Sri Vasavi Engineering College (Autonomous)

(Sponsored by Sri Vasavi Educational Society)
(Approved by AICTE, New Delhi & Permanently affiliated to JNTUK, Kakinada)
(Accredited by **NBA** & **NAAC** with '**A**' Grade, Recognized by UGC Under Section 2(f) & 12(B))
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DEPARTMENT OF MECHANICAL ENGINEERING

AY :: 2022-23

Collaborative Research Activities with NIT, AP

- **Support in Research Proposals**

- Submitted SERB-CRG proposal "Design and Development of IoT based Clean Water and Hydrogen Generation through Solar Desalination and Biogas" (File No: CRG/2023/003425) with **Dr. Ravi Kiran Sastry G, Professor,** N**IT, AP** Department of Mechanical Engineering as a Principal Investigator and Dr.G.V.N.S.R.Ratnakara Rao, Professor, Department of Mechanical Engineering as a Co-Principal Investigator.

- Submitted SERB-CRG proposal "Design, Development and Demonstration of prosthetics for hip joint using Bio-materials (File No. CRG/2023/003929) with **Dr. Thella Babu Rao Assistant Professor, NIT, AP** Department of Mechanical Engineering, as a Co-Principal Investigator and Dr. M. V. Ramesh, Professor, Department of Mechanical Engineering as a Principal Investigator.

- Submitted SERB – TARE (Teachers Associateship for Research Excellence) proposal "Design, development and demonstration of IOT based sustainable solar Multi-generation system for clean water, steam and electric power generation using CPV and domestic waste water (File Number: SRG/2023/001695) with **Dr. G. Ravi Kiran Sastry from NIT, AP** as a mentor and Dr. S.S.R. Kousik as a associate.

- Submitted SERB – TARE (Teachers Associateship for Research Excellence) proposal "Behaviour in Microwave sintered AL/RHA composites (File Number: TAR/2023/000223) with **Dr. G. Ravi Kiran Sastry from NIT, AP** as a mentor and Dr. K. Dorathi as a associate.

- **Support in Student projects**

- B.Tech., VIII semester project students of two batches under the guidance of Dr. K. Dorthi and Mr. B.N.V. Srinivas approached NIT, AP to use facilities for the experimentation.

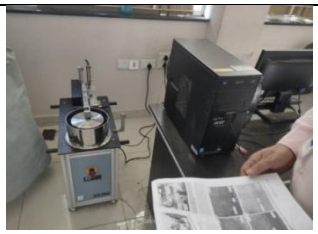
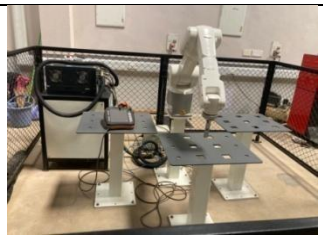
Report on visit to NIT, AP

The following are the observations made by the HoD and senior faculty members of the Department of Mechanical Engineering during the visit to NIT, AP on 20.02.2023 (Monday) & 21.02.2023 (Tuesday).

We met HoD of Mechanical Engineering Department, Dr. T. Babu Rao garu on 20.02.2023 (Monday). He accompanied us to visit various labs and advanced research facilities available in the campus. Various labs visited are Kinematics of Machinery, Heat Transfer, CAD lab, Machine shop and Mechatronics Lab.

We met HoD of Metallurgical and Materials Engineering Department, Dr. R. Sunil Kumar on 21.03.2023 (Tuesday). He accompanied us to visit metallurgy lab and advanced research facilities available in the campus.

The following equipments/machines are identified to carryout research work in Mechanical Engineering & Metallurgy Departments for faculty members as well as for students to do student project work are summarized below.

Description of available equipment	Scope for Research work & publications
 **Disc & Pin type wear testing machine**	Student projects on wear studies can be carried out on this machine.
 **Wind tunnel**	Student projects on flow analysis using wind tunnel can be carried out on this machine.
 **Industrial robot**	Student projects on stress analysis in Welded zone can be carried out by modification of robotic arm to welding gun.
 **TIG welding machine**	Student projects on effect of welding parameters on strength of welded joint and optimization for parameters can be carried out on this machine.

Pre heating furnace  **Stir casting facility** 	Student Projects on characterization of metal matrix composites can be carried out on these machines.
 **CNC machining center**	Student projects on tool wear studies can be carried out on this machine (equipped with vibration sensor).
  Electro-Hydraulic & Electro-Pneumatic training kit	Electro hydraulic, Electro pneumatic and Electro electronic training kits available at NIT, AP can be used for training of students. Further student projects can carried out for the in house development of kit to demonstrate the activation of double acting cylinders.
 **Submerged arc welding**	Student projects on weld strength of welded parts can be carried out on this machine.
 **Ball Mill**  **Tubular Furnace**	Students can do projects on preparation of powder metallurgy specimens using the following major equipment. - Ball mill can be used for mixing the powders and reducing the particle size of powders. - Tubular furnace is used for heating the green compacts at high temperatures.

 **Electro Plating Machine**	The plating operation on samples can be done by using this machine and further the corrosion behavior of electroplated parts can be studied in student projects.
 **Digital Hardness Testing Machine**	Students can avail this testing facility to find the hardness of the specimens.

The areas of research include the wear studies on metal matrix composites and flow analysis using wind tunnel, thermal analysis at weld zone related to Mechanical Engineering and sample preparation in powder metallurgy route, determination of hardness and corrosion studies in Metallurgy Engineering. The students will be guided to visit NIT, AP under the guidance of the subject expert in the area of the research work to conduct experiments.

Further, the research work can be published in reputed journals with good indexing. Also the student participation in international conferences related to their work can be encouraged.

S.No.	Name of the faculty member	Date of visit to NIT,AP
1.	Dr. M.V Ramesh	20.02.2023 & 21.02.2023
2.	Dr. S.S.R Kousik	20.02.2023 & 21.02.2023
3.	Dr. K. Dorathi	21.02.2023
4.	Mr. B.N.V Srinivas	20.02.2023 & 21.02.2023
5.	Mr. K.C.S Vyasa Krishnaji	20.02.2023
6.	Mr. D.V.N Prbhakar	20.02.2023 & 21.02.2023

HoD - ME
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