

Somraj S- Member of Team Helios Racing, Participated in National level Competitions, BAJA SAE INDIA 2016 and 2017, BAJA STUDENT INDIA 2015, 2016 and 2017 SAE E-Seminar on Vehicle Dynamics, received KAR E-pass Karnataka Government Scholarship.

Sugreeva- Participated in Baja SAE, Vaibhav Narayanaswamy- Head of International Services, Rotract Club of Diamond District Awarded ELS Student of the Month and Shreyas Sastry- Participated in Baja SAE competition in India and US, secured first place in Mridangam in Lions club.

Shreya Dayanand Guddin- Anveshana 2016 - Event to Foster teaching of Engineering concepts to high school children Won Viewer's choice award, Interdepartmental Mixed Relay- III Place. Organised SAE-TE Connectivity opportunities in design workshop.

Manoj Kumar S- Mechanical head in Astra robotics, received Rotract scholarship 15 and 16,

Prathamesh Honkamble- Recipient of Schneider Electric India Foundation Scholarship-16.

Vignesh A published research article in Elsevier Journal and participated in ICMEM conference at VIT National level - ISHRAE member, Won first prize at semi final and finalist at Grand Finals, participated in National level Eleccrama Exhibition Cultural - Dancer, Member - Kannada Sangha and Nihal Mohan M - secured first place in Manual Robotics IIT Madras competition - 2016.

Bishak Roy, fourth semester M.Tech Student of Product Design and Manufacturing, received first prize for his M.Tech Project under the guidance of Dr.M.S.Krupashankara on the topic 'Synthesis and Characterization of Phenol Based Polymeric Resin, Extracted from Cashew Nut Shell Liquid Oil for Industrial Applications, from Karnataka State Council for Science and Technology - Student Project Program - Aug. 2017.

Achievements in Innovative Projects

RVCE solar car team is participating in Bridgestone World Solar Challenge, Australia to be held in Oct 17. The team secured twenty ninth place in WSC15 in the Challenger Class.

Team HELIOS RACING won Second Lightest Car Award, Sixth in Design Event, Eighth in Acceleration, Eighth in Manoeuvrability, Twelfth in Business Presentation in Enduro Student India- 2017, and Third in Suspension and Traction in Baja SAE India- 2017.

Ashwa Racing participated in Formula Hybrid 2017 in New Hampshire, USA and stood Second

overall. The combustion team took part in the Formula Student event, held in Verano De Milageri, Italy FSAE Italy July 2017 and was one amongst top 25 teams in the world.

Team Chimera working on hybrid electric style formula cars is participating in 2017 Student Formula Japan event during 5 - 10 Sept, 17 in Japan. The present prototype runs on a 65HP AC motor powered by 96V 5.6 KWH Lithium Polymer batteries.

Project Garuda develops Sustainable, Green and efficient technology for mobility. The team completed 11 years and designed, fabricated, and tested 10 super mileage cars which include six prototypes, two gasoline Urban-concept, and one electric Urban-Concept in its operation. It is the only Indian team to participate and clear all technical inspections under Urban-concept Electric category at SEM-A 2017.

RVCE - Tata Technologies Ready Engineer Programme

RVCE signed MOU with Tata Technologies, along with six other Engineering Colleges for the Ready Engineer Programme for the students of Mechanical Engineering and IEM. The students of Fifth Semester can enrol for the forty hour course on Automotive Engineering taught through Design and Analysis tool. On successful completion of the course the students will be issued certificates by Tata Technologies. Faculty of RVCE and the networked Institutions were trained at RVCE by the lead faculty of Tata Technologies in July 2017.

Placement

Placement starts from July every year. 2013-17 students were recruited with highest salary package of Rs 8 lakh per annum from Honda motors. BEL visited RVCE for first time for our students. Average salary offered was Rs 4 lakh per annum with a total of 117 offers in 2017.

Companies visited for academic year 2016-17	Offers
BOSCH	1
ITC ABD	2
ROBERT BOSCH	2
EXL ANALYTICS	1
ALSTOM	6
CTS	18
ACCENTURE	18
INFOSYS	4
TREDENCE	2
HYUNDAI (MOBIS)	2
ABB	1
AVTEC	3
ROLLS ROYCE	3
HERO MOTO CORP	3
RELIANCE INDUSTRIES LTD	2
ITC FOODS	1
ITK PRESTIGE	3
RENAULT NISSAN	5
HONDA MOTORS	2
FEDERAL MOGUL	2
ESI	2
BEL	2
L&T TECH SERVICES	5
WEIR GROUP	2
TIME INC	2
CUEMATH	3
TAAL TECH	5
UNBXD	1
LAM RESEARCH	1
TEXPORT	2
JUBILANT	2
STELLAR	2
HOMAG	1

ME Department Project Competition

Project exhibition was held on 3 May 2017 at which 46 teams of final year Mechanical Engineering demonstrated their projects undertaken in industries (3 teams), R & D Organisations (4 teams) and the rest in-house. Three best projects in each category 'Product Based' and 'Research Based' were awarded prizes at 'ATHOME' on 18 May 2017 and the details are:

Title	Student Team / Faculty Guide
Product Based	
Design and Fabrication of Tractor Mounted Arecanut Harvester	Abhishek G Y, K Rama Mohan R, Sandeep K H, Rahul B Badenkhal, Dr. N Shanmukha, Dr. R Sridhar
Development of Decrumpling Machine	B Ankitha, Aihwarya Jadhav, Chinmaya K R, Shreya D Guddin, Dr. H N Narasimha Murthy
Design & Fabrication of Airborne Wind Turbine for Domestic Purpose	Nikhil Hulkand, M D Shabaaz, Prathap J, Prathamesh H, Dr. M Krishna, Prof. Naveen Prakash N
Research Based	
Synthesis and Characterization of TiO ₂ Thin Film for Gas Sensor	Nikhil Rai, Pratap J, Krishna Poddar, Ningappa, Dr. B W Shivraj
Development & Characterization of a Novel Self-healing Polymer for Protective Coatings	Sunain Azeem, Soorya, Jagadish, Sethupathi, Dr. G R Rajkumar
Computational Analysis of a Multiplex Fuel Injector for use in a aviation Gas Turbine Engine	Adhvik J Shetty, Aditya G, Anurag S, Dr. P R Venkatesh



MechMatters Newsletter

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Message

The newly revised 2016 curriculum is in force for the present third semester. The revised scheme is balanced in its focus to Materials, Manufacturing, Design and Thermal streams with basic and advanced courses. The scheme ensures adequate skills in Machine Drawing and Numerical tools. Quality of student projects is enhanced by the mandatory application of experimental, numerical and analytical techniques. The students are advised to undertake product based research projects leading to patents and publication. The department has around twenty sponsored research and consultancy on-going projects undertaken by the faculty. More efforts for publication, sponsored projects, consultancy and patents can elevate the credentials of the department. Let us hope for involved participation and mutual growth.

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Mech. Dept. Vision
Imparting quality education in Design, Materials, Thermal and Manufacturing with emphasis on research, sustainable technologies and entrepreneurship for societal symbiosis.

Progress is made by trial and failure; the failures are generally a hundred times more numerous than the successes; yet they are usually left unchronicled.
-William Ramsay

Graduation Day

Graduation day was held on July 29, 2017 to award Provisional Degree Certificates to 2013-2017 batch of students. Dr. Yaj Medury, Vice-Chancellor of Bennett University, Noida delivered the convocation address and advised the students to create wealth for the welfare of themselves, organisation and the society for reducing disparity. Degrees were awarded to 114 Mechanical Engineering graduates. Adhvik Jagdish Shetty secured First Rank and won Gold Medal.

Rank Holders	CGPA
Abhvik Jagdish Shetty	9.44
Lobu More	9.37
Shetty Sohan Jayakar	9.30
Bhargav M. Belle	9.27
Shreya Dayanand Guddin	9.26
Aditya Ghodgaonkar	9.26
B. Ankitha	9.20
Akshay Kumar P.	9.20
Kumar Huralikuppi	9.15
Govindraj D. Sannellappanavar	9.15

Faculty Superannuation

Prof. R. Sathyanarayan superannuated on 30 June 2017 after serving the department for 27 years. The department places on record his invaluable services to the department.



Post Doctoral Fellowship

Dr. Bharatish A joined IIT Madras for Post Doctoral Fellowship to work on laser machining of high temperature alloys for a period of one year (from June 2017) under the guidance of Dr Saundarapandian S, Professor, Dept. of Mech. Engg, IIT - Madras.

Faculty on Sabbatical

Dr. Shanmukha Nagaraj, Professor at Mechanical Engg. dept., went on Sabbatical to work for consultancy project at TE connectivity, Bengaluru during June-July 2017.



Patents Applied

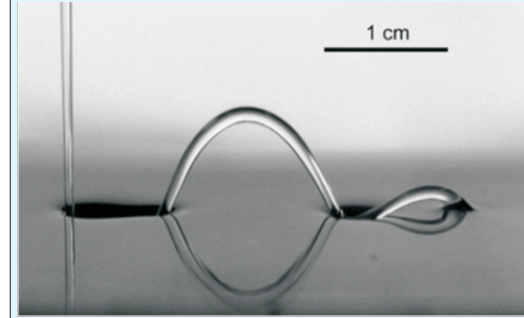
1. M. Krishna and Nandini Nadar applied for Indian Patent on "Multi-Walled Carbon Nanotube Reinforced Lead-free KNN Piezoelectric Ceramic Materials". Patent No. 201641029478.
2. Sridhar R, Shanmukha Nagaraj applied for Indian Patent on "Tractor mounted aerial work platform for arecanut farming".
3. G.R. Rajkumar, M. Krishna, K.A. Vishnumurthy applied for Indian patent on "Development of novel self healing polymer for protective coating".

ED Cell Innovative Projects Competition

Entrepreneurship Development Cell of RVCE organised innovative projects competition during 4 - 5 May 17. Overall 12 projects out of which three from Mechanical Engineering were shortlisted for the contest. The project 'Development and Characterisation of a novel self healing polymer for protective coating' undertaken by Sunain azeem, Soorya Jagadish and Sethupathi won third prize with a cash incentive of Rs 1500/-. The project is guided by Dr. G.R. Rajkumar.

Technical Article: Bouncing Jet - Amit R. Patil, Asst. Professor, ME Dept.

In our understanding of science if a jet hits a flowing fluid, it will mix with the flowing fluid to become a homogeneous mixture flow. But particularly it is not the case and you at some point may seem astounding to hear that the flowing fluid will make the impinging jet to bounce from its surface of the flowing fluid, not only once but twice.



This experiment was carried out at the centre for non-linear dynamics in University of Texas,

Austin and the photographs are captured by Dr. Thrasher and colleagues. The phenomena occur due to formation of thin layer of air surrounding the jet and surface tension of the flowing fluid. When the jet impacts on the surface of the flow it comes with a thin layer of air around it. Hence, this will cause a layer of air inside the flowing fluid, this air around the jet provides a very low friction for it and later the surface tension of the flowing fluid reflects the jet towards the surface. Bouncing was observed for viscosities ranging from 56 to 560 times that of water. This kind of flow prevail under controlled flow characteristics of both fluids, hence cannot be seen in every day scenarios. According to Dr. Thrasher the important factor for bouncing, is the layer of air around it and should not break into bubbles.

In a more or less similar manner, researcher at University of Twente in Netherlands experimented by dropping a jet of shampoo at around 20cm height to discover a second jet coming out of a heap and captured a video. This

phenomenon was however first observed by British engineer Alan Kaye in 1963 and said that he could not explain the phenomena. This type of fluid flow is called as Kaye effect and more famously as "leaping shampoo trick". In this experiment, a jet of shampoo is dropped on hard surface and after collecting at a point and forming a heap a second stream ejects from it and grows to certain extent to collapse the Kaye effect. The effect can be more prominently visualized in a slow-motion video. But why are the two experiments different? Well the answer lies in the type of fluid you are using. In the first experiment, the fluid was oil which is referred to as a Newtonian fluid, while the second experiment used shampoo which is a Non-Newtonian fluid. Dr. Thrasher believes that understanding why some liquid bounce and some don't will help us improve metal casting process, where liquid metal is poured in the mold and those designing liquid aeration system should understand to avoid such bouncing effect.

experimental studies on nanostructured composite thin film multi-layer coatings' sponsored by DST-SERB, Investigators: Dr. MS Krupashankara and Dr. P. V. Srihari; Microwave assisted Sol-Gel Synthesis and Characterization of Metal Oxide Thin Films, funded by AICTE, Investigator: Dr. M. Krishna; Development of Natural Fiber based Oil Adsorbent for Commercial and Industrial Applications, funded by AICTE, Investigator: Dr. M. S. Krupashankar; Development of Multifunctional Electrospun Nanofibrous Composites for Protective Clothing, funded by AICTE, Investigator: Dr. H. N. Narasimha Murthy

Invited Talks by the Faculty

1. Mr. Jinka Ranganayakulu presented talk "H-Type Centre Buffer Coupler on Indian Railway Coaches" at Supervisors Training Centre, South Western Railway, Bangalore Division, Bangalore - 560 023 on 15/05/2017 and 16.05.2017. The talk includes the design features, understanding jerk phenomena, anti-creep test, profile gauges and their applications. About 25 engineers and technicians from both Southern and South Western Railways attended the program.
2. Dr. G. R. Rajkumar presented invited talk "Impact damage on Fiber metal laminates" at Faculty development programme on "Emerging Research areas and trends in mechanical Engineering", BNMIT, Bangalore on 31.07.2017. The talk included failure mechanisms under low velocity impact, damage initiation and propagation on FMLs. About 30 faculties from various colleges attended program.

Journal Publications since May 2017

1. Ramesh S Sharma, Askik K P, N Raghavendra, "Effect of filler on mechanical properties of natural fiber reinforced composites", Asian Journal of Chemistry, Vol. 29, No.8, June 2017, pp 1697-1701
2. Ramesh S Sharma, Askik K P, Subhash Patil, "Evaluation of tensile, flexural and impact strength of natural and glass fiber reinforced hybrid composites", Renewable Bioresources, Vol. 5 No. 1, May 2017, pp 1-7
3. Vivek A, Shivraj B W, Akshay Chavan, H N Narashima Murthy, M Krishna, B S Satyanarayana, "Optimization of Spin Coating Parameters for Preparation of ZnO Thin Films by Grey-Taguchi Method". International Journal of Nanomanufacturing, Inderscience Publishers, Vol. 15, No. 3, 2017, 197-209
4. Amit V. Sridhar R. Gangadhar angadi, Mamtha V. Vishnumurthy K. A. Narasimha murthy H. N., Krishna M., "Development of polyvinyl acetate thin films by electro spinning for sensor application", Journal of Applied nanoscience, Springer publication.
5. L. S. Ashwini, R. Sridhar, S. S. Bellad, "Dielectric and Magnetolectric Properties of Li-Mg Ferrite: Barium Titanate Composites", accepted for publication by Journal of Materials Chemistry and Physics, Elsevier publication.

Conference Publications Since May 2017

1. Kiran, J. R. Nataraj, Gangadhar T. G., "Casting simulation of counter weight component", National Conference on Typical Transcend in Mechanical Technology, June 2017.
2. Srinivasa Vinayaka B, Sridhar R, Gangadhar

Angadi Gangadhar T G, "Design, Analysis and Development of a two cavity Injection mold tool for a Component Panel Plate" National Conference on Typical Transcend in Mechanical Technology, June 2017.

3. Madhusudhan ME, Rajkumar GR, Gangadhar T G, "Regularization of material modeling parameters for accurate failure prediction in thermoplastic components of complex geometries" National Conference on Typical Transcend in Mechanical Technology, June 17.

4. Harish S. K, G. R. Rajkumar, Keshava murthy M, "Design of optimum tool geometry for minimization of cutting force for turning of hardened steel", International conference on Materials, Manufacturing and Modelling, at VIT university, Vellore, May 2017.

On-going Sponsored Research Projects

Investigation of Dynamic Characteristics of Multilayered Sandwich Panels, funded by AICTE, Investigators: Dr. Souraba S. H and Dr. H. N. Narasimha Murthy; Investigation of Buckling Performance of Stiffened Polymer Composite Shells for Underwater Vehicle Applications, funded by NRB, Dr. H. N. Narasimha murthy; Investigation of Design & Development of a Twin Screw Oil Expeller for Synthesis of Bio-Fuels, funded by AICTE Investigators: Dr. R. S. Kulkarni, Prof. R. Chandrakumar; Investigation of Design, Development and fabrication of an indigenous 3D printing facility for metal and metal composites based 3D manufacturing, and funded by KCTG, Investigators: Dr. S. Mahendra Kumar, Dr. M. S. Krupashankar, Dr. H. N. Narasimha murthy; Simulation &

3. Dr. H. N. Narasimha Murthy delivered address on Design and Fabrication of Stiffened UUV at CEP held in National Science and Technology Laboratory (NSTL), Vishakhapatnam on 31 Aug 2017. Thirty participants from DRDO laboratories and industries attended the programme.



4. Dr. M. S. Krupashankara delivered address on 3D Printing - A Disruptive technology of this era at IIT Mumbai, 21-22 Aug 17. Thirty participants from academic institutions and industry participated in the programme.

On-going Consultancy Projects

Consultancy projects on design and automation spearheaded by Mechanical faculty are: Energy harvesting using Triboelectric Nano generator, for Rs 10 lakhs; Energy Regeneration using Micro Hydro turbine generation, for Rs 8 lakhs; Large power generation (energy recovery) using Bruderer machine for Rs 8.5 Lakhs, from TE connectivity; Characterization and Studies on Reclaimed Waste Foundry Sand as Aggregates in Building for Rs 6.14 Lakhs from Bhuwalka Castings & Forging;

Workshop Conducted/Attended

Dr. M. S. Krupashankara, participated in a five day workshop (7 - 12 Aug 17), on 'Solar Photovoltaic Grid Connected Power Plants' organized jointly by Ministry of New and Renewable Energy, GOI and KPCL, GOK. The training is to certify the participants for providing complete system level solutions for both roof top and solar power plants in on-grid and off-grid configurations.

Dr. L. J. Kirthan conducted three day workshop on Solid Mechanics using ANSYS Workbench, during 26 - 28 July 17 at the Department. The workshop provided hands on related to Structural and Dynamics, Linear and Non-Linear, Material conditions (Isotropic, Orthotropic and Anisotropic) and Fracture Applications. Subhash Raja Rao Patil conducted training on non-linear buckling analysis of underwater structures. Twelve M.Tech students attended the workshop.

Pre-Ph.D. Comprehensive Viva

Prof. Roopa T S, completed Pre-Ph.D. Comprehensive viva on the topic Development

of PVDF/Nanofiller thin films for sensors, under the guidance of Dr. H. N. Narasimha Murthy, in Apr 2017.

Prof. Mamtha V, completed Pre-Ph.D Comprehensive viva on the topic Parametric study of Electrospinning of Polymer Nanocomposites, under the guidance of Dr. H. N. Narasimha Murthy, in July 2017.

Ph.D. Awarded

Raghavendra N completed final Ph.D viva voce in Tumkur University on 29th June 2017 on the thesis titled "Synthesis and Characterization of Organomodified Indian Bentonite Nanoclay/Vinylester Nanocomposites" under the guidance of Dr. H. N. Narasimha Murthy.

Rajanish M completed final Ph.D viva voce, in VTU, on 18th July 2017 on the thesis titled "Influence of nanoparticles on the mechanical properties of unidirectional fibre reinforced epoxy composite laminates at different angles of fibre orientation", under the guidance of Dr. N. V. Nanjundaradhya.

Kodandarama completed final Ph.D viva voce in Tumkur university on 3rd June 2017 on the thesis titled "Investigation on effect of electrocodeposition process parameters on nano structured Ni-Wc composite coating properties." under the guidance of Dr. M. Krishna.

Shivaraj B. W. completed final Ph.D viva voce in Tumkur university on 9th August 2017 on the thesis titled "Properties and performance of Zinc Oxide Thin films for Gas Sensors" under the guidance of Dr. H. N. Narasimha Murthy.

New Faculty Inducted

Prof. Prapul Chandra A. C. joined as Assistant Professor. He has M.Tech Degree in Manufacturing Science and is presently pursuing doctoral studies. He has five years of experience in teaching. He has an international journal publication.

Prof. Amit Ravindra Patil joined as Assistant Professor. He holds MS from University of Maryland, USA in Thermal and Fluid Sciences. He has two International publications. We welcome them to the department and wish them every success.

Dr. Avinash joined as Assistant Professor. He has M.S and Ph.D. in Thermal Sciences from IIT Madras. He has four international journal publications.

Achievers of 2013 - 2017 Batch of Mechanical Engineering

Adhvik Jagdish Shetty secured First Rank with CGPA of 9.44 and 95.95 Percentile in CAT 2016, Score of 334 in GRE and 116 in TOEFL, was Placement coordinator, Shortlisted by the Indian Academy of Science and Summer Research Fellowship Programme 2016, Director of Literary Services and RC RVCE 2015-16, Recipient of several other scholarships

Abhish Kumar H, recipient of NHFDC Scholarship, participated in BAJASAE INDIA 2015, 16 and 17 and BAJA Student India 2015, 16 and ENDURO STUDENT INDIA 2017.

Shreya Guddin, Chinmaya K R, B. Ankitha, G Arun Rahul, Govatsa Acharya represented India in Shell Eco Marathon Asia 2017 in Singapore, as part of Project Garuda.

Ajit Dundappa Chachadi - Member of VYOMA, Participated in DBF - 2016 organised by AIAA. Kannada Sangha Core Committee member, Creativity Team head for KAHALE-16.

Aniketh Satyanarayana - Member of Team Chimera, Participated in Student Formula Japan 16.

Deepak Bhat - 98.75 percentile in CAT 16, Convener and Treasurer of 8th Mile RVCE-16.

Himanshu Hegde - Team Helios Racing participated in Baja Student India 2015, Baja SAE India 2016, Baja SAE Rochester 2016, Enduro Student India 2017, Baja SAE India 2017.

Kovvuri Ram Pruthvi Reddy - Badminton Doubles II Place, held in VIT 2016.

Manuvijay - Participated in All India Inter University meet, Member of RVCE athletic team, basketball team. In Sports 2013 - Silver in 110 m hurdles, Internals VTU 2014 - Gold 110 m hurdles, Represented VTU at All India Inter University Meet, 2015 - Gold 110 m hurdles and Bronze in 400 m Hurdles.

Mohammad Shabaaz - Participated in Design Build Fly 2016 organized by American Institute of Aeronautics and Astronautics and Nagesh PC - Chief Student coordinator of Kannada Sangha

B. Ankitha, Nagesh P C Received MHRD Scholarship during 2015-17.

Nishanth T Rao Participated in Sangeet Samrat (National level) Gopinathdas Music competition (National level) Gayanasamaja competition (state), Received Karnataka Sangeeta Nriya Academy scholarship.

K Pavan Kumar - Won Prizes in Dance Competitions held at Christ, St. Joseph's, IIM and others colleges in 2016, Collaborated RVCE and Toyota Kirloskar Motor for CSR event held in Bengaluru.

Ponnanna AP - Captain of RVCE Hockey team and Winners of Zonals, 2017 and Sagar Patil - Winner of Semifinals of ACQREX QUIZ conducted by ISHRAE.

Sethupathi K - President of RVQUIZ Corp, Member of RVCE Basketball Team since first year Winner of various Quizzes at National, State and Bangalore level such as Quest 2016 and Prayas 2016, Winner of Basketball tournaments such as VTU Zonals, Momentum and Kreedotsav.