



## Newsletter of Mechanical Engineering Association

### DEPARTMENT OF MECHANICAL ENGINEERING SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN :: AUTONOMOUS

#### **Vision of the Department**

- To be recognized globally for quality education and research leading to well-qualified, innovative, entrepreneurial and successful mechanical engineer

#### **Mission of the Department**

- To Impart quality education to enhance skills and make graduates globally competitive.
- To Prepare students to pursue lifelong learning,, serve the profession and meet intellectual,, ethical and work place challenges.
- To Provide Research facilities and opportunities to faculty & students to create,, interpret,, apply and disseminate knowledge.

#### **Program Educational Objectives**

- Have foundation in engineering and science to apply Technical Knowledge and skills in various areas of Mechanical Engineering.
- Become effective engineers to meet society''s needs with their research capabilities in interdisciplinary subjects.
- Acquire skills for life-long learning and practice of professional ethics.

**INSIDE ISSUES:**

Content	Pg. No.
STTP Phase-2	2
STTP Phase-3	2
Faculty attended Workshops/ Conferences	3
Faculty publications /patents	4
Student Achievements	4

**EDITORIAL BOARD:**

**Chief editor:**

Dr. P. Srinivasa Raju,  
*Professor & vice principal*

**Editor:**

Mr. CH. Harikrishna,  
*Associate Professor & HOD*

**Members:**

Mr. P. Surya Prakash Varma,  
*Associate Professor*

Mr. B. Satya Krishna,  
*Assistant Professor*

Mr. N.Srinivasa Rao,  
*Assistant Professor*

**Aicte Sponsored Short Term Training Programs On “Additive Manufacturing And Aerospace Applications”**

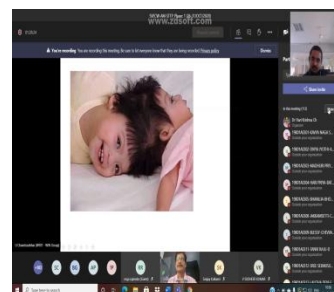
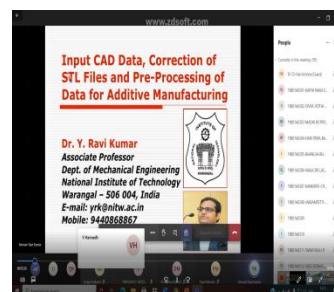
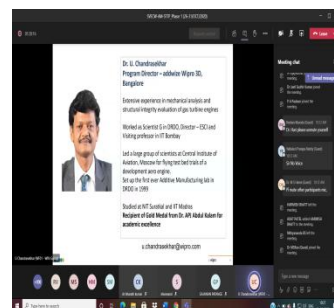
Department of mechanical engineering Shri Vishnu Engineering College Of Women conducted three Online Short Term Training Program (STTP) on “Additive Manufacturing And Aerospace Applications ” Phase-1,2,3 during the semester.

**STTP PHASE-1 DURING 26 OCT -31 OCT 2020**

The STTP mainly theme is Fundamental aspects of Additive Manufacturing Technologies and Categorisation – Real-world applications in aeronautical, energy, oil & gas, and space sectors.

The major topics covered in this program by eminent resource persons are as follows .

- Input CAD Data, Correction of STL files and Pre-Processing of data for Additive Manufacturing
- Design for Additive Manufacturing and AM based Supply Chains
- 3D Printing for Product Development and Innovation
- AM based drone development & deployment in bridge monitoring and water quality monitoring
- Metallic Materials, Super Alloys and Steels for Powder Bed Fusion and Characterisation Efforts on Titanium Alloys, Aluminium and Nickel based Super alloys
- Research and technology development opportunities in laser powder bed fusion, electron beam melting and stereolithography domains
- Digital Light Processing based 3D printing of Polymers and series production of medical devices and Integration of IoT into Additive Manufacturing
- Direct energy deposition AM Techniques



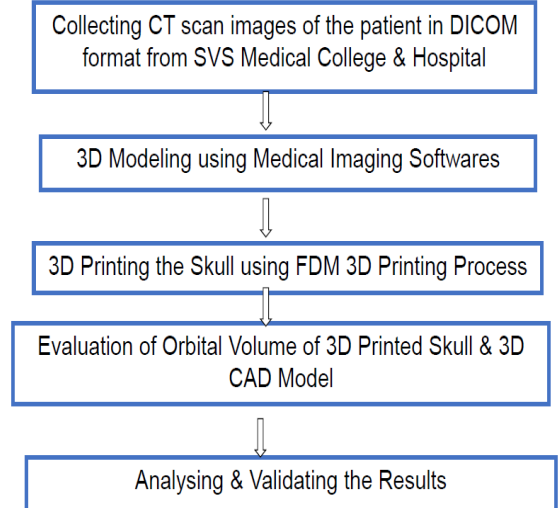
## STTP PHASE-2 DURING 16<sup>th</sup> NOV 2020 to 21<sup>st</sup> NOV 2020

The STTP mainly theme is the case studies on Biomedical Applications Using Additive Manufacturing by Prof. Sivarama Krishna, Osmania University, AM Centre.

The main aim of this research work is to evaluate the orbital volume during the mid facial fractures using additive manufacturing technologies. The evaluation of Orbital volume is done by measuring the dimensions between the fixed landmarks on both the 3Dprinted and 3DCAD model of the fractured skull before and after operation and then compared with the unfractured side of the skull to establish the percentage of restoration.

In the present work, the data related to a 28 year old male patient who has sustained severe injuries on the midface is taken from SVS Medical College and Hospital, Mahabubnagar, Telangana.

### RESEARCH METHODOLOGY



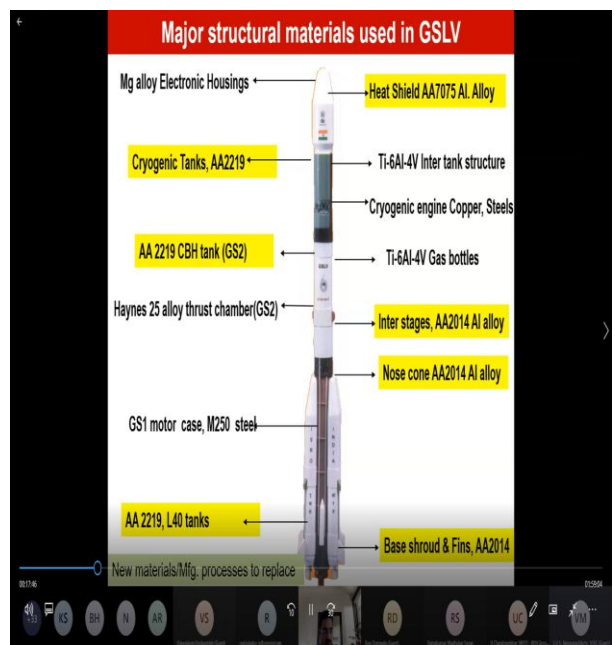
Orthopaedics and traumatology have been among the first medical fields to use 3DP technology to build PS models, along with maxillofacial surgery. This stems from the straightforward elaboration required by radiological images of the involved structures. AM technology able to process metal and ceramic powder, allowed the production of personalised prostheses, to be tailored to the specific geometry of each clinical case.

## STTP PHASE-3 DURING 14<sup>th</sup> DEC 2020 -19<sup>th</sup> DEC 2020

The STTP mainly theme is study on Additive manufacturing of metallic materials for aerospace applications by Dr SVS Narayana Murty VSSC, Trivandrum

### Characterisation of AM Parts

- Physical Property Evaluation (Density, CTE, TC)
- Chemical Analysis (Homogeneity)
- Mechanical Property Evaluation- Directionality of Properties Tensile – ASTM F3122 , Impact- ASTM E23, FT- ASTM E399 Metallurgical Characterization (Texture/ Microstructure)
- Non-Destructive Testing
- Radiography-ASTM E1742/ Ultrasonic- AMS 2630/ASTM E2375 , Computed Tomography- BS EN 16016-3-2011, Thermography- ASTM E1311-14 , Residual Stress Measurement
- Visual Inspection
- Dimensional Inspection



## Faculty attended Workshops/ Conferences



- Dr Ch Hari Krishna attended a One week STTP on “Failure and Damage Mechanics of high performance Engineering Materials During 13-07-2020 to 18-07-2020
- Dr P Srinivasa Raju attended One Week Online Faculty Development Program on “ Digital Technologies in Design and Manufacturing ” during 07-12-2020 to 12-12-2020
- Dr P Srinivasa Raju attended National Webinar On “National Education Policy 2020” during 02-11-2020 to 06-11-2020
- Dr Sivakumar Krishnan attended One week Online Short Term Course on Recent Developments in Mechanical Systems ” during 07-09-2020 to 11-09-2020
- Mr. P Surya Prakash Varma attended A 5-day online Faculty Development Program on “Recent Advances in Thermal Engineering” during 22-09-2020 to 26-09-2020
- Mr. P Surya Prakash Varma attended Online FDP on “Recent Advances in Renewable Energy during 24-08-2020 to 28-08-2020
- Mr. P Surya Prakash Varma attended AICTE Sponsored One Week Online Short-Term Training Program on “Modeling and Analysis using MATLAB and Python for Mechanical Engineering Applications during 03-08-2020 to 08-08-2020
- Mr N Srinivasa Rao attended Online FDP on “One-week Online FDP” Recent Developments in Mechanical Engineering” during 10-08-2020 to 14-08-2020.
- Mr J V Narasimha Raju attended Online FDP on “ICT Tools for Engineering Colleges Teaching and Out Come Based Learning ” during 05-10-2020 to 10-10-2020
- Mr J V Narasimha Raju attended Online FDP on “Research Methodology: Tools and Techniques ” during 08-09-2020 to 14-09-2020.
- Mr J V Narasimha Raju attended Online FDP on “Recent Advances in Micro Eletro Mechanical Systems(MEMS) and their Applications for future Challenges ” during 21-09-2020 to 26-09-2020 .
- Mr J V Narasimha Raju attended Online FDP on “Inter disciplinary Approaches to promote sustainability using green Technologies ” during 16-09-2020 to 20-09-2020
- Mr J V Narasimha Raju attended Online FDP on “Inter Disciplinary Research : Need and Relevance in Science and Technology ” during 01-09-2020 to 05-09-2020
- Mr.Potturi S Prakash Varma has attended a two day conference on ‘Materials Today Proceedings 2020’ during 6,7<sup>th</sup> sep 2020.

## Faculty Publications

- Dr.Ch.Hari Krishna, published a paper on, Modeling of cylindrical upsetting process for enhanced ductile fracture in the Materials Today Proceedings.
- Dr.Ch.Hari Krishna, published a paper on Analysis of anisotropy in the upsetting process of AA2014 cast alloy embedded ,in the Journal of Mechanical Engineering Science.
- Mr. J.V. Narasimaha Raju, published a paper on, A Review on Optimization of Machining Performances and Current Research Work in Die Sinking EDM in the the International Journal of Analytical and Experimental Modal Analysis.



## Patents Published

- Battina N Malleswara Rao Published a patent on the title Tuned Refractory Ceramics For 3d Printing Technology with Patent No 202041048566

## Certificate courses

- Mr. Surya Prakash varma has completed a online certificate course in Applications In Engineering Mechanics during the period 13-06-2020
- Mr. Mr.K. Raghavendra Sai has completed a online certificate course in Applications In Engineering Mechanics during the period 13-06-2020
- Mr. Mr.K. Raghavendra Sai has completed a online certificate course in Machine Design Part I during the period 10/08/2020

## Student Achievements

GRiD is Flipkart's Flagship Engineering Campus Challenge which provides you the opportunity to apply your technical knowledge and skills, to compete and complete key challenges. Flipkart GRiD brings Live Problem Statements from the world of E-Commerce to the brightest minds of India and lets you put your capabilities to the ultimate test.

The Robotics Track will have 3 elimination rounds to test you on your technical, analytical, and ideation skills before the Grand Finale where the Finalists will get to present their solutions to the Panel of Domain Experts at Flipkart.

Four teams named after team crankers, robocrats, quadsquad and champions from mechanical engineering of svecw has participated in the round 1 of the flipkarts grid 2.0 challenge and secured the merit certificates in this event .

