

ANNUAL ISSUE OF THE YEAR 2020-21

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QUOTES:

- “You must be the change you wish to see in the world” – Mahatma Gandhi.
- “Education is the most powerful weapon, which you can use to change the world” – Dr. APJ Abdul Kalam.
- “Science is organized knowledge. Wisdom is organized life.” – Immanuel Kant.

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VISION AND MISSION OF THE DEPARTMENT

Vision: To produce high caliber, competent, industry oriented Mechanical Engineers

Mission: To impart quality education by providing state of art technical facilities and enhance the professional abilities to meet the demands of the ever-changing manufacturing industry.

LATEST DEVELOPMENTS IN MECHANICAL ENGINEERING

NOVEL BIOMEDICAL INSTRUMENT USED IN LAPAROSCOPIC SURGERIES

Dr. Abdul Raheem Junaidi, Assistant Professor in Mechanical Engineering Department carried out research in the latest technological arena of Biomedical field facilitating medical instruments for the surgeons and patients and performed numerical approaches in Computational Fluid Dynamics domain. This technological advancement has spearheaded ground-breaking research in turbulent flows and laparoscopic biomedical instruments. His research investigation delved into numerical simulations to unravel the complexities of fluid behavior, particularly in Newtonian, non-Newtonian, and multi-phase fluid flows.



The innovative surgical forceps developed through Dr. Junaidi's research offer a plethora of advantages. They eliminate the need for re-insertion of dissectors with suction-irrigators, presenting a reusable, multi-functional, non-toxic, corrosion-resistant, and cost-effective solution. Dr. Junaidi's contributions have been recognized with the publication of two articles in Taylor and Francis journals, 2 articles in scopus of book chapters and two articles in SCI journals. Furthermore, his work has been acknowledged in a SCI journal, detailing the simulation of insufflation gas via a versatile, multi-functional forceps designed for laparoscopic surgeries. Dr. Junaidi's research has not only contributed significantly to academic literature but has also resulted in the granting of two patents, a testament to the novelty and practical applicability of latest advancement in the field of mechanical engineering. His accomplishments mark a remarkable milestone in the advancement of surgical technology and fluid dynamics.

SAE (SOCIETY OF AUTOMOTIVE ENGINEERS):


About SAE:

SAE stands for Society of Automotive Engineers, is a one-stop resource for standards development, events, technical information and expertise used in designing, building, maintaining, and operating self-propelled vehicles for use on land or sea, in air or space. SAE International has a diverse membership of engineers, business executives, educators, and students from across the globe, who share information and exchange ideas for advancing the engineering of mobility systems.

Objectives of SAE:

SAE demonstrates commitment to society through local, national, and international public awareness programs that promote vehicle safety and maintenance and energy resource conservation. The SAE Foundation, is deeply involved in the engineering-related education of children, teachers, college students, and faculty by conducting seminars, webinars, symposia, conferences and competitions like Baja SAE Series, SAE Aero Design, Clean Snowmobile , Formula SAE Series & Super mileage. For more information, refer to Baja Website www.bajasaeindia.org.

Overall Dimensions		Overall Performance	
Overall width	60"(1524mm)	Maximum Speed (kmph)	55
Overall length	77"(1956mm)	Maximum Acceleration (m/s ²)	3.45
Front Track width	53"(1346mm)	Gradeability (%)	63 % (32°)
Rear Track width	53"(1346mm)	Stopping Distance (m)	13.27
Wheelbase	58"(1473mm)		
Ground Clearance	12"(305mm)		
Tyres		Comprehensive Specifications	
Front (in)	21x7x10	Suspension	Front:- Double Wishbone Rear:- 3 Link Trailing Arm
Rear (in)	21x7x10	Transmission	CVTech CVT with Reduction Unit
Tyre Dia x Width x Rim Dia		Steering	Custom Rack and Pinion
Weight		Brakes	Front Rotor:- O.D. 160mm Rear Rotor :- O.D. 130mm Caliper: AMK Industries Floating Caliper, Piston Bore Dia 26mm
Kerb Weight	157 kg		
FAW : RAW	38 : 62		



SAE BAJA Virtual Vehicle 2020

SAE INDIA MJCET Chapter

- **SAE** – “*Society of Automotive Engineers*” is one of the largest student organizations in automotive Industry. **SAE INDIA** is an affiliate society of **SAE International** registered in India as an Indian nonprofit engineering and scientific society dedicated to the advancement of mobility industry in India.
- **SAE INDIA MJCET chapter** was started in the year 2005. Since its inception the students of the club are consistently participating in all the events organized by the SAE INDIA.
- **Centre for Vehicle Design and Fabrication**
Centre for Vehicle Design and Fabrication is established to provide platform and facilities to the students having interest in automotive sector. Centre provides facilities to the students taking projects in design and fabrication of vehicles or the student teams participating in inter state or National level competitions of vehicle building. The centre was inaugurated by Janab Khan Mohammed Lateef Khan Sahab, Hon.

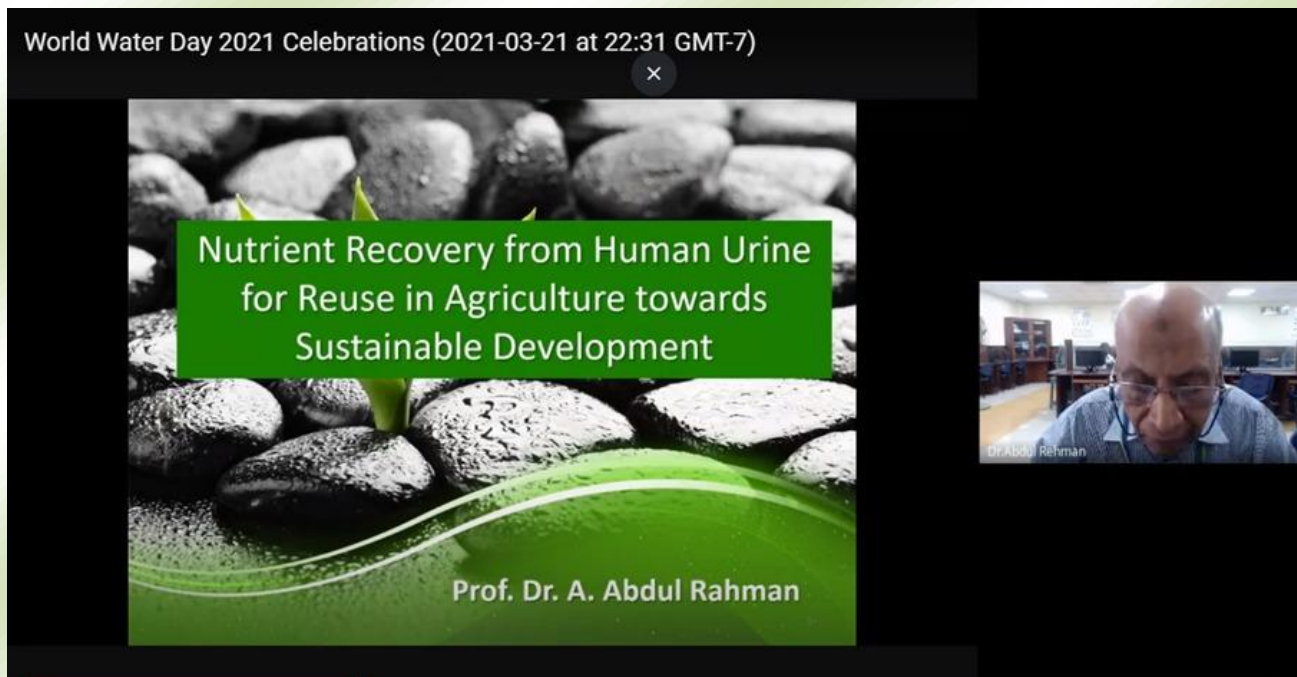
Chairman, Janab Waliullah Saheb, Vice Chairman, Janab Zafar Javeed Saheb, Hon. Secretary, and board members of S.U.E.S. on 21st September, 2018.

All SAE-MJCET club activities are also carried out from this centre. Till date our students fabricated All terrain vehicles, Formula racing vehicle, Go-carting vehicles, electric vehicles, solar vehicles and All terrain bike and participated in many national level competitions or events like SAE Baja, SAE Supra, Quad Torq, Go-karting championships, etc. Dr. Mohd. Viquar Mohiuddin, Professor and Head, MED and Dr. D. Srinivas Rao, Professor, MED look over all the activities associated with the centre. Two National Events: (1) SAE BAJA and (2) SAE SUPRA .

In the year 2021, the team MJCET has participated in SAE Virtual Baja held in 2020 and secured 3rd rank in the Telangana State.

ENGINEERS WITHOUT BORDERS (EWB):

On the occasion of World Water Day, EWD-MJCET has organized an event “Nutrient Recovery from Human Urine for Reuse in Agriculture towards Sustainable Development” on 22nd of March, 2021. The session was chaired by Prof. A. Abdul Rahman, Expert Member (formerly) eastern and western ghat research, Ministry of Environment and Forest, presently working as Professor in Sri Sai Ram Engineering College, Chennai.



UNNAT BHARAT ABHIYAN (UBA):

Unnat Bharat Abhiyan is a flagship program of the MHRD, with the intention to enrich Rural India. The Mission of UBA is to enable higher educational institutions to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. Representatives of MJCET are Dr. Mohd. Sadak Ali Khan, Professor, MED – Project Coordinator of UBA; Mr. Barkat Ali Khan, Assistant Professor, CED; Mr. K. Mahammad Rafi, Assistant Professor, EED; and Mr. V. Dharam Singh, Assistant Professor, MED are Active Members. Under this activity Muffakham Jah college of engineering and Technology has adopted the five villages, namely 1. Gudi Thanda, 2. Koyyagundu Thanda, 3. Dasu gadda thanda, 4. Hanuman nagar, and 5. Koyya gundu Thanda of Sangareddy District. College has successfully completed village survey for all the five allotted villages and four house hold survey and the information of the

same was uploaded on UBA website. In 2021, the House hold survey of the Tunikala Thanda is completed with the following faculty & staff members.

1. Dr. Mohd Sadak Ali Khan (Project Coordinator & Professor in M.E.D.)
2. Mohammad Rafi, Assistant professor (E.E.E.)
3. Anand Kumar, Assistant professor (M.E.D.)
4. Irfan Sadaq, Assistant professor (M.E.D.)
5. Mohammed Qutubuddin , Lab Technician (M.E.D.)

Representatives of MJCET are in regular contact with villages sarpanches through phones calls, WhatsApp and email messages during this pandemic, especially to guide and motivate the people of the villages to take precautionary measures to prevent the spread of Covid-19 disease.

DEPARTMENTAL ACTIVITIES

Workshops, Seminars Conducted by Department

- A guest lecture on CFD (online) was organized on 12th October 2020, by Dr. Karthik V.Bulusu, Associate Professor, Department of Mechanical and Aerospace Engineering.
- One week online Workshop on Society of Automotive Engineering from 04th to 9th January, 2021
- One week online Workshop was organized by MED, on Society of Automotive Engineering from 04th to 9th January, 2021.
- A Webinar on Importance of Literature review, IPR was conducted by Dr. Ishrat Meera Mirzana, Professor, MED, MJCET on 18th January 2021.
- One week FDP was organized by MED, on Characterization of Materials and Material Testing from 20th to 27th February 2021.
- A Seminar on Hybrid Vehicles was arranged on 12th July 2021 by Dr. Mohammed Mohiuddin, Professor, MED, MJCET.
- A Webinar on, importance of CAD/CAM and automation by Dr. Hakeemuddin Ahmed, Professor and Head, MANNU Polytechnic College, on Kadapa 13th April 2021.
- A Webinar on Project Planning, scheduling and costing was conducted by Mr. Ghulam Mohammed Sayeed Ahmed, Associate Professor, College of Engineering, Adama Science and Technology University, Ethiopia on 6th May 2021.
- A one week FDP on Application of AI in Mechanical Engineering was organized by MED, from 8th to 14th June 2021.

FACULTY ACHIEVEMENTS

EXTERNAL FUNDED PROJECTS

S. No.	Title of the Project / Proposal	Proposal Submitted to	Principal Investigator and co-investigator(s)	Amount (Rs.)
1.	Nanotechnology Applications in Mechanical Engineering (AICTE-ISTE Orientation/ Refresher Program)	ISTE	Dr. Ishrat Meera Mirzana	(3 lakhs)

BEST PAPER AWARD

S. No.	Name of faculty member	Award/Recognition/Achievement details
1	Dr. Ishrat M.M	Best Paper for the paper, "Evaluation of Heat Transfer Rate in Heat sink using FGM", in the 4 th International Conference on Innovations in Mechanical Engineering (ICIME-2021) held on 26 th and 27 th February, 2021, at Gurunanak Institute of Technology.
2	Mrs. N.B.V. Lakshmi Kumari	Best Paper for the paper, "Evaluation of Heat Transfer Rate in Heat sink using FGM", in the 4 th International Conference on Innovations in Mechanical Engineering (ICIME-2021) held on 26 th and 27 th February, 2021, at Gurunanak Institute of Technology.
3	Mr. Abdul Raheem Junaidi	Best Paper for the paper "Advances in laparoscopic surgeries and CFD perspective of Suction-irrigation devices" In the "ICAAMM-2020" organized by Department of Aeronautical & Mechanical engineering, MLRIT, on 24th & 25th July 2020

PATENTS

S. No.	Patent Name	Published / Granted	Patent Application No	Date of Publication / Grant	Name of Inventors, designation and department
1	Machine Learning Based Ball Throwing Machine	Published	202041040702	02-10-2020	Dr. G. Sailaja, Associate Professor, MED; Dr. G. Prasanna Kumar, Associate Professor, MED; & others
2	Stress Detection Cap	Granted	Patent Design Number: 329373-001	10-07-2020	Dr. G. Sailaja, Associate Professor, MED & others

International Journals

1. M. Viqar Mohiuddin, Kamal Ahmed, S. Ferhathullah Hussainy, "Parameter optimization of aluminium alloy centrifugal casting using simulation technique." IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), 17(5), 2020, pp. 13-20.
2. Mohammed Viqar Mohiuddin, Md Muqtar Ahmed Khan, Syed Ferhatullah Hussainy "Topology Optimization of an Aircraft Bracket Without Shape Control." International Journal of Engineering Research and Applications (IJERA), vol.10 (11), 2020, pp 44-54.
3. Mohammed Viqar Mohiuddin, Md Muqtar Ahmed Khan, "Re-design of an Aircraft Bracket Using Topology Optimization Technique", SSRG International Journal of Mechanical Engineering, Volume 7 Issue 11, 42-53, November 2020.
4. M A Mujeeb Iqbal Dr. Ishrat Meera Mirzana, Dr. Sirajuddin Elyas Khany, S. Irfan Sadaq, "Techniques for Damping the Vibrations in Machine Tools", PENSEE, ISSN:0031-4773.
5. G. Sailaja, "Analytical and Numerical Analysis of Knuckle Joint by using Different Materials", Journal of Shanghai Jiaotong University 16 (11), 303-309.
6. Mohd Abdul Samad, Syed Nawazish Mehdi, Syed Khader Basha, "A Modified Cylinder Block-IC Engine Experimentation", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249-8958 (Online), Volume-10 Issue-3, February 2021.
7. MAR Junaidi, H Sista, RCM Kalluri, YVD Rao, AGK Gokhale, "Design and fluid flow simulation of modified laparoscopic forceps", Computer Methods in Biomechanics and Biomedical Engineering Volume 24, 2021 - Issue 8.
8. Junaidi, A. R., Patel, A., Murthy, K. R. C., and Rao, Y. V. D., "Advances in Laparoscopic surgeries and CFD perspective of suction-irrigation devices", American Institute of Physics Conference Series, 2021, vol. 2317, no. 1. doi:10.1063/5.0036257.

International Conferences

1. NBV Lakshmi Kumari, Ishrat M.M., "Thermal Analysis of Functionally Graded Materials used for Heat Sink", Paper Id : 1049, 4th International Conference on Recent Trends in Science, Engineering and Mathematics-2020, 23-24 May 2020.
2. NBV Lakshmi Kumari, Ishrat M.M., "Experimental Analysis of Heat Transfer Rate in heat sink", International Conference on Recent Developments in Mechanical Engineering, ICRDME- 2020, 18-19 December 2020.
3. NBV Lakshmi Kumari, Ishrat M.M., "Evaluation of Heat Transfer rate in Heat Sink using FGM", International Conference on Innovations in Mechanical Engineering, ICIME 2021.
4. G. Sailaja, International Conference on 'Women - Enablers On Change' conducted by Aurora Group of Institutions, Women At Work Place-morality And Ethics, 7th and 8th March 2021.
5. S. Irfan Sadaq. Syed Nawazish Mehdi, "Study on Solar Photovoltaic Panel for Various Slope Angles", 1st International Conference on Developments in Sustainable Materials, Manufacturing and Energy Engineering, 3rd & 4th April 2021.
6. M.A. Mujeeb Iqbal, S. Irfan Sadaq, "Structural, Thermal & Modal Analysis of Exhaust Manifold for Multi Cylinder Engine", 4th International Conference on Innovations in Mechanical Engineering (ICIME - 2021), 26th & 27th Feb 2021.
7. Abdul Raheem Junaidi, "CFD Studies on the Modified Laparoscopic Instrument used in Minimally Invasive Surgeries", 2nd International Conference on Future Learning Aspects of Mechanical Engineering conference, 5-6 Aug 2020.

STUDENT INFORMATION

ROLL OF HONOURS

The following students of Mechanical Engineering Department have excelled in their academic performance and succeeded in achieving the University Ranks

S.No	Name of the student	Hall ticket Number	Percentage Secured	University Rank
1	Mohammed Abdul Noor	160417736056	85.72	II
2	Syed Shoaibullah Hussaini	160417736008	85.24	IV
3	Mohammed Omer Farooq	160417736061	85.14	V
4	Syed Mudassir Ali	160417736322	83.88	X

AWARDS ACHIEVED

The following students of Mechanical Engineering Department have participated in the extracurricular activities and grabbed the winning positions.

S. No.	Name of Student(s)	Name of the Event	Date of award	Achievement
1.	Shaik Sameer (1607-17-736-324) B.E. 4 th year Mechanical Engineering	Telangana State Power Lifting Championship	24-01-2021	Third Position in Junior power lifting championship
2.	Mohammed Abrar Hussain (1604-16-738-049) B.E. 4 th year Production Engineering	National Speed Kicking online Teakwondo Championship -	28-01-2021 (Tandur, Vikarabad)	Gold Medal in A-18 yrs, Black belt, Speed kicking.
3.	Mohammed Abrar Hussain	1 st online open National Poomsae Teakwondo	18-10-2020	Gold Medal, senior black

	(1604-16-738-049) B.E. 4 th year Production Engineering	Championships-2020	(Bangalore)	belt category.
4.	Mohammed Abrar Hussain (1604-16-738-049) B.E. 4 th year Production Engineering	Kukkiwon's 1 st Dan Teakwondo Promotion Test	28-10-2020	International Certificate.