

# KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506015, TELANGANA, INDIA

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६०१५, तेलंगाना, भारत

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

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## DEPARTMENT PROFILE

### PROGRAMS OFFERED

Course	Intake
B. Tech. (Mechanical Engineering)	60
M. Tech. (Design Engineering)	12
Ph.D. (as allotted by the K.U.)	33

### MILESTONES

#### Department started with Two B. Tech programmes in

- 1980 1. Production Engineering 2. Industrial Engineering
- 1983 The two B. Tech Programmers are merged to Mechanical Engineering.
- 1997 Conducted National Workshop on CADD
- 2000 Conducted AICTE sponsored Short term Training Programme on TEUCEMS
- 2001 NBA accreditation : TIER-II for 3 years , w.e.f. 9.11.2001 (First Time)
- 2002 Started UG Programme in B. Tech Programme in Production Engineering
- 2003 Organized National Conference on Trends in Mechanical Engineering TIME-03
- 2004 Organized National Conference on Trends in Mechanical Engineering TIME-04
- 2004 Started PG Programme in M. Tech (Design Engineering)
- 2004 Recognized as Research centre by Kakatiya University
- 2006 NBA accreditation : TIER-II for 3 years , w.e.f. 27.07.2006 (Second Time)
- 2008 B. Tech programme in Production Engineering is Surrendered and opted Additional intake of 60 in Mechanical Engineering
- 2009 Inauguration of SAE India Collegiate Club
- 2009 All India 2nd Rank in GATE-09
- 2010 National Conference on Trends In Mechanical Engineering TIME'10
- 2011 NBA accreditation : TIER-II for 3 years , w.e.f. 06.09.2011 (Third Time)
- 2012 AICTE -MODROBS OF IC ENGINES LAB with 12.28 Lakhs
- 2013 MOU Signed with Fiber Glass Industries Association of Andhra Pradesh (FIAAP) Hyderabad
- 2014 MOU Signed with Vasantha Tool Crafts Pvt. Ltd., Hyderabad
- 2016 Organized National level Faculty Development Programme Research Methodology & Computational Techniques (RMCT-16).
- 2016 Two UGC-Minor Research Projects (MRP) worth of 6.5 Lakhs
- 2016 NBA accreditation : TIER-II for 3 years , w.e.f. 04.02.2017 (Fourth Time)
- 2018 Organized National level Faculty Development Programme on Engineering Drawing
- 2018 Indo American Artificial Heart Project (IAAHP) - Centre of Excellence established with worth of 65 Lakhs.
- 2018 Organized Adroitec sponsored One Week faculty STTP on Hands on Programme on ANSYS Software (HPAS-18)
- 2019 Organized One Week faculty Workshop on Research Methodology (RM-19) in collaboration with Kakatiya University, Warangal.
- 2019 Organized Two days workshop on Finite Element Methods
- 2019 Organized One Week Refresher course on Training in Mechanical Engineering Laboratories for Technical Staff
- 2019 NBA accreditation : TIER-I for 3 years, w.e.f. 20.11.2019 (Fifth Time)
- 2019 MCAD Lab is renovated with 76 Dell Core i5 Processor 3.0GHz worth of 64 Lakhs including ANSYS 2019R3 and MATLAB software
- 2019 Auto CAD lab is established with 75 Dell Core i5 Processor 3.0GHz worth of 40 Lakhs.
- 2019 Organized One week FDP on Disruptive Technologies in Digital Manufacturing
- 2020 Organized One week FDP on Advance Materials and Manufacturing
- 2020 Two Indian Patents published
- 2021 Organized One week FDP on Recent Developments in Mechanical Engineering
- 2021 Organized One day Workshop on MATLAB & ITS APPLICATION
- 2021 Organized One week FDP on during Emerging Trends in Advanced Materials & Manufacturing Processes
- 2021 Composite Materials lab is established with 20 Lakhs
- 2021 Two Indian Patents published
- 2021 MoU Signed with Volvo Group of Industries, Bangalore
- 2021 AICTE Sanctioned International Conference Grant worth of Rs. 4,00,000/-
- 2022 Monthly Newsletter started in the name of PULSE, in January 2022
- 2022 New equipments worth of Rs 17,06,911/- added in ME laboratories
- 2022 Organized AICTE sponsored International Conference on Energy Sustainability AICTE-ES-2022
- 2022 Organized Workshop on "Building an Electric Vehicle"
- 2022 NBA accreditation : TIER-I for 3 years , w.e.f. 15.06.2022 (Six Time)
- 2022 Organized Two day Workshop Design and 3D Printing of Novel Components
- 2022 Organized One week Faculty Development Programme (FDP) on "Innovations in Teaching Learning Process in Mechanical Engineering"
- 2023 Organized One week Faculty Development Programme (FDP) on Hands on Program on Additive Manufacturing (HPAM)-2023
- 2023 SERB Project Grant worth of Rs. 18.30 Lakhs under Teachers Associate ship for Research Excellence (TARE)
- 2023 Received Research Project from IIT, Guwahati Technology Innovation and Development Foundation Rs. 14.00 Lakhs.
- 2024 Received Research Project from IIT, Guwahati Technology Innovation and Development Foundation Rs. 08.00 Lakhs.
- 2024 Indian Patent Grant Received with Grant No. 522414 Dated 08.03.2024 entitled "Apparatus for converting dynamic energy of wheels of an automobile into electrical power"

## PROMINENT GUESTS VISITED

1. **Sri K. T. Rama Rao**, MLA, Sircilla & IT Minister of Telanagana visited the Department on May 5, 2023.
2. **Sri A. Dayananda Reddy**, Managing Director, Vasantha Tool Crafts Pvt. Ltd., Proud Alumnus of the Department visited the Department on May 5, 2023.
3. **Sri N. Suresh Kumar**, DGM - Design, Vasantha Tool Craft Pvt. Ltd., Hyderabad, Alumnus of the Department visited the Department on April 20, 2023
4. **Dr. P. S. Reddy**, Professor of Medicine, University of Pittsburgh, USA & Chairman SHARE/ MediCiti Institute of Medical Sciences, India, visited the Department on April 20, 2023.
5. **Sri Chada Ramesh Reddy**, Managing Director, Laxven Systems Pvt. Ltd., Hyderabad visited the Department on April 20, 2023.
6. **Sri G.V. Rao**, Director-CSR & External Industry Affairs, Volvo Group India Pvt. Ltd, Bangalore, Proud Alumnus of the Department visited the Department on February 20, 2023.
7. **Sri Sunny Kabrawala**, Founder & CEO, Starlab Surat, Gujarath, visited the Department on 24-25 October, 2019
8. **Sri Subramanya Sastry**, HR Manager, Cyient Technologies, Hyderabad, visited the Department on March 16 & 30, 2019.
9. **Sri Subhash Pilla**, CEO, Imagine to Innovate, Chennai, visited the Department on 4-5 October, 2018
10. **Sri M. Sheshagiri Rao**, AGM, Bharth Dynamics Ltd., Hyderabad, visited the Department on October 5, 2018.
11. **Sri P. Sudhakar**, Sr. Manager, Navabharth Ventures Ltd., Paloncha, Khammam visited the Department on November 10, 2018.

### Faculty Achievements in last 5 Years

Academic Year	SCI Journals	Scopus Journals	Awards
2023-24	03	01	08
2022-23	11	08	12
2021-22	20	37	09
2020-21	12	05	04
2019-20	05	19	02
2018-19	12	--	05

### Students Achievements in last 5 Years

Academic Year	Conferences	Journals	Awards
2023-24	03	--	--
2022-23	32	03	01
2021-22	48	04	--
2020-21	20	01	--
2019-20	03	04	02
2018-19	--	--	--

### Alumni Interactions

1. **Sri K. Sai Kiran** (Class of 2013-17), Senior Engineer, Mahindra & Mahindra Pvt. Ltd., Bangalore, visited our Department on February 2, 2024 and delivered an expert talk on Design of Electric cart Vehicle.
2. **Sri M. Sampath** (Class of 2016-20), BMS Calibration Engineer, Stellantis, Michigan, USA visited our Department on January 2, 2024.
3. **Sri A. Dayananda Reddy** (Class of 1980-84), Managing Director, Vasantha Tool Crafts Pvt. Ltd., visited our Department on May 05, 2023.
4. **Sri G. Venkateshwara Rao** (Class of 1986-90), Director-CSR & External Industry Affairs, Volvo Group India Pvt. Ltd, Bangalore, visited our Department on February 20, 2023 and delivered an expert talk on Current Scenario- Opportunities for Mechanical Engineers
5. **Dr. A. Kumar** (Class of 1992-95), Professor of ME, NITW delivering a Technical Session on advances in Production Engineering at FDP on 6th December, 2022.
6. **Dr. Hari Kumar**, Professor of ME, NITW delivering a Technical Session on Design thinking & Design Studio at FDP on 8th December, 2022.
7. **Dr. P. Ravinder Reddy** (Class of 1983-87), Principal, CBIT, Hyderabad, act as a chief guest, Short Term Training Programme on "Hands on Programme on ANSYS Software" on November 12, 2018.
8. **Sri Ch. Sridhar Reddy** (Class of 1995-99), MD, Prathiraj Metals Pvt. Ltd., Hyderabad, visited our Department on September 28, 2018 and delivered an expert talk on "Career Opportunities in Plastic Industry"
9. **Sri C. Rathnakar**, ADE, KTPP, TSGENCO, Bhupalapally, visited our Department on July 21, 2018 and delivered an expert talk on "Overview of Thermal Power Plant".

### Accreditation:

#### B. Tech (Mechanical Engineering)

1. Re Accredited under Tier-I by the National Board of Accreditation (3 Years) Approval Letter No. 11-76/2010/NBA, dated 15.06.2022.
2. Accredited under Tier-I by the National Board of Accreditation (3 Years) Approval Letter No. 11-76-2010-NBA, dated 20.11.2019.
3. Re Accredited under Tier-II by the National Board of Accreditation (3 Years) Approval Letter No. 11-76-2010-NBA, dated 04.02.2017.
4. Re Accredited under Tier-II by the National Board of Accreditation (3 Years) Approval Letter No. 11-76-2010-NBA, dated 22.09.2011.
5. Re Accredited under Tier-II by the National Board of Accreditation (3 Years) Approval Letter No. NBA/ACCR-724/2004, dated 27.07.2006.
6. First time Accredited under Tier-II by the National Board of Accreditation (3 Years) Approval Letter No. NBA/23rd BRD-ATR/2001, dated 21.11.2001.

#### M. Tech (Design Engineering)

1. First time Accredited under Tier-I by the National Board of Accreditation (3 Years) Approval Letter No. 11-76-2010-NBA, dated 30.11.2023.

### Placements & Higher Education

Academic Year	Placements	Higher Education
2023-24	18 (till date)	--
2022-23	70	10
2021-22	64	09
2020-21	83	32
2019-20	29	40
2018-19	37	21

## FUNDING / GRANTS RECEIVED

## OTHER DEPARTMENT HIGHLIGHTS

- 2023-24: Dr. MD. Sameer, Assistant Professor, Received Research Project from IIT, Guwahati Technology Innovation and Development Foundation, Rs. 14,00,000/-  
Dr. MD. Sameer, Assistant Professor, Received Research Project from IIT, Guwahati Technology Innovation and Development Foundation, Rs. 8,00,000/-
- 2022-23: Dr. G. Srinu, Assistant Professor, Received SERB-DST Research Project under TARE scheme Rs. 18,30,000/-
- 2021-22: Dr. P. Srikanth, Professor, Received AICTE IDEA Lab Rs. 1,23,60,000/-  
Dr. K. Sridhar, Professor, Received GoC grant from AICTE Rs. 4,00,000/-
- 2019-20: Dr. P. Srikanth, Professor, Received Minor Research Project for UGC Rs.3,92,500/-  
2. Dr. G. Ganesh Kumar, Associate Professor, Received Minor Research Project for UGC Rs.2,47,500/-

### NPTEL Certificates:

Academic Year	Faculty	Students
2023-24	13	78
2022-23	21	171
2021-22	--	11
2020-21	04	08
2019-20	57	--
2018-19	05	04

### Career Opportunities:



Campus Recruitment Drive - VEM Technologies, Hyd.



Campus Recruitment Drive - Power Mech Project Ltd., Hyd.



ZF MOTOR SPORT POST Event- ZF technologies, Centre India, Hyd.

### Major Facilities:

CNC Lathe-Starturn, CNC Milling; Mechatronics Training System with Hydraulic, Pneumatic, PLC, and Robo-X Simulation software; Rockwell Hardness Testing Machine, Profile Projector, Core i5 8th Generation Systems, Dell Servers, ANSYS 2019R3, Creo, CFD, MATLAB2020b, AutoCAD2020, Vibration Test Rig; Single Cylinder Diesel Engine 5 H.P. with Rope Brake, Single Cylinder Diesel Engine 5 H.P. with Electrical Dynamometer for Valve Time Diagram, Twin Cylinder Diesel Engine 10 H.P. with Hydraulic Dynamometer, Single Cylinder Petrol Engine 3 H.P. without Dynamometer, Four Cylinder Petrol Engine 10 H.P. with Hydraulic Dynamometer (Ambassador), Two Stage Reciprocating Air Compressor, Computer aided CI Engine Test Rig; Tig Welding Machine, Injection Moulding, Blow Moulding, Spot Welding Machine, EDM, Ericsson Cup Test, Tool & Cutter Grinder, Slotting Machine. Simulation Softwares-Promodel, Edge CAM, 3D-Printers, Workstation, Canon Color Printer, Packed Bed Thermal Energy Storage System, Surface Roughness tester, Digital Weighing balance, EDM Drilling Machine (Micro), Computer Aided Single Cylinder SI Engine test rig, vortex tube refrigeration test rig, vapour absorption refrigeration system, vapour compression refrigeration system, window air conditioning system, air conditioning tutor, solar PV panels, solar air, water heating systems, Universal Tensile Testing Machine (UTM), Pin and Ball on Disc Friction & Wear Test Rig, and IzodCharpy Impact Tester-Computerized.

### List of Laboratories in the department.

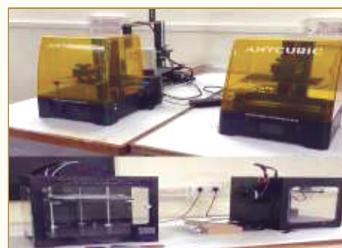
- |                          |                                  |                                      |
|--------------------------|----------------------------------|--------------------------------------|
| 1. Central Workshop      | 2. Material Science & Metallurgy | 3. MCAD                              |
| 4. Dynamics of Machinery | 5. Fuels and IC Engines          | 6. Machine Shop & Metrology          |
| 7. Heat Transfer         | 8. Energy Engineering            | 9. Computer Integrated Manufacturing |
| 10. Mechanical Research  | 11. Composite Materials          | 12. Additive Manufacturing           |



Machine Shop



Fuels & IC Engines Laboratory



3D Printers-Additive Manufacturing Laboratory



MCAD Laboratory

### Center of Excellences:

#### Indo American Artificial Heart Project (IAAHP):

The condition of patients with heart failure often declines even with optimal medical treatment. Heart transplantation has traditionally been the preferred treatment for such patients. The lack of donor organs motivated the development of the Total Artificial Heart in the early 60s, and development continues to this day. Early artificial hearts, such as the pulsatile devices, imitated the natural heart's action but yielded poor results due to their large size, invasiveness, complexity, and need for extracorporeal support connections. While debate has continued over the necessity of pulsatile action, rotary pumps, with their smaller size and simpler designs, have been steadily gaining popularity as blood pumps for temporary support for an ailing heart. Newer axial blood pumps incorporate several design features such as magnetically levitated rotors, CFD optimized impeller and diffuser blades, biocompatible materials, and transcutaneous power transmission. These small and robust pumps, such as the Left Ventricle Assist Device, play an increasing role for those awaiting heart transplants. The duration of this and temporary support has been increasing to the point where LVAD axial pumps are now being considered as a destination therapy in some cases. Here an attempt is being made to design, manufacture and market a TAH with low cost and higher efficiency for developing countries like India.



## KITSW's Role in IAAHP

The Department of Mechanical Engineering is working on Computational Fluid Dynamics Analysis using ANSYS Workbench for modeling and analysis of heart pumps and development of prototype models using a 3D Printer.

The Department of Electronics and Instrumentation Engineering has been performing Mockup Loop Testing to study the characteristics of blood flow experimentally.

The Department of Electrical and Electronics Engineering is working on a Brushless Direct



IAAHP Center of Excellence Laboratory



Interactive Session with faculty & Students on Progress of IAAHP at KITSW on April 20, 2023- Dr. P. S. Reddy, Professor of Medicine, University of Pittsburgh, USA & Chairman SHARE/ Medici Institute of Medical Sciences, India



Interactive Session with faculty & Students on Progress of IAAHP at KITSW on April 20, 2023-Sri N. Suresh Kumar, DGM - Design, Vasantha Tool Craft Pvt. Ltd., Hyderabad



Sri Chada Ramesh Reddy, Managing Director, Laxven Systems Pvt. Ltd., Hyderabad Visited to discuss on progress on Experimental Study on Properties of a Magnet Used in Left Ventricular Assisted Devices (LVAD) performed by Mr. Rahul Vennam (B19ME126) under supervision of Dr. G. Ganesh Kumar.

## Students and Faculty Activities

### Faculty Activities:

The Department of Mechanical Engineering, KITSW & NITW jointly organized Faculty Development Program On "Innovations in Teaching Learning Process in Mechanical Engineering" during 5-9 December, 2022.



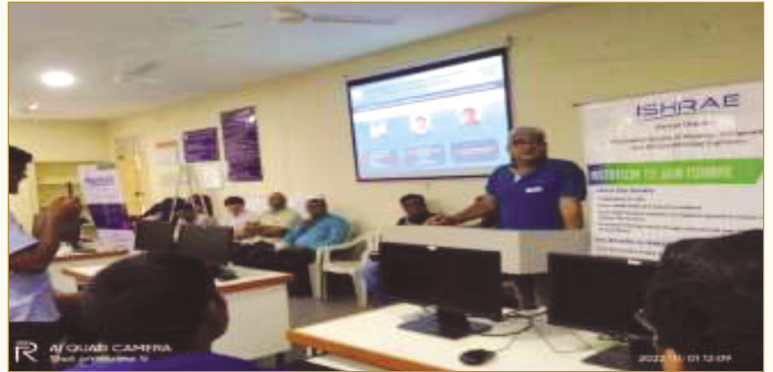
Felicitation to Chief guest Prof. V. Suresh Babu, Professor of ME & HoD, NITW on the Inauguration day of the FDP on 5<sup>th</sup> December, 2022

### Students Activities: SUMSHODHINI'22

Mechanical Engineering students have actively participated in the two-day national-level student technical symposium, SUMSHODINI-22, held at KITSW during November 18-19, 2022. As a part of it, students organized a one-day pre-symposium workshop on "Novelty of 3D Printing" under the umbrella of the Mechanical Engineering Students Association (MESA) on November 18, 2022, to enhance knowledge and skills in the domain of 3D Printing and also conducted events like Robo Race, Rev-it, Scatter & Stack Up, Technical Paper Presentation, CAD Modeling, Business Plan Presentation, and Idea Presentation events during the symposium. Around 110 students participated in all these events and benefited from various events.



Sri A. Dayananda Reddy, Managing Director, Vasantha Tool Crafts Pvt. Ltd., Hyderabad, Interacted SAE Collegiate club Students



Inaugural of ISHRAE - KITSW Students Chapter



Hon'ble Minister Sri. K.T. Rama Rao and Smt. Satyavathi Rathod, Minister for Tribal Welfare, with Mr. Ghousuddin, Miss Srinidhi Nayak and Abhinay naik of B. Tech Mech., Engineering

