and it was also one of my dream when I joined SJEC. This dream lead me to the initiation of ARC SJEC Club.

ARC SJEC Club was a great opportunity for me to lead a team and work towards Automation and Robotics and sharing my knowledge with the team improved my abilities in this field to become an efficient engineer. It is a platform for students to work in Interdisciplinary subjects like electronics, artificial intelligence and almost all fields of engineering.

In a short period of 5 months, ARC SJEC has done great achievements by conducting events, workshops, developing various projects like attender robot, 3D Printer, Drone, UAV, etc. and participating in various competitions and wining prizes. ARC SJEC won the runner up trophy in Magnovite v6 - a technocultural Tech fest held in Christ University, Bengaluru which was a great milestone.

My short message for my juniors is to join ARC SJEC, work with interest and take part in all activities conducted by ARC SJEC and contribute in ways possible to ARC SJEC by developing innovative projects so that we can see ARC SJEC in the top place in the upcoming years.

Special thanks to Dr Binu for bringing my dream to life. Also, thanks to the faculty of Mechanical Engg Department Mr Rahul, Mr Santhosh and Ms Chaithra for being with us and guiding us in all the activities.

I would like to thank our former Director Rev Fr Joseph J Lobo, Rev Fr Rohith D'Costa - Asst. Director, Dr Joseph Gonsalves - Principal, Dr Rio D'Souza - Vice Principal, Dr Sudheer M - HOD ME and all the faculty members for supporting us in various activities.

All the best to my ARC SJEC Family.

Vion Martis
President - ARC, SJEC

COMPLETED PROJECTS

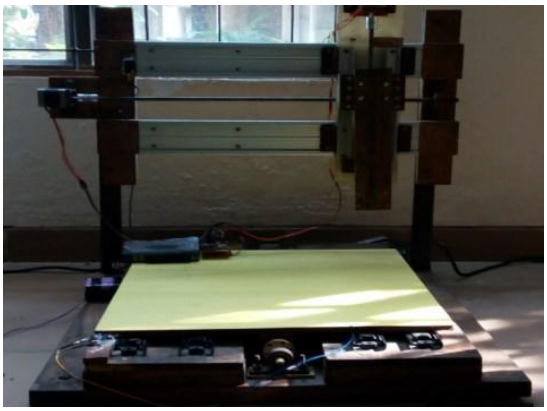
DRONE

Objectives:
- ◊ Aerial Surveillance and Mapping
- ◊ Aerial Photography and Videography

Features:
- ◊ F450 3D printed drone arms
- ◊ 850 kv brushless DC motors, 2.4GHz Transmitter and Receiver
- ◊ Mobius action camera (HD quality and live streaming 5.8 GHz AV)
- ◊ Ardupilot flight controller with GPS & Return to Home

Developed by: Vion Martis

MULTI-PURPOSE CNC MACHINE



Objectives:
- ◊ CNC Machine with different end effectors
- ◊ Integration of LabVIEW

Features:
- ◊ NI MyRIO controller
- ◊ Workspace - 470x470x470mm
- ◊ 3D Printing, Laser engrooving, Soldering, 3D Routing

Developed by: Vion Martis & Joylon Cornelio

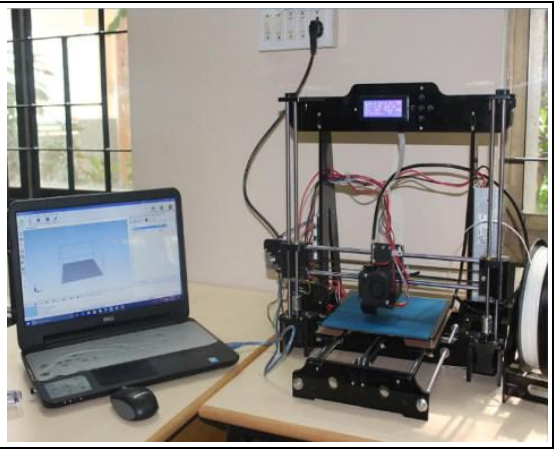
UAV-FT SPITFIRE

Objectives:
- ◊ Aerial Surveillance / Geographical Survey
- ◊ Remote Sensing

Features:
- ◊ Park 400,810 kV min / 18-30 Amp / 1800-2200 mAH 3s / 9 g servos
- ◊ Throws - 10° Deflection (Elevators/Ailerons)
- ◊ 25° (Rudder) EXPO 30%
- ◊ Weighs 766gms excluding battery

Developed by: Vion Martis, Karthik, Deekshith, Yogesh & Adarsh

3D PRINTER



Objectives:
- ◊ Rapid Prototyping of 3D models and structures
- ◊ Efficient method for manufacturing machine parts

Features:
- ◊ Prusa 13 MK2 model / 1800-2200 mAH 3s
- ◊ Printing area: 200x200x200mm / 0.02mm accuracy
- ◊ Printable materials: PLA, ABS, Wooden, Nylon, etc.
- ◊ 0.2 to 0.4 extruder up to 220 °C
- ◊ Heating bed up to 120 °C

Developed by: Vion Martis

ARC-SJEC @ MAGNOVITE 6.0

March 2-4, 2017

The ARC members have shown exception performance at the Magnovite. It is the annual techno-cultural fest organized by the Faculty of Engineering, Kengeri Campus Christ University, Bangalore, was held on 2nd, 3rd and 4th of March 2017.

Magnovite 6.0 aims at encouraging scientific innovation and knowledge of technology among the masses. "KREO, Beyond Infinity" the theme of Magnovite 6.0 is a translation of English word 'CREATION' in Esperanto language, emphasizing on the 'Technical World', evolution of technology in all disciplines.

Seven Students of Automation and Robotics Club - ARC SJEC, Department of Mechanical Engineering - SJEC had participated in this fest and have won prizes for the following events:

- ***Paper Expose-Paper Presentation***

  1st Prize won by Vion Joseph Martis and Mohammed Hussainer

- ***Eureka- Tech Expo Project Exhibition***

  2nd Prize won by Vion Joseph Martis and Shreyas SK

- ***Detach and Construct –Assembler Dissembler***

  1st Prize won by Vion Joseph Martis, Uttam Bangera, Mohammed Hussainer and Karthik V

- ***Urban Planning***

  1st Prize won by Vion Joseph Martis, Shreyas S.K., Mohammed Hussainer and Vishwanath

- ***Bridge Design and Fabrication***

  2nd Prize won by Shreyas S.K., Mohammed Hussainer, Vishwanath and Deekshith

Vion Joseph Martis was awarded with Individual Championship Award for Magnovite v6.0 for winning three 1st prizes and one 2nd prize.

" To automate is indeed to innovate "

Engineers have always found ingenious ways to reduce human interventions and overcome their physical limitations in building this new modern world. The process continues. From ghost factories of Japan to driverless cars of Tesla, automation is the future. Not withstanding the collateral of job losses and rising unemployment, automation and robotics is here to stay, and related technologies will see quantum growth in the days ahead. It is up to statesmen and society in general to negate unemployment and find avenues to engage human intellect. However, it is clear that automation will result in extinction of manual labor, and creativity and skill will be the normal for employment.

Engineering education has already caught up to this trend and is refining itself to face this new self inflicted challenge. Even though automation and robotics have been a part of previous syllabus, new terminologies such as Big Data and Internet of Things are being heard quite often. Exciting times are ahead with limitless possibilities.

SJEC has also jumped right into the fray with the induction of ARC SJEC; collegiate club of Automation and Robotics. It is a matter of pride that Department of Mechanical Engineering has taken the lead in it. It all began with Vion Joseph Martis, an exemplary student from the current outgoing Mechanical Engineering batch. It was his dream of having this club and driving his fellow mates and juniors to work on automation projects. He deserves much credits. My role as a faculty advisor is more of an oversee. That is the way it's meant to be.

Collegiate clubs are platforms for students to take responsibilities and be accountable in their work. Their participation and involvement in co-curricular activities are often seen as catalyst to their enhanced academic involvement. ARC SJEC expects the same.

In the past one year, Vion and the team has showcased stellar performance in the club with continued work on drones, 3D printer, UAV, and an attender Robot. The victories in Magnovite validates their efforts. As we move on to a new academic year, the baton is passed on to the next batch. The club bids adieu to final year members of the club. Mr Uttam and Mr Hussainer have taken over from Mr Vion and will lead the club. On behalf of the Club, I wish Vion a bright future and all success in his endeavors. He will always be welcome to the Club and his contribution as an Alumni will be much appreciated.

I look forward to seeing the next crop of sophomore members coming into the club and continuing the good work. As I said before, exciting times are ahead indeed!

Dr Binu K.G.
Faculty Advisor
ARC - SJEC


Reg.No. ISIESRA/007

ISIE INDIA
IMPERIAL SOCIETY OF INNOVATIVE ENGINEERS

IMPERIAL SOCIETY OF INNOVATIVE ENGINEERS (ISIEINDIA)

CERTIFICATE OF AFFILIATION

This is to certify that

St. JOSEPH ENGINEERING COLLEGE ISIE STUDENT RESEARCH ASSOCIATION

(SJEC-ISIE-SRA)

MANGALORE, KARNATAKA

is affiliated to

Imperial Society of Innovative Engineers (ISIE)

31/03/2017

President

Mr. Vinod K Gupta

Imperial Society of Innovative Engineers

We are promoting

Skill India

"Students of Mechanical Engineering are working on innovative and green mobility for a clean and green environment"

Message

"Better thinking, Better processes, Better technologies and More sensitivity; It's what helps us create better environment-friendly technologies and to drive your dreams".

Green Mobility is a Solution to Environmental Degradation and our students of Mechanical Engineering are working on innovative and green mobility for a clean and green environment. We believe in innovation, new ideas, devices or new methods for upcoming eco-friendly technology development. As we know Imagination gives Idea and it leads to inattentiveness.

Naveen Rajanga
Faculty Facilitator
ISIE - SJEC

INAUGURATION OF SJEC-ISIE-SRA & Two days Skill Development Program

May 30-31, 2017

On behalf of Imperial Society of Innovative Engineers (ISIE, An ISO 9001:2008 & Associate Member of FMSCI), we conducted Inauguration of Students Research Association and Two days Skill Development program (SDP) on "Solar Vehicle Design and Development" at our department. As whole mankind is suffering from crises of fossil fuels like petrol and diesel, the car which runs on solar energy is the blessing for all. ISIE gives the platform to all the engineering students of Asia to show their innovation and technical creativity in the future of automobile which is the solar car. Many industries, Ministries e.g. MHRD, MNRE and automobile industries is going to develop this platform more. The solar car i.e. affordable for all will be designed by the help of these innovative ideas in the event. Asia's Largest Solar Powered vehicle event "ISIE-Electric Solar Vehicle Championship (ESVC) 2016" Season 4 was successfully organized by Imperial Society of Innovative Engineers (ISIE) in association with Shri Vishnu Engineering College for Women at AP from 28th March 2017 to 2nd April 2017. Our aim to increase awareness among society for green and clean energy utilization and solar powered country.

The event was inaugurated on 30th May, 2017 by the Chief Guest for the inaugural ceremony, Prof Ramesh Batakurki, ISIE official – South Zone. The inaugural ceremony was held in the Spoorthi Conference Hall - 7th Floor of Academic Block-III. Rev Fr Joseph Lobo, Director – SJEC, presided over the ceremony. Rev. Fr Wilfred Prakash D'Souza, Rev. Fr Rohith D'Costa, Dr Joseph Gonsalvis – Principal SJEC and Dr Rio D'Souza – Vice Principal SJEC were the guests of honour. The dignitaries were accompanied by Dr Sudheer M, HOD – Mechanical Engineering, Mr Naveen R and Mr Yathish Kumar K – Faculty Coordinators – ISIE SJEC. The SDP was inaugurated by lighting of the lamp by the dignitaries. Dr. Sudheer M, HOD, Mechanical Engineering introduced the Chief Guest & welcomed the gathering. Mr Naveen R delivered the vote of thanks.

Chief Guest Prof Ramesh Batakurki delivered the key note address on Imperial Society of Innovative Engineers. He motivated the students to initiate awareness & responsibilities among educators and students towards solar energy and development of solar cars.

Mr Abhishek Soni, Production engineer – LAVA International was the second speaker of the programme. Mr Soni delivered a talk on Solar Vehicle design and development for two days.

The detailed schedule of the two day skill development program on Solar Vehicle Design and Development is given below:

Time	Topic
9:00 to 9:30	Inauguration of SRA and SDP
9:30 to 10:00	Guest lecture by ISIE Industrial Official
10:00 to 10:15	Introduction of ISIE
Day 1: Electrical Part of SDP	
10:30 to 14:00	Introduction of Solar car
10:30 to 14:00	Why Solar car
	Different types of Solar car
	Solar energy vs. other renewable sources
	Introduction to electrical components
	Introduction to motor
	Motor selection process
	Calculation and working of motor
15:00 to 17:30	Introduction to motor controller
	Circuit diagram & wiring of motor controller
	Introduction to Battery and its types
	Calculation of Battery
	How to manufacture Li-ion battery
	Introduction to Solar Panel
	Calculation of required solar panel power
	How to manufacture solar panel
	Use of MPPT, charge controller and fuse
Day 2: Mechanical Part of SDP	
9:00 to 14:00	Material Selection Process
	Manufacturing & Design consideration
	Chassis Analysis
	Beam Simulation (Static and Dynamic)
15:00 to 17:30	Car modeling
	Sketching on paper in supervision of expert
	Suspension Design on Lotus Shark Software
	Calculation
	Vehicle sub system Steering, Braking
	PVC Chassis fabrication welding technology
	Theory and practical approach
17:30 to 18:00	Valedictory and certificate distribution

Team ASTRO secures All India 12th Place at Aero design Challenge 2017

June 8-10, 2017

TEAM ASTRO of the SAEINDIA - SJEC Collegiate Club has secured 12th place in the **Aero design Challenge 2017** - an Aero Design Competition organized by SAEINDIA- Southern section and Centre for Aerospace Research held on 8th to 10th June 2017 at MIT Campus of Anna University, Chennai. They have secured All India 12nd place and 1st place in Karnataka out of 52 teams participated in Regular class (with Electric motor) from all over the country.

Team was represented by following students of third year ME.

NAME	USN
Akash Rai	4SO14ME703
Sushan Kumar	4SO14ME753
Dheeraj Poojary	4SO14ME717
Akshay Veigas	4SO14ME705
Srijesh B Shetty	4SO14ME752
Karthik	4SO14ME728
Jevish Fernandes	4SO14ME724

INDUSTRY INTERACTION

Invited lectures

Videoconferences

Webinars

Industrial visits

Training

Workshops

Industry Interaction Cell

Faculty Coordinators

- Chiranth BP
- Joel Concessao

Students Coordinators

- Ashwin shetty
- Ashish Rao
- Duane Gonsalvis
- Keshav
- Aditya
- Krishna Prasad

The department of Mechanical Engineering has a set up a committee to organize and arrange various activities to strengthen the Institute-Industry relationship and to expose our students to organizational, functional and technical aspects of the industry. Industry – Academia partnership is vital in promoting employability readiness of graduate engineers.

Vision Statement of IIC:

"We will strive to excel as the best Industry Interaction Cell in the academic system of this region by promoting constant interaction and co-operation between Academia and Industry".

Mission Statement of IIC:

Work towards strengthening the Department's relationship with industry through constant interaction and develop a mutually beneficial partnership.

Objectives of the Cell:

- Promote faculty and students' interaction with industry personnel.
- Offer a platform for SJEC (Mechanical Engineering) - alumni from Industry to interact with current students and faculty.
- Organize invited lectures of Industry Personnel on key specializations to address curriculum gaps (course objectives).
- Organize industrial visits for students.

MOU

V&G Industrial Testing Laboratories

July 09, 2016

About

V&G Industrial Testing Laboratorises is situated in the Baikampady Industrial Area, Mangaluru and provides specialized Non-Destructive Testing (NDT), Mechanical Testing, Civil Testing and other related inspection and consultancy services to various industries. They also conduct training classes and certification courses in NDT through well experienced NDT Level III personnel.

The Department of Mechanical Engineering at SJEC signed a Memorandum of Understanding with V&G Industrial Testing Laboratories Pvt. Ltd – Mangaluru on 9th July, 2016. The MOU relates to the training and use of Non Destructive Testing (NDT) techniques among the students and faculty of SJEC. For SJEC, the agreement was signed by Dr Sudheer M, HOD – Mechanical Engineering, Dr Joseph Gonsalvis, Principal – SJEC, and Rev. Fr Joseph Lobo, Director – SJEC. On behalf of V&G, the agreement was signed by Mr Girish Babu, Executive Director.

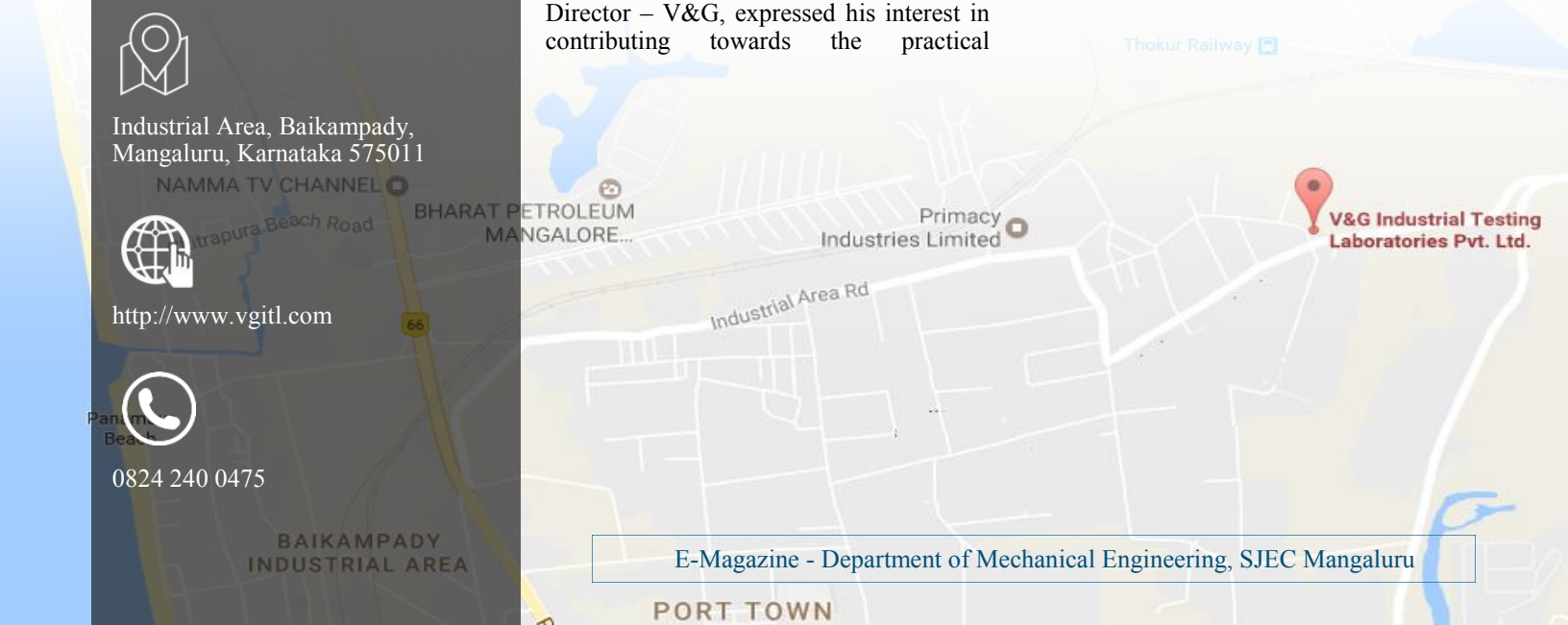
As per the agreement, the parties will work towards training the Mechanical Engineering students of SJEC towards becoming skilled NDT professionals. Dr Sudheer M, HOD – ME, opined that this MOU will work in the lines of Skill India campaign launched by the GOI to generate skilled engineers. Dr Sudheer also thanked V&G for their interest and participation in this process. Mr Girish Babu, Executive Director – V&G, expressed his interest in contributing towards the practical understanding and hands-on skills of the students in the field of structural integrity and material testing.

According to the MOU, initiatives will be taken to provide industrial exposure to not only students but also the faculty. Mr Babu also sought the expertise of the Faculty in the Department of Mechanical Engineering to provide training to employees of V&G to improve their understanding of the underlying theoretical concepts in material testing. Dr Joseph Gonsalvis, Principal – SJEC welcomed the MOU and wished the parties the very best in their future endeavors. Dr Gonsalvis also stated that this MOU is one of the many steps taken by SJEC in promoting industrial interaction and partnerships. Rev. Fr Joseph Lobo, Director – SJEC congratulated the Department of Mechanical Engineering and V&G on the ratification of this MOU and made the observation that, industrial collaborations are vital for the success of engineering education.

Industrial Area, Baikampady,
Mangaluru, Karnataka 575011

http://www.vgitl.com

0824 240 0475



INDUSTRIAL VISIT

Lamina Suspension Products Ltd.

April 25, 2017

The Industry Interaction Cell of Mechanical Engineering Department organized a one-day Industrial visit for pre -final year students to Lamina Springs Pvt. Ltd – Baikampady starting from 25th April, 2017. A total of 50 students along with two Faculty members took part in the visit. The Visit was scheduled for four days for different sections.

The main objectives of this visit are:

1. Provide an overview of the Manufacturing Processes involved in manufacturing of Leaf springs
2. Enhance knowledge on different materials used in the manufacturing processes.

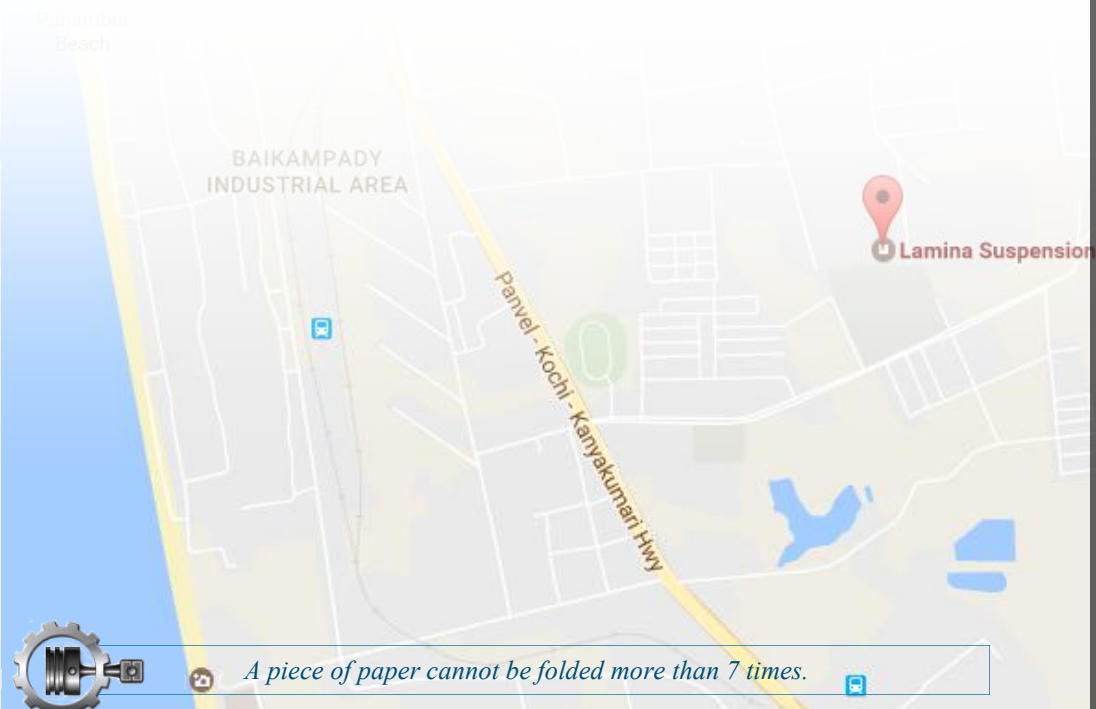
Lamina Suspension Products Ltd., are India's leading Manufacturer, Supplier, Exporter and Dealer of a wide assortment of Leaf Springs, Automobile Leaf Springs which feature higher load capacity, stability and lasting durability. They are also dealing with numerous foreign concerns across the world like USA, UK, Italy, Taiwan, South Korea, France, Saudi Arabia, Singapore, Belgium, Germany, Australia, Finland, Greece, UAE and many others.

The layout of steps followed in manufacturing of leaf springs was explained by the company supervisor. Students witnessed different process like bending, cutting, rolling, heat treatment and various other manufacturing processes.

The visit has enhanced the students' knowledge on materials and processes used in manufacturing of leaf springs. Also, various difficulties encountered in manufacturing the same were realized.

About

Lamina Suspension Products Ltd. is situated in the Baikampady Industrial Area, Mangaluru and are India's leading Manufacturer, Supplier, Exporter and Dealer of a wide assortment of Leaf Springs, Automobile Leaf Springs which feature higher load capacity, stability and lasting durability.



Industrial Area, Baikampady, Mangaluru, Karnataka 575010

http://laminasuspensionproducts.tradeindia.com

0824 - 2408679/2440556/2440561/ 2440587

A piece of paper cannot be folded more than 7 times.

INDUSTRIAL VISIT

TVS Motor Co. Ltd. Hosur

March 28, 2017

About

TVS Motor is the third largest two-wheeler manufacturer in India, with a revenue of 13,363.43 Cr INR (2016-17). The company has annual production capacity of 3.2 million 2 wheelers & 1.2 Lakh 3 wheelers.

The company has four manufacturing plants, three located in India (Hosur in Tamil Nadu, Mysore in Karnataka and Nalagarh in Himachal Pradesh) and one in Indonesia at Karawang.

Harita, Krishnagiri District, Hosur, Tamil Nadu 635109

https://www.tvsmotor.com

04344 276 780

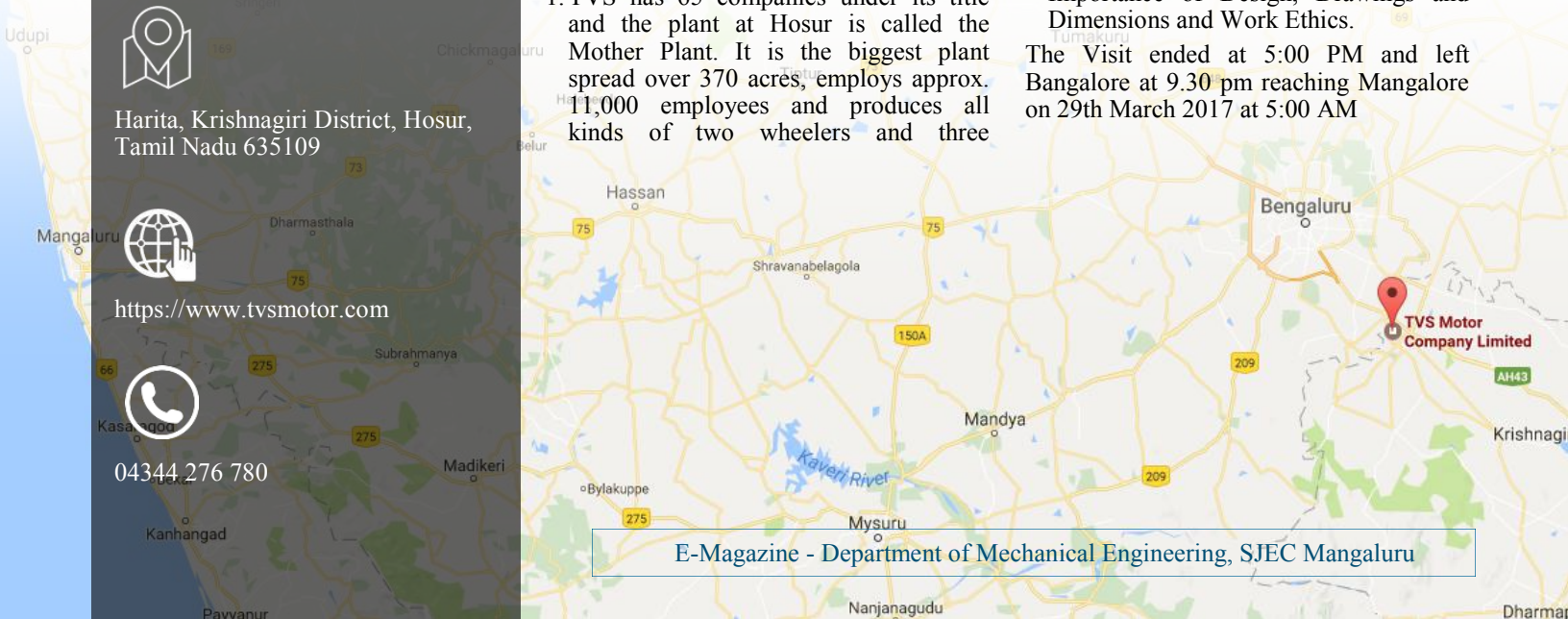
A total of 42 students from 2nd and 3rd year of Mechanical Engineering at SJEC along with two faculty members participated in a one-day industrial visit to TVS Motor Co. Ltd, Hosur on 28th March 2017.

The Team left Mangalore on 27th March 2017 at 10.00 PM and reached Bangalore on 28th March 2017 at 5.30 AM. The team first visited HAL Heritage Centre and Museum at 9.00 AM. It had a large collection of old fighter aircrafts and engines, which HAL has manufactured and developed for the past 77 years. It was an amazing experience for students to watch the jet aircrafts and engines. There was also an Audio-Visual presentation and photo gallery, which depicted the history and growth of HAL.

The Visit to TVS was scheduled for 2.00 PM. Mr Shyam Kumar P, Industrial Visit Coordinator welcomed the team and handled the visit. Some of the highlights of the visit are as follows.

1. TVS has 65 companies under its title and the plant at Hosur is called the Mother Plant. It is the biggest plant spread over 370 acres, employs approx. 11,000 employees and produces all kinds of two wheelers and three wheelers including export also.
2. There are 4 plants. Two plants for Motorcycle production, One for Scooters and Mopeds and last one for three wheelers.
3. The team visited plant no. 4 where all the Motor cycles were manufactured.
4. Total production capacity of the plant is 1800 motorcycles per day. It included TVS Star City, Victor, Sports and Apache.
5. TVS is also producing bikes which are exported to Africa and South East Asian Countries.
6. It has collaborated with BMW and producing two motorcycles, G3 and Akula. G3 is for Germany market and Akula for Indian market. Both are powered by 350 CC engines.
7. Students were able to learn and understand concepts like Automation, Practice of TQM in industries, Robotics, Assembly Process, CNC Machining, Importance of Design, Drawings and Dimensions and Work Ethics.

The Visit ended at 5:00 PM and left Bangalore at 9.30 pm reaching Mangalore on 29th March 2017 at 5:00 AM



TECHNICAL TALK

Water Management & Advances in Water Technology

April 25, 2017

The Industry Interaction Cell of the Department of Mechanical Engineering at SJEC organized a Technical Talk on Role of youth in water management and Advances in Water Technology on 25th April, 2017 at 3:30 PM in the Bishop Aloysius Paul Hall.

Mr Avin Kajekar, Management Professional and Director of Genio Management Pvt. Ltd, Mangalore, was the resource person. The objective of this programme was to motivate and create awareness among the students to play their role in water management in day to day life and to take up projects in water technology. In his talk, Mr Avin described various ways of water management and how water could be used effectively & efficiently. He also spoke of different ways of controlling usage of water in day to day life.

"The students should take up projects in water technologies"

- Mr. Avin Kajekar

Mr Avin also included in his presentation, water technologies available and different types of purifiers currently used in the world. Mr Avin also provided suggestions and ideas for students to take up projects in water technologies in their coming semesters. He also mentioned about different funding agencies that funds projects on water technology.

The outcomes of this talk were:

1. Create awareness about water management and ways of utilizing it effectively.
2. Promote knowledge on water technologies.

After the presentation, the floor was open for discussion and Mr Avin took on the queries which the students raised.

Around 57 students and 7 Departmental Faculty participated in the event.

Mr Chiranth B.P., Mr. Joel I Concessao, and Mr Binu K.G., the Faculty Coordinators of IIC along with student coordinators: Ashwin Shetty, Duane Gonsalvis, Kishan, Ashish, and Aditya organized the event.

Mr Joel Concessao was the emcee for the event.

The Industry Interaction Cell expresses its gratitude to The Management - SJEC for their support in organizing this event.

Speaker

Mr Avin Kajekar
Management Professional & Director
Genio Management Pvt. Ltd.
Mangalore

Nearly 97% of the world's water is salty or otherwise undrinkable.

INDUSTRIAL VISIT

Triveni Gears & BEML

May 27, 2017

About

Triveni Gears, Gear Business Group of Triveni Engineering & Industries Ltd., is the largest manufacturer of high speed gears and gearboxes in India for steam turbines, gas turbines, compressors, pumps, blowers as well as special purpose industry applications designed as per API, AGMA. DIN, ISO and other international standards.

Truck Division at Mysore, located around 130 Kms from Bangalore, was established in 1986 with a total area of 600 acres. Asia's biggest Dump Truck Factory in India is located at Truck Division, Mysore.

Metagalli, Mysuru, Karnataka 570003

http://www.trivenigroup.com

0821 428 6501

The Industry Interaction Cell of Mechanical Engineering Department organized a one-day Industrial visit for third year students to Triveni Gears & BEML – Mysore on 27th May, 2017. A total of 20 students along with two Faculty members took part in the visit.

The main objective of this visit was to:

1. Provide an overview of the Manufacturing Processes involved in the manufacturing of:
   a. Dump Trucks (Mechanical Drive)
   b. Dump Trucks (Electrical Drive)
   c. Water Sprinkler
   d. Motor Grader

2. Enhance the knowledge of students on different machinery used in the manufacturing of gears & dump trucks.

The layout of different assembly methods and machines used to manufacture trucks & gears was explained by the company supervisor. Students witnessed different process like assembly of engine parts, heat treatment & machining.

The visit has also enhanced the students' knowledge on automation and materials processing.

TECHNICAL TALKS

Industry Interaction Cell had conducted a Technical talk on Saturday, 08th February 2016 at 10.00 AM on the topic "Piping Engineering" by Mr Mithun Kerkera, Design Engineer, Petrocon Institute of Piping Engineering. This talk was open for the U.G students of final year Mechanical Engineering.

I.S.T.E SJEC students' chapter in association with Industry Interaction Cell (IIC) had conducted a Technical Talk on "Interactive Mechanical Engineering" by Mr Akshay Shenoy, Alumni 2013 Batch, Mechanical Engineering Department on Thursday, 03rd March 2016 at 2.30 PM. Students from 2nd year and 3rd year Mechanical Engineering had attended this talk.

Dr Shuichi Torii, Assistant Director and Professor, Kumamoto University in Japan presented in interactive seminar on topic "Nano - Fluids" for mechanical Engineering students on 31st August 2016 at 10.00 am onwards at Bethania Hall.

Mr. Nithin Jose, Service Engineer/Branch Manager, SMEC Automation Pvt, Ltd. Mangaluru delivered technical talk on topic "Automation & Robotics" for mechanical 45 students and dept. faculty Mr. Binu K G, Mr. Santhosh H, Ms. Chaithra S V and guiding student on activities of the club on 26th October 2016.

Industry Interaction Cell in Department of Mechanical Engineering conducted a Technical talk (videoconference) on Saturday, 11th March 2017 at 10.30 AM on the topic "Electrical Harness Capabilities" by Mr Bernard Raja, Delivery Readiness: DGM, EDS Technologies Pvt. Ltd, Bengaluru.

Industry Interaction Cell in Department of Mechanical Engineering conducted a Technical talk on Tuesday, 25th April 2017 at 3.30 PM on the topic "Role of youth in Water Management & Advance in Water Technology" by Mr Avin Kajekar, Management Professional, Genio Management Pvt. Ltd, Mangaluru.

A Motivational talk on "Stress Management" for the final year students of Mechanical Engineering held on Friday, 17th March 2017 at 9.00am-11.00am by Dr. Anjali Ganesh, Professor, Department of Business Administration, SJEC Vamanjoor.

INDUSTRIAL VISITS

A visit to the Total Gas Company Baikampady was organized on 6th August 2016 in association with the Placement & Training department. A total of 31 students from 3rd & 4th year participated in the visit.

A training program on "Hydraulics & Pneumatics" was organized for the interested final year students at VTU-Bosch Rexroth Center, Mysore in the month of July 2016.

Students from V semester Mechanical Engineering visited GWASF (Quality Castings), Baikampady, Mangaluru in the month of Nov 2016.

Students from VII semester Mechanical Engineering visited Varahi Hydro Electric Project, Varahi on 10th Nov 2016.

Technical Talk on "Electrical harness capabilities" by Mr Bernard Raja

Visit to Varahi Hydro Electric Project on 10th Nov 2016

Visit to Total Gas Co. Baikampady on 06th Aug 2016

INTERNSHIP TRAINING - ACADEMIC YEAR 2016/17

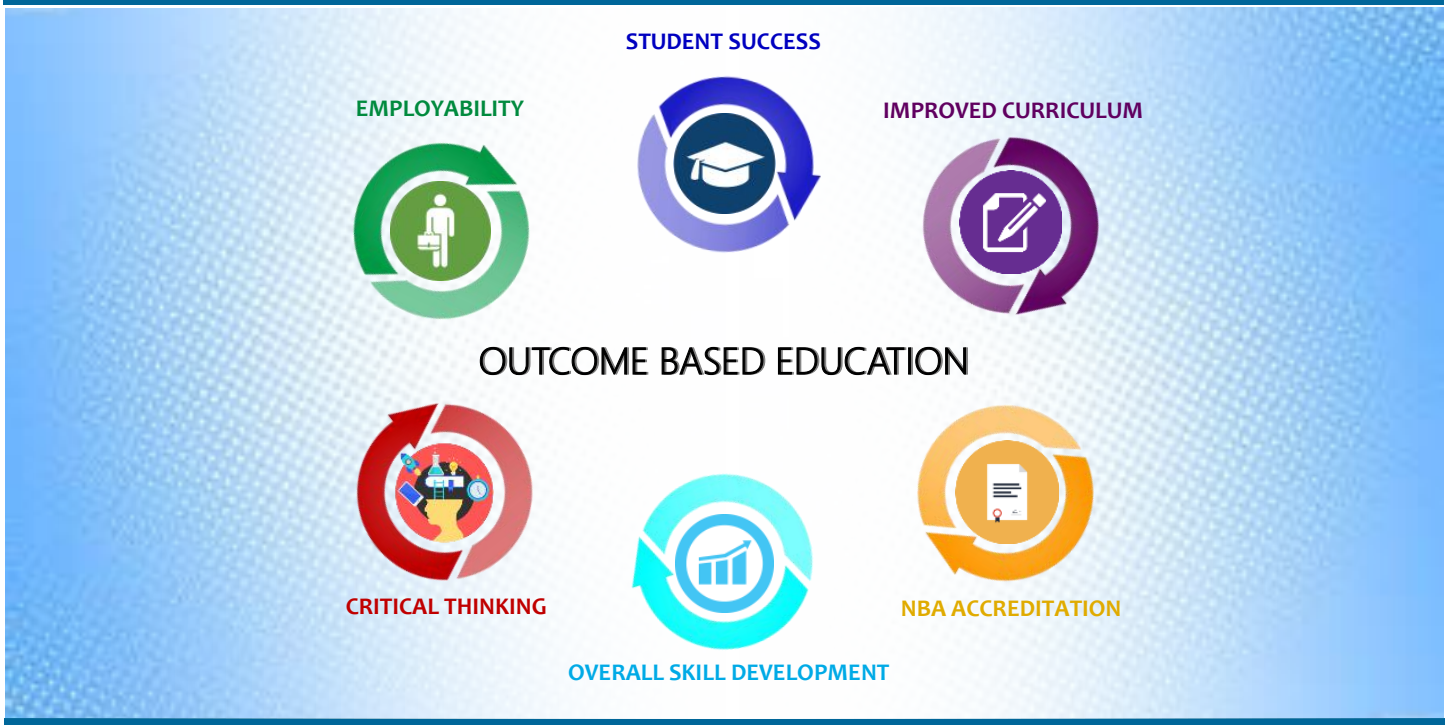
A total of 89 students form final year and pre-final year BE - Mechanical Engineering programme have attended internship training for the academic year 2016/17 in various companies listed below during the vacation breaks in the month of July and January. The internship training spanned from 1 to 3 weeks based on the companies requisite. The students were encouraged to attend the internship training in any company or industry as per the individuals interest.

List of Companies / Industries the students have completed the internship training:

Sl. No.	Company	No of Students	Duration
1	MRPL, Mangaluru	5	10 days
2	KIOCL Ltd., Mangaluru	29	6 days
3	Canara Springs, Mangaluru	2	9 days
4	New Mangalore Port Trust, Mangaluru	12	6 days
5	MCF, Mangaluru	1	5 days
6	Abharan Motors Pvt. Ltd., Mangaluru	4	6 days
7	Mandovi Motors, Mangaluru	11	8 days
8	Cauvery Motors, Mangaluru	2	7 days
9	Mahindra Motors, Mangaluru	11	11 days
10	Bharath, Mangaluru	2	6 days
11	Lamina, Mangaluru	1	6 days
12	Ford India Ltd., Mangaluru	1	12 days
13	FACT Ltd., Mangaluru	3	13 days
14	TEBMA Shipyards Ltd., Udupi	2	18 days
15	The Campco Ltd., Puttur	2	6 days
16	Aditya Birla Chemical Ltd., Karwar	2	9 days
17	Bosch, Bengaluru	2	18 days
18	Rexroth Bosch Group, Bengaluru	6	3 days
19	Ezenith, Bengaluru	6	6 days
20	BHEL Electrical Machines Ltd., Kasaragod	5	6 days
21	Cochin Shipyard Ltd., Kochi	3	11 days

* the participation certificates of the students in the internship training and the report are maintained in the department files.

OUTCOME BASED EDUCATION



Message:

"Education is pre-eminently a matter of quality, not amount" said Henry Ford. Very apposite to above quote, Department of Mechanical Engineering of St Joseph Engineering College is imparting quality education through various teaching learning methodologies. Quality is not an act, it's a habit. Quality education enables people to develop all their attributes and skills to achieve their potential as human beings and members of society. Assurance of quality and relevance of education, especially of the programmes in professional and technical disciplines is everyone's responsibility and we must never stop getting better. It's my pleasure to say that excellence of our department in providing technical education has been bestowed with status of accreditation for the period of three years by National Board of Accreditation which is an autonomous body established by AICTE.

It's my duty to acknowledge Management, Head of the Department, Staffs and Students for providing excellent co-operation in implementing outcome based education in our department during my tenure as Program Coordinator. Let us strive to achieve excellence in whatever we undertake as professionals in the coming days.

With best wishes to the E-Magazine Team…

Mr Pavana Kumara
Programme Coordinator

THE DEPARTMENT ADVISORY BOARD MEETING

The Department Advisory Board (DAB) meeting was held on Saturday, 19th November, 2016 at 10:00 am in the Department Office. The DAB is a committee consisting of representatives from the key stakeholders of the program.. The DAB is aimed at improving the quality of teaching – learning process in the department. The DAB will meet once in every year, preferably at the end of every academic year.

The Chairperson Dr Sudheer M. welcomed all the DAB members to the meeting and introduced the members to the house. Later the Program Coordinator Mr Pavana Kumara B presented a glimpse of the Mechanical Engineering Programme and briefed about the department vision, mission, outcome based education, course outcomes and programme outcomes, direct assessment tools, indirect assessment tools, PEO's to the DAB members.

The proposed actions from the Programme Assessment Committee were presented before the board members and various valuable inputs and suggestions were given. Mr Somashekaran suggested that faculties have to teach students how to apply theory into the practical. The external participants stressed on taking up initiatives to encourage students to visit nearby small scale industries so they can correlate the theoretical knowledge to practical applications and also they can respond to the social welfare towards taking up projects to benefit the local small scale industries. The alumni and parents also shared their opinion towards various aspects beneficial to students.

Sl. No.	Name	Category
1	Dr. Sudheer M	Chairperson
2	Rev. Fr. Joseph Lobo	Management Representative
3	Dr. Joseph Gonsalvis	Management Representative
4	Mr. Pavana Kumara B	Programme Coordinator
5	Mr. Vijay V S	Programme Coordinator
6	Mr Orville Sutari	Programme Coordinator
7	Dr. Raju K	Senior Faculty
8	Dr. James Valder	Senior Faculty
9	Dr. Shreeranga Bhat	Senior Faculty
10	Dr. Binu K G	Senior Faculty
11	Dr Purushothama Chippar	Senior Faculty
12	Mr Pruthvi Loy	Program Coordinator (2014-15)
13	Sri. Somashekaran S	Employer Representative
14	Mr. Ganesh	Employer Representative
15	Mr. Netson Dsouza	Alumni Representative
16	Mr. Arjun	Alumni Representative
17	Mr. Carlton S	Alumni Representative
18	Mrs. Rosy Pais	Parent Representative
19	Dr. Donald Lobo	Parent Representative
20	Mrs. Sumana	Parent Representative

THE PROGRAMME ASSESSMENT COMMITTEE MEETING

The Programme Assessment Committee (PAC) meeting for the year 2015-16 was held on 15th November 2016 at 2:30 pm in the Room No. 3303, Mechanical Dept - SJEC. The PAC is formed with the objective of interacting and maintaining the liaison with the key stake holders such as students, faculty, Alumni and parents. The PAC monitors and reviews the activities of the program.

The Meeting started at 2:30 pm and Mr. Pavana Kumara briefed about the accreditation and outcome based education. He also gave an insight on the progress of course assessment done during the semester. A detailed discussion was held regarding review of minutes and actions suggested during the previous PAC and DAB meetings, feedback on recent NBA visit, revisiting of PSOs, Course and Programme Outcome Attainment of the previous academic year, Assessment Procedure for the next academic year and Course file formats.

The committee suggested implementation of panel for review of internal test question paper and also to impose appropriate teaching learning practices in the department. It was also discussed to implement suitable measures to improve the quality of student projects, and take initiatives towards strengthening industry interaction and providing internship opportunities for students.

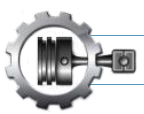
The meeting concluded at 4:00 pm.

Sl. No.	Name	Designation	Category
1	Dr. Sudheer M	Professor	HOD-ME & Module Coordinator
2	Dr. Raju K	Professor	Module Coordinator
3	Dr.James Valder	Associate Professor	Module Coordinator
4	Dr. Binu KG	Associate Professor	Module Coordinator
5	Dr.Shreeranga Bhat	Associate Professor	Module Coordinator
6	Dr Purushothama Chippar	Associate Professor	Module Coordinator
7	Mr. Prashanth Kumar	Assistant Professor	Faculty Representative
8	Mr. Prathviraj H.	Assistant Professor	Faculty Representative
9	Mr. Rolvin S D'Silva	Assistant Professor	Module Coordinator
10	Mr John Paul Vas	Assistant Professor	Module Coordinator
11	Mr. Rudolf D'Souza	Assistant Professor	Module Coordinator
12	Mr Sharun Mendonca	Assistant Professor	Module Coordinator
13	Mr. Sampath Kumar B.	Assistant Professor	Module Coordinator
14	Mr. Ravikanth Prabhu	Assistant Professor	Module Coordinator
15	Mr Pruthvi Loy Serrao	Assistant Professor	Program Coordinator (2014-15)-ME
16	Mr. Pavana Kumar B	Assistant Professor	Program Coordinator-ME
17	Mr. Vijay V S	Assistant Professor	Program Coordinator-ME
18	Mr Orville Sutari	Assistant Professor	Program Coordinator-ME
19	Mr. Lancy Pinto	Workshop Supervisor	Technical Staff Representative
20	Mr Sinoj M.R.	Lab Instructor	Technical Staff Representative
21	Mr. Christophper Cutinho	Lab Instructor	Technical Staff Representative

OBE INITIATIVES

The following are the initiatives taken during the academic year to ensure quality of learning at SJEC:

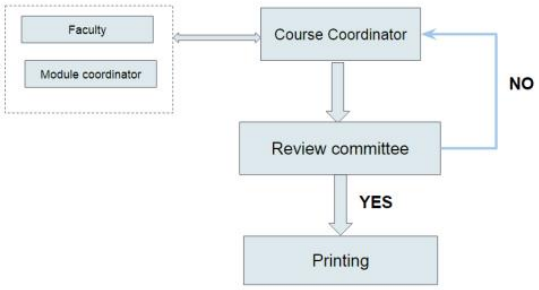
- ◊ Formation of Assessment Tool Review Committee to assess the qualities of assessment tools
- ◊ Weekly meeting of Program Coordinators to assess the progress of SAR and NBA activities
- ◊ Identify Curriculum Gaps and take actions to bridge the gap.
- ◊ Student project selection and quality assurance
- ◊ PAC and DAB meetings every semester to implement effective teaching learning practices and assess the outcomes
- ◊ Teaching Learning Forum to discuss, practice and implement effective teaching learning practices
- ◊ Webinars of IUCEE forum to learn and update knowledge of faculty members on new teaching learning practices



THE ASSESSMENT TOOL REVIEW COMMITTEE

The Assessment Tool Review Committee was formed in this academic year as per the suggestions of PAC and DAB to review all the assessment tools like Assignments, Quizzes, One minute papers, etc. including the Internal Assessment Question Paper.

All the course faculty/coordinators need to get approval from the review committee for any assessments tool used towards measuring the attainment of TLO's.



Assessment Tool Review Members 2016-17 Even semester			
Module	**Courses**		**Faculty to review**
Module 1	**Module Coordinator: Dr. Binu K. G.**		
Design Engineering	1	Design of Machine Elements II	Dr. Binu K.G Mr. Ravikantha Prabhu
	2	Kinematics of Machinery	
	3	Finite Element Methods	
Module 2	**Module Coordinator: Dr. Sudheer M.**		
Manufacturing Engineering	1	Machine Tools and Operations	Dr. Sudheer M Mr. Rudolf D'Souza
	2	Computer Integrated Manufacturing	
	3	Non-Traditional Machining (Elective)	
	4	Machine Shop	
Module 3	**Module Coordinator: Dr James Valder**		
Materials & Metallurgy Engg.	1	Mechanical Measurements & Metrology	Dr. James Valder Mr. Prathviraj H.
	2	Mech. Measurements & Metrology Lab	
	3	Mechanics of Composite Materials (Elective)	
	4	Foundry Technology (Elective)	
Module 4	**Module Coordinator: Dr Purushothama Chippar**		
Thermal & Energy Engg.	1	Applied Thermodynamics	Dr Purushothama Chippar Mr. Sampath Kumar B.
	2	Heat & Mass Transfer	
	3	Bio Mass Energy Systems (Elective)	
	4	Heat & Mass Transfer Lab	
Module 5	**Module Coordinator: Dr Purushothama Chippar**		
Fluid Engineering	1	Fluid Mechanics	Dr Purushothama Chippar Mr John Paul Vas
Module 6	**Module Coordinator: Dr. Shreeranga Bhat**		
Industrial Engineering	1	Operations Management	Dr. Shreeranga Bhat Mr Poornesh M
Module 7	**Module Coordinator: Dr. Shreeranga Bhat**		
Drawing, Measurement & Analysis	1	Computer Aided Engineering Drawing	Dr. Shreeranga Bhat Dr Sudheer M
	2	CAMA Lab	
Module 8	**Module Coordinator: Dr Raju K**		
Interdisciplinary subjects	1	Mechatronics & Microprocessor	Dr Raju K Mr. Prashanth Kumar
	2	Control Engineering	
	3	Automotive Engineering (Elective)	
	4	Rapid Prototyping (Elective)	

RESEARCH ACTIVITIES

CERG - Clean Energy Research Group

The mission of the CERG, is scientific research, technical development and education for a clean and sustainable environment. We are involved in fundamental investigation into new environmentally clean energy sources and systems via experiments and numerical simulations. CERG uses High Performance Computing facilities equipped with STAR-CCM+ and ANSYS software's for research.

ERG - Engine Research Group

Unlimited opportunities are available in areas such as power sector, automotive sector, mechatronics and pollution control. Research on internal combustion engine is important from the point of pollution control. To address this problem engine research group is formed with the main objective to provide common platform for the researcher on engines.

CSG - Composite Study Group

CSG will act as a platform for faculties and students to conduct research in the field of metal matrix and polymer matrix composites. We are moving towards setting up an in-house facility for fabrication and testing of the composites. Importance is given towards developing composites for the innovative applications.

NPSG - Nano Particles Study Group

NPSG will act a platform for the in-house faculty members and research scholars working in the field of application of nanoparticles in Mechanical Engineering. We intend to establish a team of expertise in the area of nanoparticle synthesis and applications. Currently research initiatives have be taken up towards nanoparticle additives in fuels and oils for tribological analysis.

RESEARCH CENTER

The Research Center in the Department of Mechanical Engineering explores the forefront of technologies that encompass the traditional aspects of the field while embracing and expanding the boundaries of new science and technology, thus providing an environment for advancing both education and research.

The research center was established in 2008 recognized by VTU-Belagavi with an objective to promote integrated, interdisciplinary research & education programs and expedite transition of research results into marketable products.

Areas of Research

- ◊ Energy & Sustainability
- ◊ Advanced Manufacturing
- ◊ Material Science
- ◊ Nanoparticle Science and Technology
- ◊ Engine - Combustion and Alternate Fuels
- ◊ Computational Fluid Dynamics

A spacious Research Center in the Dept. of Mechanical Engineering was blessed by Rev. Fr Joseph Lobo, Director – SJEC on 14.09.2016. The Research Center includes separate room for Research Head and Research Scholars and also a Discussion room.

Message

In line with the motto of SJEC, Mangaluru "Service and Excellence', the Department of Mechanical Engineering at SJEC has started a VTU recognized Research Center in the year 2008 to excel in research. The Research Center is involved in the state-of-the art research in various fields of Mechanical Engineering with special focus on Design & Manufacturing, Thermal and Materials Engineering. To its credit the center has produced so far one Ph.D. and four M.Sc. (Engineering by Research) degrees. Currently, sixteen Research Scholars are pursuing Ph.D. in the areas of Design and Manufacturing and Thermal Engineering under the guidance of Dr Joseph Gonsalvis, Dr Sudheer M, Dr Purushothama Chippar, Dr Shreeranga Bhat, Dr Thirumaleshwara Bhat and myself. The Research Center has secured research grants from VGST (Vision Group on Science and Technology, Bengaluru), Govt. of Karnataka and IPR (Institute of Plasma Research, Gujarat), Govt. of India. The total amount of grants received by the Research Center is Rs. 53.5 Lakhs. Spray forming and Hydrogen storage system laboratories have been set up under VGST and IPR grants for conducting research on Spray forming of Al-Si alloys and the development of metal hydride based Hydrogen storage system.

Dr Raju K.
Professor & Head - Research Center

Advanced Manufacturing Research

The Advanced Manufacturing Research in SJEC is highly interdisciplinary in nature spanning the fields of material science, heat and mass transfer, fluid dynamics and mechanical design. Current areas of investigation in the field of process innovation and development include spray forming of Al-Si based piston alloys and spray casting of Al-Si alloys with Fe and Cu as alloying elements. The equipment's currently available for advanced manufacturing research are Pin on Disc wear testing set up, LEICA Optical Microscope, Hardness Testing Machine, Melting Furnace, Probe Sonicator and Specimen Polishing Machine.

Clean Energy Research Group (CERG)

The mission of the Clean Energy Research Group (CERG), SJEC Mangalore, is scientific research, technical development and education for a clean and sustainable environment. CERG involved in fundamental investigation into new environmentally clean energy sources and systems via experiments and numerical simulations with particular emphasis on and aiming at applications in the Automotive, Aerospace and Defense, Naval, Industrial and Power grid sectors, i.e., electric/fuel cell powertrain, fuel cell APU, UAV, Air Independent Propulsion Systems (AIPS), hydrogen production and storage systems, batteries, and other non-conventional energy sources such as solar, wind etc. CERG uses High Performance Computing facilities equipped with STAR-CCM+ and ANSYS software's for research.

Ongoing Projects:

- ◊ Metal Hydride Bed for Hydrogen Storage
- ◊ Fuel Cell Modeling and Simulation

Engine Research Group (ERG)

OBJECTIVES

This group is for formed with the following objectives:

- ◊ To provide common platform for the researcher on engines.
- ◊ To share knowledge among members
- ◊ To develop innovative ideas in the research on engines
- ◊ To develop research facility on CI engine
- ◊ To increase publications on engine and renewable fuels

The Team ERG	
Chief Advisor	Dr Joseph Gonsalves
Advisory Committee	Dr K Raju Dr Sudheer M Dr Purushotham Chippar
Group Mentor	Mr Prashanth Kumar
Members (Faculty)	Mr Rolvin D Silva Mr Sharun Mandenca Mr John Paul Vas Mr Sushanth Gowda Mr Vijay V.S Mr Santhosh Mr Anil Melwin Rego Ms Ramya M

AREA OF FOCUS

- ◊ Modification of engine & fuel
- ◊ Control of engine (engine electronics)

PLAN OF ACTION

- ◊ Minor Modification in the engine
- ◊ Suggested to have collaboration with GTTC, Baikampady.
- ◊ Getting technical knowledge from the experienced technicians
- ◊ Promoting competition among the students of the region for developing innovative ideas to control pollution
- ◊ To have discussions with different patents on the engine
- ◊ In house development of controlling of engine
- ◊ To promote project ideas for undergraduate students
- ◊ To have a collection of literature on IC engines.

SHORT TERM PLAN

- ◊ Experiments with minor modification on engine
- ◊ Experiments with alternate fuels

LONG TERM PLANS

- ◊ Setting up of Automated control system for engines.
- ◊ Consultancy Services to Research scholars

EXPECTED OUTCOME

1. Build up of a collection of literature on Engine research, modification of fuels and related fields.
2. Guiding projects for undergraduate students in the field of I. C. Engines and alternate fuels.
3. Publishing journal papers/ Conference papers.
4. FDP's on Engine and fuel related issues.

WORK UNDER PROGRESS

There are 5 faculty members and 20 students involved in the research work. The research activity involved in this group is classified into three different streams.

- ◊ **Performance analysis with CRDI engine**
  Mr Prashanth Kumar has conducted study on CRDI engines with mahua methyl ester blended with diesel; different types of combustion chambers are used in the study.
- ◊ **Modification of fuel with additives**
  Mr Rovin D'silva is involved in research with nano particle blended bio-diesel on CI engine.
- ◊ **Performance analysis of conventional engine with alternate fuels**
  Mr Sushanth G is involved in study of vetira indica bio-diesel blend with diesel on CI engine.

In addition to this research on "biodiesel from waste plastic and its performance" and "Performance with preheated diesel at high temperature" is being carried out by the students under the guidance of Mr John Paul Vas and Ms Ramya M.

Nanoparticle Study Group (NPSG)

This group was formed on 13th Feb 2016 under the leadership of Dr Binu K.G. The main intention of forming this group is to bring the faculties with common research area together for discussion. Meetings were held during which the mentor briefed on topics related to nanoparticle dispersion, dispersion methods, surfactants, stability of Nanofluids and its various applications. The faculty members used to discuss about the literatures review done by them in their field of research. A few student members are also involved in the study group who have taken up project work in the field of nanoparticle science.

The Team NPSG	
Chief Advisor	Dr Sudheer M Dr Raju K
Group Mentor	Dr Binu K.G.
Members (Faculty)	Mr Rolvin D Silva Mr Sharun Mandenca Mr Yathish K.

OBJECTIVES OF THE STUDY GROUP

- ◊ Act as discussion forum for in-house faculty members and research scholars working in the field of application of nanoparticles in Mechanical Engineering.
- ◊ Develop in-house expertise in the area of nanoparticle synthesis and applications.
- ◊ Conduct student activities related to nanoparticle science, to contribute as Content beyond the syllabus.
- ◊ Define academic projects on nanoparticle applications in Mechanical Engineering for students.

EXPECTED OUTCOMES:

- ◊ Literature bank on nanoparticles and nanofluids.
  Details:
  - A Google drive account with SJEC domain will be initiated and all literature pertaining to nanoparticle science will be stored and access granted to members.
  - Relevant papers to be added by faculty members after discussion in weekly meetings.
- ◊ Teaching and assessment resources on Applications of nanofluids in Mechanical Engineering – An overview.
- ◊ List of ideas for continued research on applications of nanoparticles in mechanical engineering.

PROPOSED FUTURE ACTIVITIES:

- ◊ Contribute to FDP sessions during semester break.
- ◊ Arrange invited lectures on nanoparticle science in collaboration with Departmental Associations.
- ◊ Submit research proposals to State and National funding agencies based on on-going research of the Group Members, to build research facilities in the Department related to nanoparticle applications.
- ◊ Generate publications in the field of nanoparticle science.

PROJECT PROPOSAL SUBMITTED FOR EXTERNAL FUNDING

Dispersion and rheological studies of inorganic nanoparticle additives in oils and fuels.
(Submitted to VGST K-FIST Level 1)

Composite Study Group (CSG)

OBJECTIVES

- ◊ To provide common flat form for the researchers on Composite Materials
- ◊ To develop research facility on processing and testing of composite materials
- ◊ To enhance the outcome in terms of publications and proposals in the field of Composites

The Team CSG	
Chief Advisor	Dr Joseph Gonsalves
Advisory Committee	Dr K Raju Dr James Valder Dr Shreeranga Bhat
Group Mentor	Dr Sudheer M
Members (Faculty)	Mr Ravikantha Prabhu Mr Noel Deepak Shiri Mr Pavana Kumara B Mr Poornesh M Mr Naveen R Mr Sudheer Kini Mr Joel Concessao

AREA OF FOCUS

- ◊ Metal Matrix Composites (MMCs): Preparation, Testing, Analysis and Applications
- ◊ Polymer Matrix Composites (PMCs): Preparation, Testing, Analysis and Applications

SHORT TERM PLAN

- ◊ Awareness about Novel Materials " Composites" among students
- ◊ Promoting interactions between staffs and students to develop new composites including nano-composites, bio-composites etc.

LONG TERM PLANS

- ◊ Setting up of standard fabrication facility for processing MMCs and PMCs
- ◊ Mechanical and Computation analysis of composites

EXPECTED OUTCOME

- ◊ Collection of Literatures on Composite Materials
- ◊ Guiding projects for undergraduate students in the field of Composites
- ◊ Publishing journal papers/ conference papers on Composites
- ◊ Exploring the possibilities of financial support from external agencies.

NOW THAT'S A BIT WEIRD PHOBIA TO HAVE

Anatidaephobia - *"It is the fear that somewhere in the world, there is a duck watching you".*
This is seriously funny, but it's for real!

Hippopotomonstrosesquipedaliophobia - *"Fear of long words".*
You are either really afraid of long words or this must be a joke phobia.

Chronophobia - *"It is the fear of time passing".*
Not surprisingly it is often found mostly in prison inmates or the elderly.

Globophobia - *"Fear of balloons popping".*
I have no idea how on Earth such people will ever be able to arrange a birthday party for their kids!

Nomophobia - *"Fear of being without mobile phone coverage".*
Ah! I am sure we all have a little percentage of this hidden somewhere in us.

Venustraphobia - *"Fear of Beautiful Women".*
It's a pity such men tend to put off from dating beautiful girls as they may actually feel traumatized.

Euphobia - *"Fear of Good News". Yes! Many people get scared of nothing but of getting good news.*
We all have heard how people dread bad news. But, nothing could be worse than one dreading good news.

Papaphobia - *"Fear of the pope". Yes, this is probably the weirdest of the lot, but some people actually fear the pope!*
So if you suffer from it you definitely can't visit the Vatican City!

Phobophobia - *"Finally, there's a phobia of having phobias!"*
People suffering from this phobia live in the fear that they might develop a phobia. Far too ironic.

FUNDED RESEARCH PROJECTS

1. EFFECT OF ALLOYING ELEMENTS AND PROCESS VARIABLES ON THE PROPERTIES OF AL-SI ALLOYS PRODUCED BY SPRAY FORMING

Principal Investigator: Dr. Raju K
Funding Agency: Vision Group on Science & Technology, Government of Karnataka
Program Name: K-FIST-LEVEL 1
Grant Number: 351
Grant Amount: Rs 20 lakhs
Program Duration: 2014-2016

2. EXPERIMENTAL AND NUMERICAL ANALYSIS FOR THE DEVELOPMENT OF METAL HYDRIDE BASED HYDROGEN STORAGE SYSTEM

Principal Investigator: Dr. Purushothama Chippar
Funding Agency: Vision Group on Science & Technology, Government of Karnataka
Program Name: K-FIST-LEVEL 1
Grant Number: 477
Grant Amount: Rs 20 lakhs
Program Duration: 2015-2017

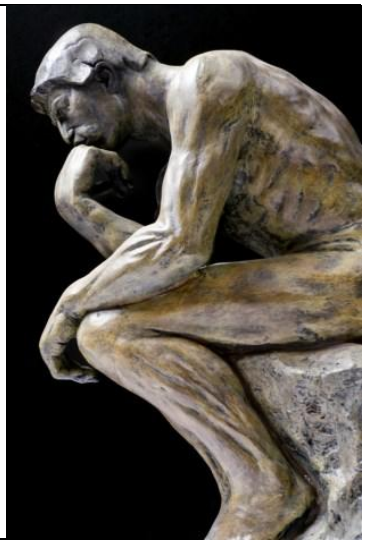
3. DESIGN, DEVELOPMENT AND OPTIMIZATION OF METAL HYDRIDE BEDS FOR HYDROGEN ISOTOPE STORAGE AND TRANSPORTATION

Principal Investigator: Dr. Purushothama Chippar
Funding Agency: Institute for Plasma Research, Gandhinagar, Gujarat (DAE)
Program Name: MOU between IPR and SJEC
Grant Amount: Rs 13.5 lakhs
Program Duration: 2016-2018

FOOD FOR THOUGHT

HAVE YOU EVER WONDERED WHY?

- Who tastes dog food when it has a "New & Improved" flavour?
- Why they are called apartments, when they are all stuck together?
- Why they call an airport a "Terminal" if flying is so safe?
- Why does the expression go "Slept like a baby," when babies wake up every two hours?
- Why is the time of day with the slowest traffic called rush hour?
- Why is a boxing ring square?
- Why is it that rain drops but snow falls?
- why do we drive on a parkway but park in a driveway?
- Why is it that when you transport something by car, it's called a shipment, but when you transport something by ship, it's called a cargo?
- And finally, Why Noah didn't swat those two darned mosquitoes?

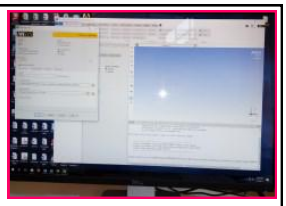


RESEARCH FACILITIES

- Computerized VCR IC Engine
- Sophisticated Wear testing machine
- High Performance Computing Facilities (with ANSYS 17.1 and STAR CCM+)
- Melting Furnace
- Hardness testing machine
- Probe Sonicators
- Specimen polishing machine

Leica Optical Microscope

Pin-on-Disk Wear Tester



System Specifications
Intel Xenon Processor E5-2620 v3 (6C HT, 15MB Cache, 2.4GHz Turbo)
64 GB 2133MHz DDR4 RDIMM ECC
Nvidia Quadro K2200 4GB
2TB SATA HDD (3.5 inch, 7.2k RPM)

CERG LAB - Computing Facility

Computerized VCR IC Engine

RESEARCH CENTER

Department of Mechanical Engineering

St Joseph Engineering College, Vamanjoor, Mangaluru 575028

Karnataka, India

Tel: +91 824 2263753 / 54 / 55 / 56 Ext: 190, Fax: +91 824 2263751

TECHNICAL TALKS

◊ The Research Center of Mechanical Engineering Department conducted a Technical Talk on Saturday, 28th January 2017 at 9.30 am on the topic "Overview of Biomechanics", by Dr. S.M. Abdhul Khader, Post- Doctoral Fellow jointly with School of Biomedical Science, Hong Kong University and Beijing Computational Scientific and Research Center, Beijing.

◊ The Research Center of Mechanical Engineering department organized a workshop on "Computational Fluid Dynamics Using ANSYS" held on 8th February 2017 and 9th February 2017 by Innovent Engineering Solutions Pvt. Ltd, Bengaluru.

◊ The Research Center of Mechanical Engineering Department conducted a Technical Talk on Monday, 20th March 2017 at 3.00-5.00 pm on the topic "Non-linear and Elastoplastic Fracture Mechanics", by Mr. Karthik Madyastha N, Asst. Professor, Dept. of Mechanical Engg. SJEC, Mangaluru

◊ The Research Center of Mechanical Engineering Department conducted a training program on CFD (Computational Fluid Dynamics) on Saturday, 27th May 2017 at 10 am -5 pm on the topic "**ANSYS - FLUENT**", by Dr. Purushothama Chipper, Associate. Professor, Dept. of Mechanical Engg. SJEC, Mangaluru

◊ Mr Rolvin S D'Silva delivered a technical talk on "Nano Technology" on 14th May 2016 at Research Centre in the Department of Mechanical Engineering, SJEC, and Mangaluru.

◊ Dr Purushothama Chippar delivered a technical talk on "Intellectual Property Rights" on 23rd May 2016 at Research Centre in the Department of Mechanical Engineering, SJEC, Mangaluru.

◊ Dr.James Valder delivered a technical talk on "Equal Channel Angular Pressing (ECAP) of non-ferrous metals and alloys" on 25th November 2016 at Research Centre in the Department of Mechanical Engineering, SJEC, Mangaluru.

◊ Mr Sudheer M delivered a technical talk on "Hybrid Composites: Materials, Manufacturing and Testing" on 25th January 2017 at the Research Centre in the Department of Mechanical Engineering, SJEC, Mangaluru.

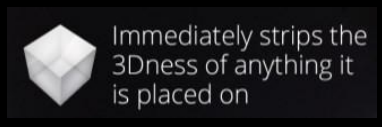
RESEARCH SCHOLARS

Research Scholar	Supervisor	Area of Research
Mr Prem Kumar (Ext)	Dr Joseph Gonsalvis	IC Engine
Mr Shyam Prasad (Ext)	Dr Joseph Gonsalvis	IC Engine - Modification & Performance Analysis
Mr Prashanth Kumar	Dr Raju K	IC Engine - Biofuel Combustion Characteristics
Mr Suresh K V (Ext)	Dr Raju K	IC Engine
Mr Harish K (Ext)	Dr Raju K	Materials
Mr Sushanth H G	Dr Raju K	IC Engine - Biofuel Combustion Characteristics
Mr Santhosh Goudar (Ext)	Dr Raju K	Materials
Mr Rolvin Sunil D'Silva	Dr Thirumaleshwara Bhat	IC Engine - Nanoadditives
Mr Ravikantha Prabhu	Dr Thirumaleshwara Bhat	Composite Materials
Mr Sharun Mendonca	Dr Thirumaleshwara Bhat	IC Engine - Nanoadditives
Mr Vijay V S	Dr Joseph Gonsalvis	IC Engine - Modification & Performance Analysis
Mr Avil Alwyn D'Sa (Ext)	Dr Joseph Gonsalvis	IC Engine
Mr Pavana Kumara	Dr Shreeranga Bhat	Management
Mr Swaraj Dominic Lewis	Dr Purushothama Chippar	Hydrogen Storage
Mr Anil Melwyn Rego (Ext)	Dr Shreeranga Bhat	Management
Mr Vikas G (Ext)	Dr Sudheer M	Polymer Composites

TECHNICAL ARTICLES

"WHEN NANOTECHNOLOGY REVOLUTIONIZES A COLOUR – VANTABLACK"

By
ROGER M. PEREIRA
VIII SEM



Greetings Reader!

Did you say something? Oh! You want something exciting to read? Well, look no further because Nanotechnology is here to drive away your boredom. Just when you thought my brother "Super Black" was the benchmark per se, I, Vantablack, am here to set a new one

Vantablack (that's my name), thanks to Nanotechnology, is currently the World's blackest material. Why Vanta you ask? Well, Vanta is an acronym for "Vertically Aligned Nano Tube Arrays." I am surely feeling proud of my new achievement. Who wouldn't! Let me tell you something more about me now. Read further to experience my creation.

I, Vantablack, am an artificial material capable of absorbing nearly 99.965% of the radiation in the visible spectrum. I am closest to a perfect black body that you've studied so much in your Physics and Thermodynamics classes. I am composed of a forest of vertical tubes which are "grown" on a substrate using a modified Chemical Vapour Deposition (CVD) Process. My existence is the brainchild of the National Physical Laboratory, UK. My name is a trademark of Surrey NanoSystems Ltd., UK.

When light strikes my surface, instead of bouncing off, it becomes trapped and is continually deflected among the tubes, eventually becoming absorbed and dissipating into heat. Vantablack (I just love my name) was an improvement over similar substances developed at the time (around 2014). I can be created at 400 °C (752 °F); NASA had previously developed substance similar to me, but that can only be grown at 750 °C (1,380 °F). For this reason, I can be grown on materials that cannot withstand higher temperatures and in turn empower these materials to "beat the heat."

Coming to my awesome properties, I am able to achieve low outgassing and particle fallout levels; handling mechanical vibrations is my forte and I have very good thermal stability. Also, I absorb more than just visible light, and am equally-effective across a whole range of the electromagnetic spectrum that is invisible to the human eye.

Fig. 1: *Aluminium foil with a portion coated in Vantablack*

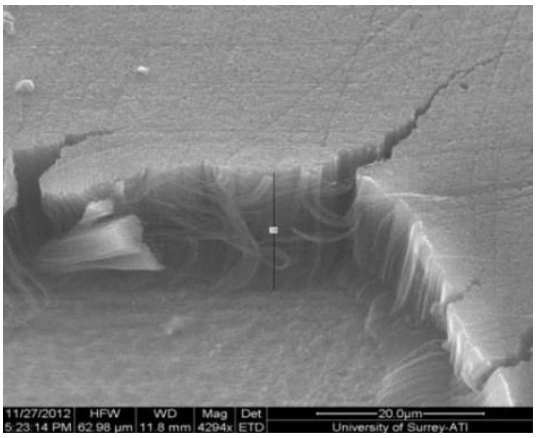


Fig. 2: *Scanning Electron Microscope image of a VANTA coating grown on an Aluminium Substrate*

My name and features have become so popular, that I am applied extensively in various fields. I can effortlessly prevent stray light from entering telescopes, and improve the performance of infrared cameras both on Earth and in Space. I may be used to increase the absorption of heat in materials used in Concentrated Solar Power Technology, as well as military applications such as Thermal Camouflage. My emissivity and scalability

support a wide range of applications.

To make things more interesting, here are a few facts about me:

- I am not actually a colour, but a material (a forest of tiny, hollow carbon nanotubes –Remember?)
- I can't be bought off a shelf or be ordered. I must rather be grown on surfaces on which I have to be applied.
- I will easily take about two days to be applied onto a surface.
- Do I look soft and velvety to you? Unfortunately, I am not. If you touch me, you'll feel a smooth surface.
- I am almost massless. That explains my exceptional properties.
- I could be used as paint, on clothes, mobile phones or on everyday objects provided I am made in the appropriate manner.
- I am sensitive to touch and slightly susceptible to damage. That's acceptable, right?

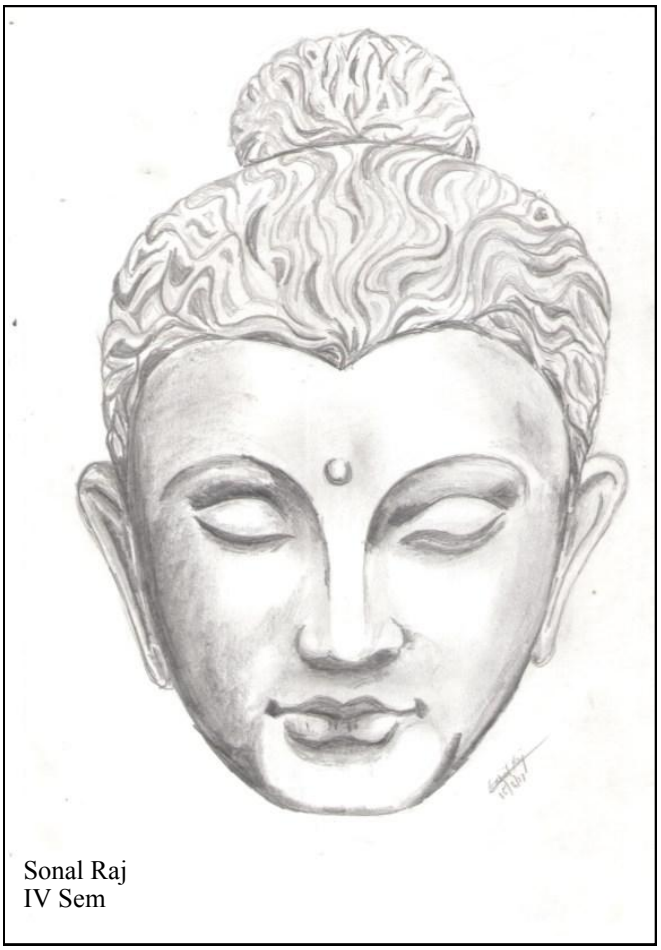
Although, I am work-in-progress, I have a huge potential and scope for development.

If interested, you could take up the field of Nanotechnology and help me reach greater heights at a faster pace. Thank you for your time and patience, dear reader.

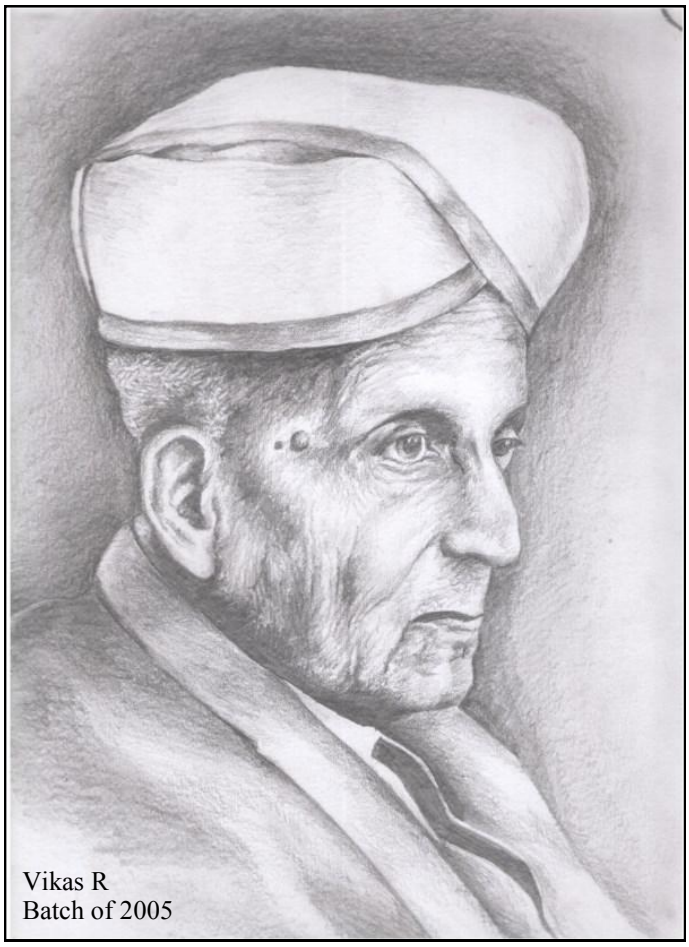
Awaiting your acquaintance in the near future.

Yours Technically,

Vantablack



Sonal Raj
IV Sem



Vikas R
Batch of 2005

"We are shaped by our thoughts;
we become what we think.
When the mind is pure,
joy follows like a shadow
that never leaves."

- Gautama Buddha

"Remember, your work may be only to sweep a railway crossing,

but it is your duty to keep it so clean that no other crossing in the world is as clean as yours."

- Sir M. Visvesvaraya

PROBING QUESTION: WHAT IS A SUPERSOLID?

By
KEEGAN
IV SEM

"Imagine you have an orchestra together, but everyone is playing their own tune, until they begin to follow a conductor. In a normal solid, every atom has its own behavior until very close to absolute zero. Then quantum mechanics takes over and dictates everyone to play the same tune."

That's physics professor Moses Chan's musical metaphor for his discovery that atoms in a solid can condense into what he likes to call "one giant atom," a new phase of matter called a supersolid. Together with post-doctoral associate Eun-Seong Kim, Chan found that when a particular isotope of helium gas has frozen into a crystal at a fraction of a degree above absolute zero, part of it exhibits a property only seen before in superfluids: no friction.

To understand frictionless flow, says Chan, think of a bunch of kids sitting on a spinning merry-go-round. Normally, the more kids on the merry-go-round, the harder it is to stop the movement and reverse its direction. Chan and Kim set up an oscillator that spins back and forth like a merry-go-round shifting direction. They found that helium crystals in a normal solid state behaved as expected, with each additional bit of crystal adding to the mass of the "merry-go-round" and increasing the resistance.

However when those same crystals are frozen below 0.2 degrees Kelvin, something unexpected happens: one percent of the solid helium begins to flow without resistance. "It's as if a portion of the kids on that merry-go-round are sitting on perfectly smooth ball bearings, unaffected by the merry-go-round sliding back and forth underneath them," explains Chan. This allows the crystal to oscillate faster, as if the crystal has suddenly become lighter—or the kids have lost weight in mid-spin. Chan and Kim knew that the matter had not been lost because the missing mass re-materialized with the slightest rise in temperature, and the oscillation slowed back down to normal.

Although the existence of supersolids was predicted decades ago, prior attempts to find evidence for them had come up empty. "One of the reasons why this phenomenon has not been seen before is that no other experimental group has oscillated the solid helium as gently as we have," Chan explains. "With harder oscillations, the superflow effect will go away."

Kim and Chan's result forces theoretical physicists to rethink how to distinguish solids from liquids when considering quantum effects.

In quantum terms, Chan points out, the behavior of any atom can be described both as a particle and as a wave-packet. An individual wave-packet increases in size as it is cooled, especially when the thermometer drops close to absolute zero. Where at higher temperatures atoms are normally locked in a grid, like rows of people sitting in an auditorium, near zero the wave-packets expand and overlap with their neighbors.

In classical physics, objects cannot share the same space. "If I run into you, there will be a collision and the motion will stop," Chan says. "But in quantum mechanics, we become one thing."

When the supercooled helium atoms expanded out into one another, he continues, they lost their individuality and became one giant atom. It's as if that theater audience became a single, room-sized person.

So how can a solid behave like a superfluid? All bulk liquid superfluids are caused by Bose-Einstein condensation, which is the quantum process whereby a large number of particles all enter the same quantum state. Chan and Kim's result therefore suggests that 1 percent of the atoms in the solid helium somehow form a Bose -Einstein condensate even while they remain at fixed lattice positions. That seems like a contradiction in terms, but the exchange of atoms between lattice sites might allow it. A characteristic of helium would tend to promote such an exchange--namely, its large zero-point motion, which is the inherent jiggling of atoms that represents a minimum amount of movement required by quantum uncertainty. (It is the reason helium ordinarily only occurs as a

gas or a liquid: the extremely lightweight atoms jiggle about too much to form a solid.) Supporting the idea of condensation, the two researchers did not see superfluidity in solid helium 3, an isotope of helium that as a liquid undergoes a kind of condensation and becomes superfluid only at temperatures far below that needed by liquid helium 4.

Another possibility is that the crystal of helium contains numerous defects and lattice vacancies (yet another effect of the zero-point motion). These defects and vacancies could be what, in effect, undergo Bose-Einstein condensation.

But all those theories seem to imply that the superfluidity would vary with the pressure, yet Chan and Kim see roughly the same effect all the way from 26 to 66 atmospheres. Douglas D. Osheroff of Stanford University, the co-discoverer of superfluidity in helium 3, calls the lack of pressure dependence "more than a bit bewildering." He says that Chan and Kim have done "all the obvious experiments to search for some artifact." If they are correct, Osheroff adds, then "I don't understand how supersolids become super. I hope the theorists are thinking about it seriously."

WHY GOLF BALLS HAVE DIMPLES?

The dimples on golf ball decrease the drag as it flies through the air, compared to a smooth ball. They also increases the lift. These two things combined can make the golf ball go as much as three times farther than the same ball without dimples.

The dimples on golf balls accomplish both of these things by creating turbulence in the layer of air around the golf ball. Thus the dimples scoop the air and direct it inwards towards the back of the golf ball. This effectively increases the net air pressure in the back of the ball, which reduces the drag by reducing the pressure pulling back at the ball from behind.

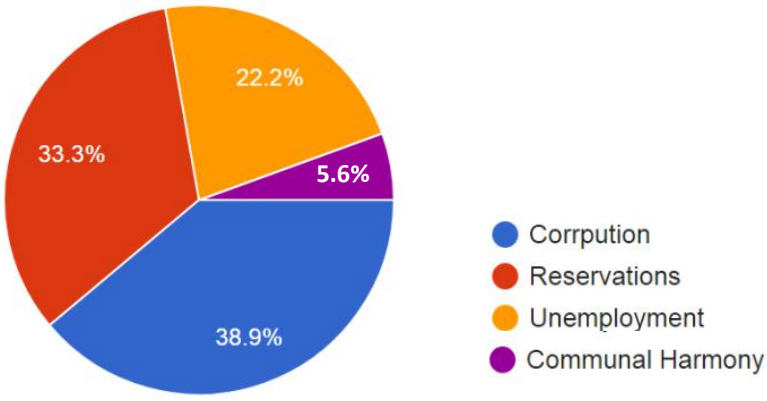
More technically, the streamline flow of air on a smooth ball separates fairly quickly from the ball as it passes over the surface of the golf ball, as seen in the image to the right. This ends up maximizing the size of the wake behind the golf ball, which maximizes the area of lower pressure, creating a large drag. With the dimpled golf balls, this streamline flow remains attached to the surface of the ball much longer which creates a smaller low pressure region behind the ball, thereby significantly reducing the drag on the ball.

The dimples also create lift when there is significant backspin on the ball as it flies through the air. The backspin causes the air to move faster backwards on the top of the ball. This creates lower air pressure above the ball than below, which creates a lift.

NIKHIL THOMAS (IV Sem)

OPINION POLL

Most important National Issue.



* the above statistics are based on responses obtained from Josephites through an online survey.

The average golf ball has 336 dimples.

LOST TECHNOLOGY: DAMASCUS STEEL (INDIA'S MATERIALS HERITAGE)

By
Orville Sutari
Asst. Professor

Damascus steel was an impossibly strong type of metal that was widely used in the Middle East from 1100-1700 AD. It is most famously associated with swords and knives. Blades forged with Damascus steel were known for their amazing strength and cutting ability, and were said to be able to slice rocks and other metals—including the blades of weaker swords—cleanly in half. The blades are believed to have been created using wootz steel, which was imported from India and molded and blended to create a patterned blade. The special quality of the swords is thought to have derived from this process, which weaved together tough cementite and soft iron to form a metal that was as strong as it was flexible.

Wootz steel is a crucible steel characterized by a pattern of bands, which are formed by sheets of micro carbides within a tempered martensite or pearlite matrix in higher carbon steel, or by ferrite and pearlite banding in lower carbon steels. It is the pioneering steel alloy matrix developed in Southern India in the 6th century BC and exported globally. It was also known in the ancient world by many different names including Wootz, Ukku, Hindvi Steel, Hinduwani Steel, Teling Steel and Seric Iron.

Fig. 1. *Close-up of an 18th-century Persian-forged Damascus steel sword*

The original method of producing Damascus steel is not known. Modern attempts to duplicate the metal have not been entirely successful due to differences in raw materials and manufacturing techniques. Several individuals in modern times have claimed that they have rediscovered the methods by which the original Damascus steel was produced.

The reputation and history of Damascus steel has given rise to many legends, such as the ability to cut through a rifle barrel or to cut a hair falling across the blade. A research team in Germany published a report in 2006 revealing nanowires and carbon nanotubes in a blade forged from Damascus steel [1]. Although many types of modern steel outperform ancient Damascus alloys, chemical reactions in the production process made the blades extraordinary for their time, as Damascus steel was superplastic and very hard at the same time. During the smelting process to obtain Wootz steel ingots, woody biomass and leaves are known to have been used as carburizing additives along with certain specific types of iron rich in micro alloying elements. These ingots would then be further forged and worked into Damascus steel blades. Research now shows that carbon nanotubes can be derived from plant fibers, suggesting how the nanotubes were formed in the steel. Some experts expect to discover such nanotubes in more relics as they are analyzed more closely.

How was it lost?

Production of these patterned swords gradually declined, ceasing by around 1750, and the process was lost to metal smiths. Several modern theories have ventured to explain this decline, including the breakdown of trade routes to supply the needed metals, the lack of trace impurities in the metals, the possible loss of knowledge on the crafting techniques through secrecy and lack of transmission, suppression of the industry in India by the British Raj, or a combination of all the above.

The original Damascus steel or wootz was imported from India to Damascus, where blade smiths learned how to forge them into swords. Due to the distance of trade for this steel, a sufficiently lengthy disruption of the trade

routes could have ended the production of Damascus steel and eventually led to the loss of the technique in India. As well, the need for key trace impurities of tungsten or vanadium within the materials needed for production of the steel may be absent if this material was acquired from different production regions or smelted from ores lacking these key trace elements. The technique for controlled thermal cycling after the initial forging at a specific temperature could also have been lost, thereby preventing the final damask pattern in the steel from occurring.

Fig. 2. *A bladesmith from Damascus, ca. 1900*

The discovery of carbon nanotubes in the Damascus steel's composition supports this hypothesis, since the precipitation of carbon nanotubes probably resulted from a specific process that may be difficult to replicate should the production technique or raw materials used be significantly altered.

Reproduction

J. D. Verhoeven and A. H. Pendray published an article on their attempts to reproduce the elemental, structural, and visual characteristics of Damascus steel [2]. They started with a cake of steel that matched the properties of the original wootz steel from India, which also matched a number of original Damascus swords to which Verhoeven and Pendray had access. The wootz was in a soft, annealed state, with a grain structure and beads of pure iron carbide which were the result of its hypereutectoid state. Verhoeven and Pendray had already determined that the grains on the surface of the steel were grains of iron carbide—their goal was to reproduce the iron carbide patterns they saw in the Damascus blades from the grains in the wootz.

Fig. 3. A Damascus steel knife

Although such material could be worked at low temperatures to produce the striated Damascene pattern of intermixed ferrite and cementite bands in a manner identical to pattern-welded Damascus steel, any heat treatment sufficient to dissolve the carbides would permanently destroy the pattern. However, Verhoeven and Pendray discovered that in samples of true Damascus steel, the Damascene pattern could be recovered by aging at a moderate temperature. They found that certain carbide forming elements, one of which was vanadium, did not disperse until the steel reached higher temperatures than those needed to dissolve the carbides. Therefore, a high heat treatment could remove the visual evidence of patterning associated with carbides but did not remove the underlying patterning of the carbide forming elements; a subsequent lower-temperature heat treatment, at a temperature at which the carbides were again stable, could recover the structure by the binding of carbon by those elements.

Fig. 4. *Characteristic "organic" pattern of Damascus steel*

Additional research

A team of researchers based at the Technical University of Dresden that used x-rays and electron microscopy to examine Damascus steel discovered the presence of cementite nanowires[3] and carbon nanotubes [4]. Peter Paufler, a member of the Dresden team, says that these nanostructures are a result of the forging process.

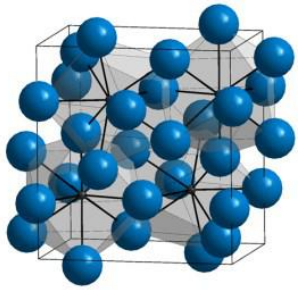


Fig. 5. *Cementite crystal structure. Iron atoms are in blue, carbon atoms are in black*

Sanderson proposes that the process of forging and annealing accounts for the nano-scale structures [5].

References

[1] Reibold, M.; Paufler, P.; Levin, A. A.; Kochmann, W.; Pätzke, N.; Meyer, D. C. (2006). "Materials: Carbon nanotubes in an ancient Damascus sabre". Nature. 444 (7117): 286.

[2] J. D. Verhoeven, A. H. Pendray, and W. E. Dauksch; Pendray; Dauksch (1998). "The key role of impurities in ancient damascus steel blades". Journal of Metallurgy. 50 (9): 58.

[3] Kochmann, W.; Reibold, Marianne; Goldberg, Rolf; Hauffe, Wolfgang; Levin, Alexander A; Meyer, Dirk C; Stephan, Thurid; Müller, Heide; Belger, André; Paufler, Peter (2004). "Nanowires in ancient Damascus steel". Journal of Alloys and Compounds. 372: L15–L19.

[4] Reibold, M.; Paufler, P; Levin, AA; Kochmann, W; Pätzke, N; Meyer, DC (November 16, 2006). "Materials:Carbon nanotubes in an ancient Damascus sabre". Nature. 444 (7117): 286.

[5] Sanderson, K. (2006). "Sharpest cut from nanotube sword". Nature. 444: 286.

NEWS

Cheers to the Educational Hub!

It is a matter of pride for all of us that Mangalore has been recently named as the First Start-up District of the Country! Announcing the news, Ms Nirmala Seetharaman, Minister of State for Ministry of Commerce and Industry, stated that the plethora of high quality Educational Institutions with a vibrant student community present in Mangalore was the main reason for the recognition. It is up to the educational community to raise up to the occasion and take Mangalore to greater heights.

AIRCRAFT PROGNOSTIC SYSTEMS AND METHODS FOR DETERMINING ADAPTIVE TIME BETWEEN OVERHAUL FOR LINE REPLACEABLE UNITS - US9568912 B2

By
Dr Purushothama C
Assoc. Professor

Modern aircraft are commonly equipped with a relatively large number of Line Replaceable Units (LRUs), which perform various functions supporting aircraft operation. By definition, LRUs are modular components that can be removed and replaced in-field in a relatively efficient manner to, for example, minimize downtime of the aircraft during maintenance, such as during an unplanned maintenance event and repair. To reduce the likelihood of in-field LRU failure, LRUs are often replaced and overhauled after expiration of a so-called "Time Between Overhaul" or "TBO" value assigned by the Original Equipment Manufacturer (OEM). The TBO value is a fixed period, which is typically measured in flight hours and set by the OEM during initial design of the LRU. The OEM may determine the TBO value of a particular LRU based upon a number of different factors. These factors may include the structural characteristics of the LRU (e.g., the base materials of the LRU, the presence of rubber seals and gaskets, the provision of coatings or coating systems, etc.), the mechanical stressors to which the LRU may be exposed (e.g., expected vibration and stress concentrations), and the range of operational environments in which the LRU may potentially be deployed.

As the OEM lacks prior knowledge of the particular environmental conditions to which the LRU will be exposed over its impending service life, the OEM will typically set the TBO value based upon an anticipated range of operational conditions to which the LRU may reasonably be subjected. This practice of setting a fixed LRU TBO value, which does not change or adapt in relation to the actual environmental exposure of the LRU, can result in an unnecessary increase in maintenance costs, can contribute to an inefficient scheduling of inspections, and can negatively impact LRU reliability and, therefore, the overall reliability of the larger aircraft systems. Consider, for example, a scenario in which an LRU-equipped aircraft operates primarily or exclusively in mild environmental conditions, such as high humidity or ice-rich conditions. In this case, the LRUs carried by the aircraft may be subject to a relatively low rate of environmental degradation and, thus, be capable of providing useful service life well beyond the fixed TBO value assigned by the OEM. Consequently, replacement of the LRUs upon expiration of the manufacturer-set TBO value incurs unneeded maintenance costs and can contribute to inefficient or sub-optimal maintenance scheduling. Conversely, in instances wherein the LRU-equipped aircraft primarily or exclusively operates in exceptionally harsh environmental conditions, such as high salinity or coastal conditions, replacement of the LRUs prior to the expiration of their respective manufacturer-set TBO values may be warranted. In such instances, there may exist an undesirably high probability of LRU failure immediately prior to expiration of the fixed manufacturer-set TBO thereby decreasing the overall reliability of the aircraft systems. Further complicating this problem is the fact that a single LRU can be deployed on multiple different aircraft over the lifespan of the LRU.

To overcome the above-described limitations associated with the usage of a fixed or manufacturer-set TBO values, Figure 1 describes an aircraft prognostic systems and methods enabling a variable or "adaptive" TBO value to be calculated an for one or more LRUs deployed onboard an aircraft and periodically updated at predetermined intervals or upon occurrence of a particular event, such as upon completion of a flight operation. The adaptive TBO value may be derived from a baseline TBO value, such a manufacturer-set TBO value, which is adjusted based upon an estimated degradation of the LRU. The estimated degradation of the LRU can be determined, in turn, by monitoring the cumulative period of time the aircraft resides in any one of a plurality of different geographically-divided zones, each having a particular LRU degradation rate associated therewith. The environmental degradation rates correlated to the geographical zones may be LRU-specific and recalled from a memory embedded in the LRU. The degradation rates can be adjusted based upon sensor input monitoring the health of the LRU. The adaptive TBO value may then be stored on, for example,

memories affixed to each LRU and, preferably, memories included in Radio Frequency Identification (RFID) devices embedded into each LRU. In this manner, the adaptive TBO value can be readily retrieved from the LRU even in instances wherein the LRU is deployed on multiple different aircraft over its operational lifespan. The adaptive TBO value can be updated at a relatively rapid refresh rate or upon occurrence of a particular event (e.g., aircraft shutdown) to ensure that the TBO value reflects the actual environmental exposure of the LRU in real-time or near real-time.

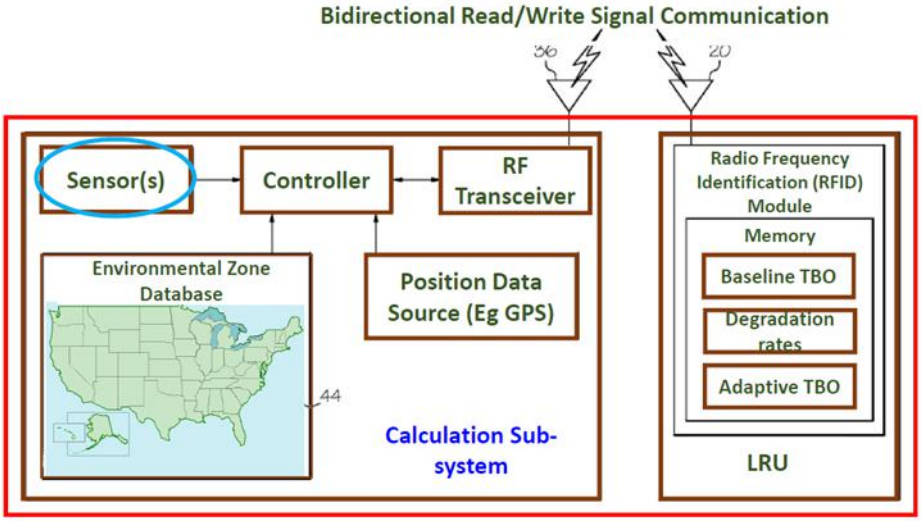
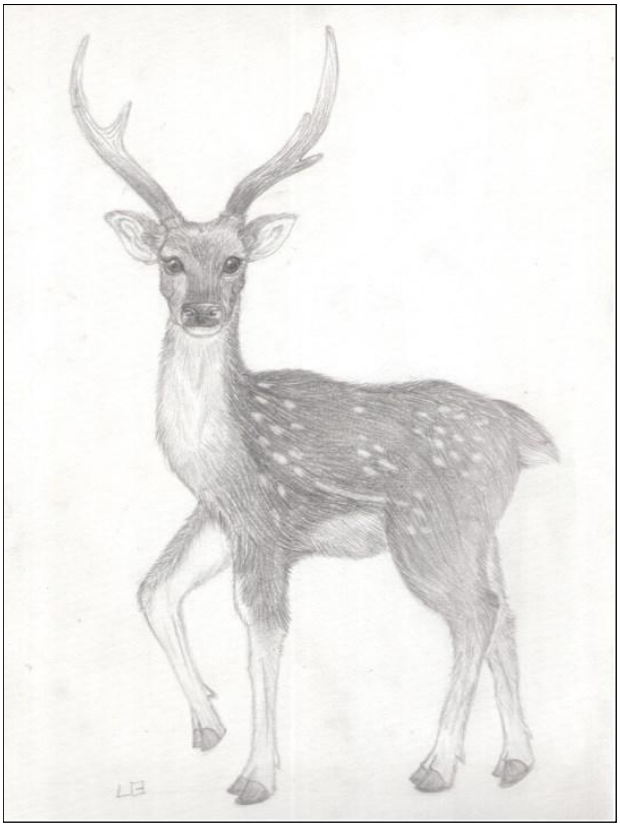


Fig. 1. *Line Replaceable Unit Prognostic System*



◀ Khalid Mohammed
VIII Sem M2

▲ Upendra Barke
IV Sem M3

COMMENDABLE INITIATIVE

CAED Video Tutorials on YouTube by

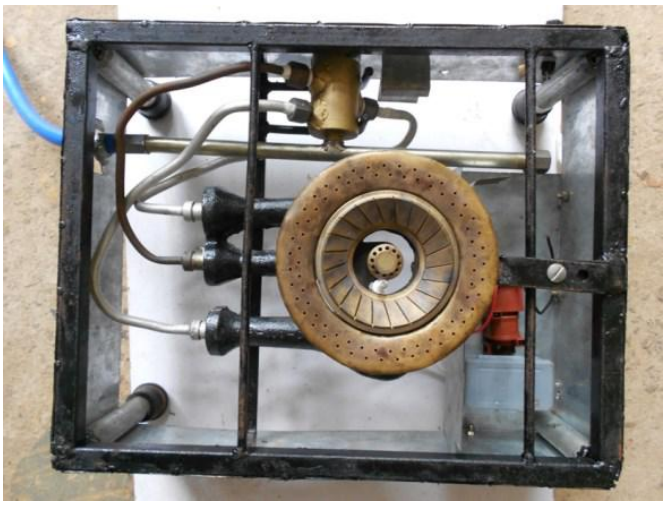
Christopher Cutinha
Lab Instructor

Scan the QR Code to access the site… ▶

-40 degrees is the temperature where the Fahrenheit and Celsius scales meet (-40°F = -40°C).

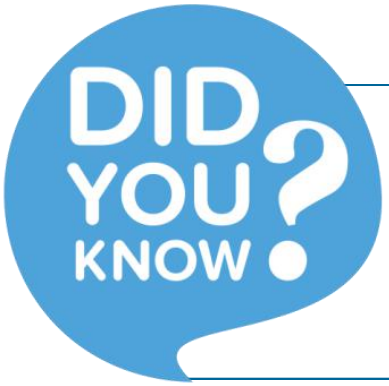
MULTI-UTILITY SMART CONCENTRIC GAS BURNER

In conventional gas stoves there will be two or more burners for different sized vessels. We had an idea to accommodate different sized vessels in a single burner and make it more flexible. We designed, a single, independently flooded concentric gas burner and had it fabricated in our workshop. The burner provides variable circumferential flames to accommodate different sized bases of cooking vessels. This single innovative gas burner can produce variable circumferential flames depending on the base diameter of the cooking vessel. Here three different sized gas burners are arranged concentrically such that the gas through the individual burner can be controlled independently. The gas burner receives the controlled gas flow rate by 4/4 rotary servo valve. Ultrasonic sensor is placed in the gas stove in appropriate location to sense the diameter of the vessel. The signal generated by ultrasonic sensors is sent to the microcontroller which will generate signal to the servomotor which controls the control valve automatically, there by flooding the gas to the required burner chamber.



This product was developed by the final year Mechanical engineering students of 2013 batch namely Mr. Shreekanth N R, Mr. Bharathesha A B, Mr. Sharath Kumar K and Mr. Abhijith H, as their project work of final year Mechanical Engineering. This concept is under the process of patenting, titled **"**Automated domestic gas stove with manual and servo valve controlled, independently flooded concentric gas burner" numbered 6051/ CHE/2013, is published in the Indian official journal of patents on 26th June 2015, Issue no. 26/2015 and is currently awaiting examination.

Mr. Prathviraj H.
Assistant Professor
Department of ME - SJEC



At high altitudes, diesel engines get better power than gasoline.

Gasoline engines operate at a very specific ratio of fuel and air. At high altitudes, the air is thinner — literally: there are fewer molecules of air per cubic foot. That means that in the mountains, gasoline engines have to add less fuel to keep the ratio perfect, which affects performance. Diesel engines have turbochargers, which pump more air into the combustion chambers at high altitudes, which helps them perform better.

ALUMNI INTERACTIONS

1000+ B.E. Mechanical Engineering graduates from SJEC worldwide

* The details of graduates with only the known locations are displayed here.

Alumni Q+A

> *The world is moving towards an electronization in each zone of our life, and the role of mechanical engineers is tremendous to facilitate the application of these electronic features.*

THOMAS MATHEW

Deputy Function Leader - Upstream Strategy Engineering
Renault s.a.s, Paris
thomas.mathew385@gmail.com

Q. Challenges faced after graduation during the transformation to a full fledged professional Mechanical Engineer.

A. The main challenge was the lack of exposure to practical application of theoretical knowledge. As the curriculam of VTU is quite strict, most of the time ,we were busy with tests / exams. However it would be great, if there are more practical lessons, for example, for students who are interested in IC engines, if there is a hands on experience of old / latest engines, the level of exposure as a student will be really good. This would also open the doors to some new opportunities and ideas.

The next challenge was the lack of knowledge on the wide range of application of Mechanical Engineering.
In the current situation in this world, there is a massive scope of mechanical engineering application, right from transportation to food business. The world is moving towards an electronization in each zone of our life, and the role of mechanical engineers is tremendous to facilitate the application of these electronic features.

Q. Suggestions to the Department and current students to enable easier adaption to professional life?

A. I would like to give 2 suggestions:

1. To the students - Professional life is quite different from college life , as you can imagine its a brutally competitive world and to find the right job with competent remuneration is a desire for each person , however the best part is for each individual to find his / her interest and passion for their respective job, else the professional life becomes just a monotonous life to get money. Having said about the difference between professional & college life, the important common point is to follow your passion and enjoy the work or study content. So please enjoy your college time and follow your passion.

2. The department can play a crucial role in the 4 years of Engg. Every industry has innovation department in their company , which facilitates for innovations for the future. May be a the department can have a mini-innovation / creativity center with appropriate tools , that can facilitate students to use their creative ideas / experiment their ideas. every idea generated, can be a stepping stone for an innovation in the future. This step would make the students to think independently and make them confident to take their ideas forward with confidence. Its not necessary that every idea can be implemented, but still it will be an idea for the future.

Q. Top three advices you would offer a sophomore Josephite Mechanical Engineering Student?

A. My advices to the students are:

1. As a student , please be curious to learn and ask more. Read as much as you can about latest trends in industry, technology advancements in India and around the world. Example - the automobile industry is moving towards Electric cars / connected cars in the western part of the world . So the industry is expanding rapidly in Mechatronics side and this will be a trend for the next 20 years in this industry.

2. Try to develop interests in your field of study and academics. This will give you direction for your future career aspirations. This is the right time for you to experiment, even if you do not like a particular field after a certain stage, you will still have a lot of time to focus on other fields.

3. Please have aspirations & goals in life, at the same time be patient. Its a fine thin balance to maintain, as in Mechanical engineering, the initial start of the career is more focused on improving your foundation and preparing you for the future roles which of course are highly rewarding, which is quite different from other streams of engineering. The world is filled with massive opportunities, and it will feed you with new challenges as we move ahead in time.

Q. The Department has started the SAEINDIA collegiate club, which we know was one of your dreams back during your time as Mechanical Association President. What's your advice to the current student members?

A. Starting SAEINDIA club is a great initiative. As I mentioned before, these kind of forums will act as first step to bridge the gap between theoretical and practical knowledge.

1. You will be exposed to latest trends / innovations in automotive industry around the world
2. The exposure to interact with peer colleges and students will give you healthy insight and new opportunities
3. Events like BAJA, will help you to work hands on , on Practical and aspirational projects.

Q. SJEC and you. Past, present, and future.

A. SJEC and Past - As we were the first batch of SJEC, there was a lot of pressure on management to obtain good results, and the future of the college would be on good results and recruitment. the management took a lot of care to understand our needs and support in curriculum / hostel life. The best part of SJEC for me, has been the hostel life, as we started as a very small group and eventually after 4 years grew into a big group with diverse background.

SJEC & Present - Currently, we receive communication about Alumini association meet, however I am unable to attend due to various reasons. However, I would surely I like to attend the meets and this could also be a great platform for us to connect with college and students and get their outlook, at the same time for the students to meet the alumunus to discuss and connect for future opportunities and direction.

SJEC & Future - In the future, I would like to connect along with my fellow mates and try to work with the college to improve the 'Theory to Practical life' , in order to enhance the opportunities for the students for future recruitment and academic growth.

> *New skills will have to be learned and excelled in short span of time.*

JESWIN GEORGE JOHN

Asst. Manager - Projects and Compliance
Al Futtaim

Q. Challenges faced after graduation during the transformation to a full-fledged professional.

A. Realizing that most of what you studied in your four years doesn't necessarily have to be applicable in your professional life. New skills will have to be learned and excelled in short span of time.

Q. Top three advices you would offer a sophomore Josephite Mechanical Engineering Student?

A. My Advices:

1. **Prepare for higher studies.** Not necessarily a Master's degree; it could even be certification courses. But prepare for it well in advance. Market is extremely competitive and you have to have an added advantage.
2. **Keep your textbooks/resources with you.** Even with Professor Google around, it's sometime worth referring to your old books.
3. **Get as many industrial trainings as possible.** Even if it's short spanned.

Q. Alumni - Institute Partnership, your views.

A. An alumni Institute relationship has to be a long lasting give -and-take partnership. Networking is a classic example for this partnership. Alumni can help current students in their placements. This strengthens the institute's profile as well. Building up a strong network among alumni can then eventually aid them in exploring better opportunities during their career life too. Another striking example for this relationship is how alumni can support final year students in their project works. Never hesitate to pick up the phone and call an alumnus when in need of any help for your final year projects or an industrial visit.

Q. As a student you co-founded an NGO that enabled students to help the less privileged students. Your views.

A. You run your own company, you are your own boss, expectations are high, limitations are many, stakeholders have to pleased, substandard quality isn't acceptable & most importantly, there is no profit. Your only reward is a smile. It's that very smile on a child's face that inspires you to perform and deliver furthermore.

End of the day, you would've learnt to be your own boss, develop multidimensional management skills, deliver quality results and to please your stakeholders (be it the children or their administrators or tomorrow it could be your manager, customer or sponsor!)

Q. Interdisciplinary nature of modern day jobs. Your views?

A. Interdepartmental influence is extremely essential in modern jobs. Companies don't often work in silos. Which is why, remembering your first year subjects and basic knowledge of non-engineering subjects are extremely important. From awareness of basic MS Excel to today's latest technological information is imperative in determining your success in corporate world.

Alumni Q+A

> *Start to learn simple programming, especially web and mobile development. Even if you don't find a job after graduation, you can count on your skills*

HARSHA ALVA

Software Developer
Collaborizm

Q. Challenges to be expected by a Josephite Mechanical Engineer as he starts his Masters course abroad.

A. Most professors in foreign universities abroad don't know about VTU. Many know about IITs, NITs and some other top colleges because of their old students. Because of this, we will always have the pressure of proving ourselves in academics. Since VTU syllabus is not really connected to the present, our students will have a difficult time learning what they missed in B.E. It's a good idea to have published papers if you're planning to study abroad.

Q. Top three advices you would offer a sophomore Josephite Mechanical Engineering Student?

A. My advices are:

1. Start to learn simple programming, especially web and mobile development. Even if you don't find a job after graduation, you can count on your skills by the time you reach 4th year. No need to attend classes or online paid courses (at first). Use free tools like *https://www.freecodecamp.com/* and *https://www.coursera.org/*. Later when you are confident enough, sign up for paid courses on *https://www.udemy.com/* or *https://in.udacity.com/*.

2. Start planning your future accordingly, Even though this will change with time, have multiple iterations in mind. Have a backup plan for every backup plan :P

3. In case you want to study abroad later, start seeing the requirements like qualifying exams and language requirements. Do your homework well and don't fall prey to agents or consultants. GRE Quant is easy if you know basic mathematics and practice enough. In my opinion, the level is of class 10, but the difficulty is high. Cannot keep for last minute like internals. Verbal needs work. IELTS is easy if you know basic grammar. TOEFL is harder. If you want to study in a European country where education is free or subsidized for all, start learning the basics of their language. Their languages have the same standards for ability (A1 - C2) and usually colleges ask for a minimum of A1 or A2 levels even for programs in English.

4. PRO TIP
Think about your interests in engineering. In the latter part of the year, tentatively plan your project and approach faculty to know the feasibility and their feedback. If you do this, you will see no stress in the final year and also before reviews. If you follow this advice, you can also save money on the project while buying parts/components, If you have time on your hands, you can buy them directly from China from sites like *http://aliexpress.com* and *http://banggood.com/*
Only a fool would pay ₹500 for something that could be bought from China for ₹80. But do note that free/cheap delivery takes 30-90 days.

Q. Life at SJEC. Your thoughts?

A. Give and take respect from faculty and staff - right from the top to the very bottom of the hierarchy, and have good rapport with them.
Maintain notes and do not miss classes unnecessarily.
If you follow this advice, life at SJEC couldn't be any easier.

Q. Start-up's, your perspective.

A. Great to learn new stuff, skills and get real responsibility, but usually hard on the wallet as pay may be low or sometimes even intermittent.

If you don't have financial or domestic problems, say yes to the bootstrapped life. U can easily score a C-suite position in a few years, if you work hard for it.

PRO TIP:
Out of a job after graduation, network with your seniors. Usually, you will find someone who has started up, or works in one. Additional skills learned in junior years will be beneficial.

Q. The Department has an Automation and Robotics Club. Your advice for the club.

A. Seeing great work being done by ARC. Glad to see efforts of the students and faculty paying off. Make sure to keep climbing higher.

Involve as many students as possible. Keep the knowledge flowing between incoming and outgoing students. Document everything.

Finally, do not neglect your academics.

The above alumni interactions were facilitated by Dr Binu K.G. Associate Professor, Department of Mechanical Engineering, St Joseph Engineering College, Mangaluru.

*** If you want your articles featured in 'The Crank 2018'**

Write Email to us

binuk@sjec.ac.in
rolvind@sjec.ac.in

Alumni NEWS

Best student award for a Josephite at the ISTE Annual Convention

Mr Sandeep B from the class of 2016 has received the ISTE (Indian Society for Technical Education) Best Student Award – 2016 at "13th State Level ISTE Students' Annual Convention" E-PRAVARTHANA - 2K16" held on 25th August 2016 in JSS Academy of Technical Education, Bangalore.

LEFT: *Sandeep with the award at the ISTE Convention B'lore.*

The Management representatives along with the HOD of Mechanical Engineering and Faculty Supervisor felicitating Mr Sandeep.

Exceptional performance by Sagar S Bhat at the B-School entrance exam

Sagar S. Bhat from the class of 2016

Sagar. S. Bhat from the class of 2016 has performed exceptionally well in the entrance exam of various business schools.

- ◊ Secured 99.09 Percentile with an Overall Score of 157.08 in **CAT 2016**.
- ◊ Scored 98.53 percentile in **XAT 2017** and has been offered admission in Xavier School of Management, Jamshedpur, INDIA for the Business Management Programme 2017-2019.
- ◊ Scored 98 Percentile in **NMAT by GMAC™ 2017** and has been offered the course of Business Management Studies in NMIMS.
- ◊ 99.19 Percentile in the entrance exam of **Indian Institute of Foreign Trade.**

Alumnus of SJEC recruits 7 students of his Alma Mater

Mr Varun Kajava, alumnus from the Class of 2015, currently working as Officer Business Operations at Usha Fire Safety Equipments Pvt. Ltd - Mumbai, visited SJEC for campus recruitment on 25th June, 2017. The Department appreciates the efforts of Mr Varun towards placement of our Students. The following are the selected candidates during the recruitment drive:

1. Mr. FLOYED WALTER PINTO
2. Mr. NAVEEN .MV
3. Mr. JAYADEV .PY
4. Mr. VIJETHRAJ .SV
5. Mr. BRISON SUHAIL PINTO
6. Mr. DINESH KUMAR K
7. Mr. LOY SABSON FERNANDES

The Department congratulates all the selected students for their achievement.

FACULTY/STAFF BLOGS ON CURRICULUM

CAED - VIDEO TUTORIALS
By Christopher Cutinha
Log on to ...
http://chris-caed.blogspot.in or Scan Code ►

CAED - SOLVED VTU PROBLEMS
By Pruthvi Serrao
Log on to ...
http://caedsjec.blogspot.in or Scan Code ►

MATERIAL SCIENCE
By Pruthvi, Chiranth & Orville
Log on to ...
http://msmsjec.blogspot.in or Scan Code ►

KINEMATICS OF MACHINES
By Pavana Kumara B
Log on to ...
http://pkbkom.blogspot.in or Scan Code ►

THERMAL ENGINEERING
By Sushanth, Rolvin, Ramya & Sharun
Log on to ...
http://sushanthhgnotes.blogspot.in or Scan Code ►

FOUNDRY TECHNOLOGY
By Prurhvi Serrao
Log on to ...
http://ftsjec.blogspot.in or Scan Code ►

A car travelling at 80 km/h uses half its fuel to overcome wind resistance.

HUMAN JOURNEY TO MARS

By
SHARATH D'SOUZA
Class of 2006

Humans have been an exploratory creature from the dawn of time. Its most dramatic rise was during the Age of Humans have been an exploratory creature from the dawn of time. Its most dramatic rise was during the Age of Discovery when European explorers sailed and charted much of the rest of the world for a variety of reasons. Humanity is continuing to follow the impulse to explore, moving beyond Earth. Space exploration started in the 20th century with the invention of exo-atmospheric rockets. This has given humans the opportunity to travel to the Moon, and to send robotic explorers to other planets and far beyond. Both of the Voyager probes have left the Solar System, bearing imprinted gold discs with multiple data types.

Space agencies around the world are contemplating of sending humans to Mars. Unlike moon mission which happened four decades back, these future missions to Mars will be complex due to the distance and the limited launch window i.e. approximately every 780 days. Such is the distance between these celestial bodies that a radio signal will take between 4 to 24 minutes to travel depending on the position of Mars and Earth in their elliptical orbits. Apart from the shear technical challenges to undertake such mission, there are other facets of the problem. Important one being the purpose of the Mars Mission. For a country it's always a pride to be the first one to explore uncharted territory. This showcases the technological know how and a mature government with long term goals and strategy. Funding for space exploration announces to the world that it can afford to do exploratory science research.

From crews point of view, immense psychological hurdles has to be crossed. A crew need to accept the risk of being lost in the space, stranded on Mars, or simply blown to smithereens during the launch itself. These risks have significantly reduced from the early space missions, but probabilistic risk analysis is done on equipment and crew as part of the mission. Being alone without close support from Earth is a psychological pressure in itself. The crew need to be multi talented individuals. Apart from being expert in their own field they have to be conversant with taking the roles of other crew members. This is the part of a resilient system, which has many redundancy incorporated.

Logistical challenges involved in sustaining a colony on Mars could be understood from the analogy of Antarctica Research Bases. The sheer amount of logistical supply needed to keep the bases functional is dwarfed by what is needed to keep the crew alive on Mars. On Antarctica year round supplies are not possible due to the weather. During summers special Hercules C130 transport planes fitted with skies land on the supply base camps to sustain the bases. For Mars we will have to do this roughly every two and half years when the Earth and Mars are aligned for a least energy transfer orbits. The current launch vehicles planned are SLS (Space Launch System) by NASA and Falcon Heavy by Spacex. SLS is limited to two launches a year including other space missions. With such constraints the challenges of logistical support has become a topic of immense interest in academia. Several research papers have been published to understand the challenges and the steps taken to mitigate the risks involved.

Next two decades will be interesting to see the collaboration of nations to undertake such mammoth task. No one country has the resources to undertake such mission which has no conceivable financial reward yet. Cold war had fueled the Moon mission, what will drive Mars mission is just left to speculation for now. Will private space travel industry fuel the next space drive? Will there be billionaires who will spend immense wealth to go to places where no humans have stepped foot?

The Department of Mechanical Engineering
St Joseph Engineering College – Mangaluru
is organizing

e TIME 2017

A National Conference and Faculty Development Programme on
Emerging Trends in Mechanical Engineering
which will be held on 4th and 5th August, 2017
in our Institution premises

e-TIME 2017 is organized in association with
Scientific & Academic Publishing – United States.

Scientific & Academic Publishing

All papers selected for presentation, depending on the field of research, will be published by Scientific Academic Publishing in any one of the three International Journals listed below:

American Journal of Material Science
Journal Mechanical Engineering and Automation
Energy and Power

Papers are invited from all major fields of study related to Mechanical Engineering. A more detailed listing of the fields of study, along with details pertaining to registration and important dates are provided in the conference website.

Scan the code
OR
Log on to conference website:
http://sjec.ac.in/etime.php

Contact:

Dr ShreerangaBhat

Organizing Secretary, e-Time 2017
Associate Professor
Department of Mechanical Engineering
SJEC - Mangaluru
Email: etime@sjec.ac.in
Mob: 9480047532

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering was established in the year 2002 with the vision of nurturing technically competent and socially responsible Engineering Professionals. Alma mater to more than 1000 Graduate Engineers over the past 14 glorious years; the Department has soared to newer heights with the efforts of the well qualified and dedicated faculty and state-of-the-art infrastructure. The Department offers Undergraduate (B.E.), Post Graduate (M.Sc. Engineering by Research), and Doctoral (Ph.D) programme; with an annual intake of 180 candidates for B.E. Mechanical Engineering programme. The Department believes in the overall growth of a student in both curricular, co-curricular and extra-curricular activities and encourages them to participate in various paper presentations, seminars, workshops, industrial visits and other technical activities and strives to prepare students for carriers across a broad range of industries. The faculty and research scholars in the Department are actively involved in research and have published their research in many national and international journals in fields of Composite Materials, Tribology, Fuel Cells, Spray Forming, Lean Manufacturing and Six Sigma. All of the Department's laboratories and workshops are accessible to students for conducting project work, curricular lab work and other mini projects. The Department proudly announces re-accreditation of its B.E. Mechanical Engineering programme by the NBA for the second time which is valid till June 2019.

FOR DETAILS CONTACT:

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