

NEWSMECHERS

DEPARTMENT OF MECHANICAL ENGINEERING
RAJAGIRI SCHOOL OF ENGINEERING AND TECHNOLOGY
NBA ACCREDITED B. TECH PROGRAMME IN MECHANICAL ENGINEERING

ISSUE 8 | JULY 2019 - JUNE 2020

ABOUT THE DEPARTMENT

Established in the year 2012 with an initial intake of 60 students in 2011, the Department of Mechanical Engineering has progressed by leaps and bounds in all respects in a short period. Presently the department admits 120 students per year to its undergraduate study programme. The department has attracted highly qualified and experienced personnel from various streams of Mechanical Engineering as its faculty. 4 years B.Tech program got accredited by NBA in July 2019.

MESSAGE FROM HOD

On behalf of all the staff and students of the Mechanical Engineering Department, a very warm welcome to the Mechanical Engineering newsletter. I congratulate the students and the skills faculty for the commendable job they have done in bringing out this newsletter. I am happy to see that this newsletter is released in the year when the department is accredited with NBA, Our students and faculty continue to strive for futuristic technology and research I hope this newsletter gives readers insight into the new technology and activities of the department



Dr. Thankachan T Pullan
HOD MECHANICAL DEPT



VISION

To evolve into a centre of excellence by imparting professional education in mechanical engineering with a unique academic and research ambience that fosters innovation, creativity and excellence

MISSION

- * To have state of the art infrastructure facilities.
- * To have highly qualified and experienced faculty from academics, research, organizations, and industries.
- * To develop students as socially committed professionals with sound engineering knowledge, creative minds, leadership qualities, and practical skills.

EDITORIAL BOARD

We are extremely happy to release the eighth edition of the Mechanical Engineering Department Newsletter NEWSMECHERS: This will act as a communication channel. among the faculty, students and parents in the Mechanical Engineering Department.



STUDENT ACHIEVEMENT

1. SAE BAJA is a national level competition that was organized by Mahindra and a team of 25 students of Rajagiri school of engineering and technology attended the event held from 12/07/2019-13/07/2019. the competition comprises two rounds, in which the first round where the vehicle design was analyzed and validated and the second round where the vehicle was brought for the racing competition. A team of five students constituting Firaz, Ankith, Nipul, Daniel, and Steve represented the vehicle design. Our team secured 4th at the state level and 139th national level.



2. A paper on “An integrated approach to plastic sorting” in the international journal of mechanical and production engineering research and development was published (vol 9 special issue, august 2019 21-32) by Jibin Nafar, Anashwara S Nair, Aswin Biju, Jeswin Kaleeckal Jacob and was guided by Mr. Senjo Manuel and Dr. Joseph Babu K.

3. A paper on “the bio-gas purification unit of small-scale biogas digesters in rural areas” in the international journal of mechanical and production engineering research and development was published (vol 9 special issue, august 2019,33-39) by Many Sebastian, Linoy Antony, Jowin Jose, Sebin Johny was guided by Mr. Johnpaul CD and Mr. Senjo Manuel.

4. A mobile disinfection robot was developed by a set of 4 students Jerrin Saju, Aswin S Nair, Ashik Faizal, and Gokul Das VR, which was guided by Mr. Vishnu Sankar and John M. George. The development of the disinfection robot led to the contactless sanitization of the places.

WORKSHOP ORGANIZED

A one-day workshop on 3D printing by ASME Rset in association with inker robotics, Kerala & Sparx 3D held on 28 September 2020. the workshop delivered the design guidelines of 3D printing and a demo of 3 in 1 rapid prototyping. Mr. Paul George was the resource person for software learning and hands-on sessions. the faculty coordinators were Dr. joseph babu k and Mr. Vishnu Sankar.



KTU athletic meet 4×100 mtrs relay - first prize

EVENT ORGANISED

An ASME Efx is a one-day event designed to bring the excitement, community, innovation, and vibrant experience of an ASME E-Fest’s engineering festival, to engineering students at local colleges and universities around the world. RSET is one of the nine host institutions of ASME Efx19 in India, held on 19 October 2019. The event had a talk on “turn around a company through standardization and technology up-graduation” by Mr. V.B Ramachandran, former chairman and managing director -HOCL, and a talk on human-powered vehicle challenge by Mr. Sunder Raman Mohan, GM Siemens India limited and a session on robotics by Inker robotics. Faculty Coordinators: Dr. Joseph Babu K.&Mr. Vishnu Sankar, Assistant Professors of Mechanical Engineering Department, RSET

Multi- utility unmanned disinfection robot - Rakshak ' 20



ASME Efx Fest

FACULTY DEVELOPMENT PROGRAM

1. A faculty development program on 64 congresses of the Indian society of theoretical and applied mechanics was held at IIT Bhubaneswar organized by IIT Kharagpur held from 9th of December to 12th of December 2019. A paper presentation based on the title "Numerical studies on the eight stability of the shape optimized NACA0012 in ground effect. faculty members: Mr. Jithin PN, Dr. Ajith Kumar A.
2. A faculty development program on the topic of computational methods in fluid and structural methods held from 1st July to 12th July 2019. The program was sponsored by AICTE. The faculty coordinators who attended the program are Dr. Ajith Kumar, Dr. Nivish George, Dr. Manoj G tharian, and Mr. Jithin PN.
3. A faculty development program on the topic of computational methods in engineering held from 8th July to 12th July 2019. The program was sponsored by KTU. The faculty coordinators who attended the program are Dr. Ajith Kumar, Dr. Nivish George, Dr. Manoj G tharian, and Mr. Jithin PN.

SPECIAL ACHIEVEMENTS

1. Mr. Vishnu Sankar was the jury member of Mahindra AWIM 2019(jet toy competition – state level) organized by SAE INDIA at RSET, Kakkannad held on 17/12/2019.
2. Mr. Vishnu Sankar was Granted a patent in the field of Mechanical engineering for the topic Fuzzy Logic Based System and Method for Optimization of Thermal Barrier Coating thickness in Internal Combustion Engines.



ASME EFX Fest

FACULTY PUBLICATIONS

1. Mr. Vishnu Sankar Published a paper on Brainwave-Assisted Drive for Electric Vehicles
2. Mr. Vishnu Sankar has published a paper on Detachable Module for Semi-automating a Conventional Wheel-chair
3. Mr. Vishnu Sankar has published a paper on Gasification of Sawdust in Bubbling Fluidised Bed Gasifier
4. Mr. Uday Sankar K has published a paper on Decision Support Framework for Highway Network Design
5. Dr. Ajith Kumar A has published a paper on Numerical studies on the height stability of a shape optimized NACA 0012 In-Ground Effect.
6. Dr. Ajith Kumar A. has published a paper on Investigations on the shape optimization of NACA0012 in ground effect.
7. Mr. Vishnu Sankar has published a paper on Combined effects of thermal barrier coating and blending of diesel fuel with biodiesel in diesel engines
8. Mr. Vishnu Sankar has published a paper on Optimized Thermal Barrier Coating for Gas Turbine Blades
9. Fr. Dr. Joel George Pullolil has published a paper on Experimental Investigation on the Feasibility of Sugarcane Bagasse for Gasification
10. Mr. Jeffin Johnson has published a paper on Characterization of Al7075 hybrid composites
11. Mr. Jeffin Johnson and Mr. John Paul C D has published a paper on the Design of Orthodox tea leaf chopping mechanism
12. Mr. Jeffin Johnson has published a paper on Recent developments in Al7075 hybrid composites and study its microstructure and mechanical characteristics.
13. Mr. Jeffin Johnson has published a paper on Total Quality Management with Total Productive Maintenance to develop Maintenance Quality Function Deployment model and its implementation study in food industry.
14. Mr. Manu Joseph has published a paper on the Design of a mechanized buggy for the removal of solid wastes from drainages
15. Mr. Jeffin Johnson has published a paper on the Design of a mechanized buggy for the removal of solid wastes from drainages
16. Mr. Sidheek P. A. has published a paper on Semi-Autonomous RC Robot And Brainwave Technology
17. Fr. Dr. Joel George Pullolil has published a paper on the Theoretical and experimental feasibility study of groundnut shell gasification in a fluidized bed gasifier
18. Mr. P P Krishnaraj has published a paper on Performance Evaluation of an Improved Dual Purpose Solar Collector
19. Fr. Dr. Joel George Pullolil has published a paper on Enhancement of Biofuel Quality Through Sustainable In-bed Additives
20. Fr. Dr. Joel George Pullolil has published a paper on Gasification of Sawdust in Bubbling Fluidised Bed Gasifier
21. Mr. Jithin P. N. has published a paper on Investigations on the shape optimization of NACA0012 in ground effect
22. Mr. Jithin P. N. has published a paper on Numerical studies on the height stability of a shape optimized NACA 0012 In-Ground effect

23. Mr. John Paul C D has published a paper on 'The biogas purification unit for small scale biogas digester in rural areas.

24. Dr. Joseph Babu K has published a paper on an integrated approach to plastic sorting.

25. Mr. Senjo Manuel has published a paper on An Integrated Approach To Plastic Sorting.

26. Mr. Senjo Manuel has published a paper on 'The biogas purification unit for small scale biogas digester in rural areas.

27. Dr. Thankachan T P has published a paper on Fabrication and Testing of Stirling Engine.

28. Dr. Thankachan T P has published a paper on Production and Machining Performance Study of Nano Al₂O₃ Particle-Reinforced (10 & 20%) LM25 Aluminum Alloy Composites.

7. Environment and sustainability : Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and the need for sustainable development

8. Ethics : Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.

9. Individual and team work: Function effectively as an individual and as a member or leader in diverse teams, and in multi-disciplinary settings.

10. Communication : Communicate effectively on complex Engineering activities with the Engineering Community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions,

11. Project management and finance : Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Apply their knowledge in the domain of engineering mechanics, and thermal and fluid sciences to solve engineering problems utilizing advanced technology.

PSO 2: Successfully apply the principles of design, analysis, and implementation of mechanical systems/processes which have been learned as a part of the curriculum.

PSO 3: Develop and implement new ideas on product design and development with the help of modern CAD-CAM tools, while ensuring best manufacturing practices.

PROGRAMME OUTCOMES (POS)

1. Engineering Knowledge: Apply the knowledge of Mathematics, Science, Engineering fundamentals, and Mechanical Engineering to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems, reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, social, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The Engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOS)

PEO 1 Demonstrate the ability to analyze, formulate and solve design engineering/real life problems based on his/her solid foundation in mathematics, science and engineering.

PEO 2 Showcased the ability to apply their knowledge and skills for a successful career in diverse domains viz.. industry/technical, research and higher education academia with creativity, commitment and social consciousness.

PEO 3: Exhibit professionalism, ethical attitude, communication skill, team work, multi-disciplinary approach, professional development through continued education and an ability to relate engineering issues to broader social context.

NEWSMECHERS TEAM



JAMES MATHEW
(FACULTY INCHARGE)



JOEL THAMBI
S1 ME BETA



ALLEN S ABRAHAM
S1 ME ALPHA



JOHAN JOHN
S1 ME BETA



ARVID SHAJU
S1 ME ALPHA



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S1 ME ALPHA