

# Shri Ramdeobaba College of Engineering and Management, Nagpur

## RCOEM-TATA-Center for Invention Innovation Incubation & Training (CIIT)

### Data/contents for October-December Newsletter

Training workshops organized at RCOEM-TATA-CIIT delivered by Expert Faculties:

Training for RCOEM students in 8 Nos of 2 days' workshop each (Total 16 days) for from 6-12 Dec 2021, were conducted by 13 Nos of Training course coordinators from Industrial, Mechanical and Electronics Engineering department. Training course coordinators have successfully conducted the sessions for 77 students. Students' participants were from the various Engineering departments. There were no registration fees for attending the workshop. Participating student have enjoyed the hands-on experience for operating machines and software's.

### Schedule of the Workshop

|           |  |
|-----------|--|
| 6-Dec-21  | Additive Manufacturing /3-D Printing<br>(Dr. Vishal Shukla + Mr. Sumit Ramteke)                              |
| 7-Dec-21  |  |
| 8-Dec-21  | CATIA v 6<br>(Prof B C Bissa +Dr. A.K. Jha + Mr. Sumit Ramteke)  |
| 9-Dec-21  |  |
| 10-Dec-21 | VMC operations & CNC Programing<br>(ADU + Dr. P S Deole + Mr. Mayur Patle)                                   |
| 11-Dec-21 |  |
| 13-Dec-21 | Mechatronics &IoT(Prof. P B Shiwalkar & Dr. Suresh Balpande + Prof Rushikesh Deshmukh + Mr. Saahil Somkuwar) |
| 14-Dec-21 |  |
| 15-Dec-21 | Manufacturing Execution System<br>(Prof N P Gudadhe + Dr. P S Deole + Mr. Mayur Patle)                       |
| 16-Dec-21 |  |
| 17-Dec-21 | Yaskawa Arc Welding Robot (Dr. G R Nihade + Dr. A K Jha)   |
| 18-Dec-21 |  |
| 20-Dec-21 | MSC Adams (Dr. Y M Sonkhaskar)   |
| 21-Dec-21 | MSC Patran, MSC Nastran (Dr. Vishal Shukla+ Mr. Dhairyasheel Desai, TTL)                                     |

Certificate distribution to about 82 students (80 RCOEM + 2 from other colleges) was conducted at RCOEM Tata CIIT center.

### Certificate Specimen



### Glimpse of Workshop Sessions

Participants and trainers of 2 days training workshops



Prof. P. B. Shiwalkar presenting some insights in Mechatronics



**Inquisitive students understanding functioning of VMC**



**A stage before hands on: students understanding working principle of 3D printing & 3-D scanning**



**Students Interacting with the Dr. Y. M. Sonkhasar during training on Adams**



## Visit of Eminent persons to RCOEM-TATA-CIIIT:

### Principals of BVM schools

Four Principals of four BVM schools and about 28 Faculty members from Shrikrishna Nagar, Trimurty Nagar, Ashti, Koradi and civil lines BVM school visited CIIIT. 3-D Printing, 3-D Scanning, VMC, Yaskawa Robot, MES & IoT demonstrated by a team faculty members & support staff



Dr. K. N. Agrawal(HOD ME) felicitating the Principal of BVM, Trimurty Nagar



Dr. K. N. Agrawal (HOD Mechanical Engineering) felicitating the Principal of BVM, Ashti



Dr. M. B. Chandak (Dean Academics RCOEM) felicitating the Principal of BVM, Shrikrishna Nagar



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### **Visit of Alumni members of RCOEM (RKNEC) to RCOEM-CIIT**

The alumni members had visited the CIIT Center During the alumni meet held on 25<sup>th</sup> December 2021 Prof. P.A. Dwaramwar had demonstrated the facilities which can be availed to the alumni members for their business needs.



Prof. P. A. Dwaramwar briefing about IoT & Machine Learning Center of Excellence to Alumni Members.



Prof. P. A. Dwaramwar briefing about 3 D Printing and 3 D scanning to Alumni Members.

**Completion of In-House Projects:**

1) The scaled solid model of Lord Shri Ramdeobaba Temple is designed and 3-D Printed at CIIT. The team involved was: Om Kailaswar, Devesh Kothari and Vedang Joshi under the guidance of Mr. Sumit.

Material: PLA

Design Software: Catia V6

Slicing Software: Ultimaker Cura

Weight:250GM.



3-D Printed Model of Shri Ramdeobaba temple

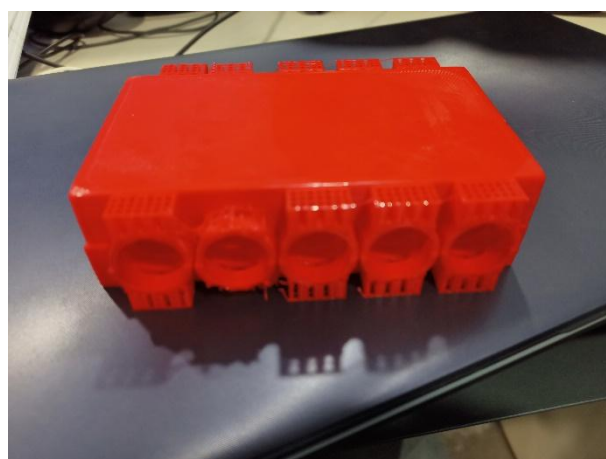
2) Ms.Pranjali Tete, Ph.D. Research Scholar of Mechanical Engg, under the guidance of Dr. M. M. Gupta, has completed the 3-D Print of Rectangular Duct for her Ph.D. Research

Materials: PLA (Tough)

Design Software: Solidworks

Slicing software:Ultimakaer Cura

Weight:100Gm.

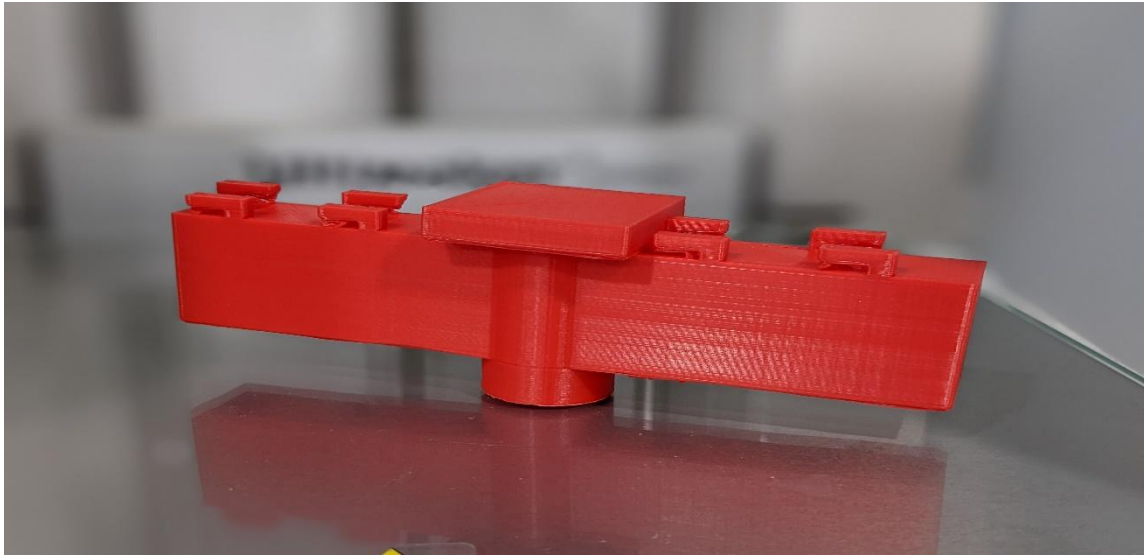


3)Mr. Prayag Ashtankar UG student from Electronics Department guided by Prof. S Balpande has completed the 3-D Print of Moulds Required for his Project. Materials: PLA (Tough)  
Design Software: Fusion 360  
Slicing software:Ultimakaer Cura  
Weight:100Gm.



4) Mr. Parag Sardey and Mr. Md. Saud Baig, the students of M. Tech Robotics and Automation had completed the 3-D Print of Radar system for their Project of Drone.  
Materials: PLA (Tough)  
Design Software: PTC CREO  
Slicing software:Ultimakaer Cura  
Weight:100Gm.





**Radar Brush Body**



**Radar Disc**



5) Mr. Chetan Padole, Mr. Pushkar Bokarey and Mr. Parag Sardey students of M.Tech Robotics and Automation have completed their 3-D Print for Concept Validation of Suspension system for Flo Mobility 4-Wheel Robot

Materials: PLA+ (White+Green)

Design Software: PTC CREO

Slicing software:Ultimakaer Cura

Weight:2.75Kg



**Suspension system for Flo Mobility 4-Wheel Robot**

**Ongoing internship at CIIT:**

- 1) Developing composites of Bamboo to produce Bamboo Resin Board and bamboo embedded in glass.

Bhavesh Verma Student of Mechanical Engineering Sem-VIII have joined for Six month internships at CIIT, he is working on manufacturing of resin-based bamboo boards.

**Progress of full semester Internship project work of Mech Engg Students @CIIT**

1) Developing Bamboo-resin composite boards

Mr Bhavesh (Sem-VIII) is developing some bamboo composites comprising of resins

-Bamboo Sticks



- Bamboo Block





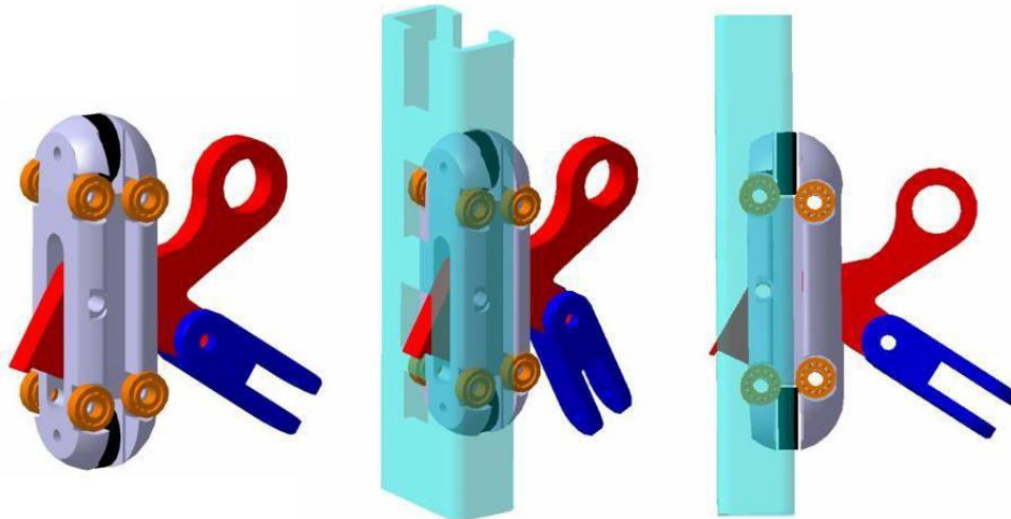
Bamboo Stick store in the box submerged into NaOH for 12 hours



Sticks kept to dry in open air

## 2) Design & Development of Fall arrester for Tall Ladders

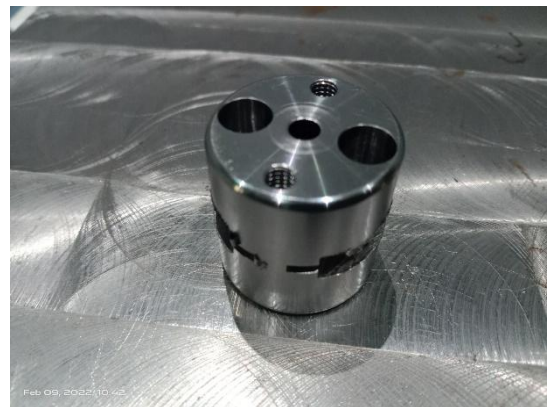
Two students of Mechanical Engineering sem-VIII have joined for Six months internships at CIIT. Ojas Maywade & Devesh Taori, are carrying out extension of previously funded RGSTC-TIFAC project (for Rs. 2.81 Lakh).



## Ongoing outsourced machining work on VMC

1) Batch Production of fine finished parts with high Precision is in process on VMC for a client, the VMC machine is being operated almost for about 8 hours every day and the work Progress is being supervised by CIIT. The operations like Drilling, Tapping and slot Milling are performed on VMC machine within the 20Minute cycle time. The specimen is used in the steering mechanism of water Boat.





Batch Production on VMC

### Wire arc Additive Manufacturing (WAAM)

Aditya A. Chavhan, Animesh T. Hedao and Syed Hamza Ali students of Sem-7<sup>th</sup> of Mechanical Engineering Department guided by DR. V.V. Shukla. Had completed their project on wire arc additive manufacturing at CIIT.

The Metal part is manufactured by using the deposition of metal by the application of Yaskawa Arc Welding Robot. Shaped metal deposition is a relatively new additive layered Manufacturing method. it is a novel technique to build net-shaped metal component in a

layer –by–layer manner by applying metal wire and electric arc. This technique is used for production of complex featured and large scale parts in aerospace and metal- die industries.



3-D printed metal part – through Yaskawa Arc Welding Robot