

One Day Workshop On 3d Printing on 24th January, 2024

Introduction: The recent one-day workshop, centered on 3D Printing Technology, offered an extensive insight into the field, particularly emphasizing hands-on experience in the disassembly and assembly of 3D printers, alongside imparting essential skills for designing and manufacturing models. Primarily targeting beginners and intermediate enthusiasts, the workshop was a gateway to understanding the pragmatic and technical facets of 3D printing.

Chief Guest: Mr. Rakesh Kumar, NCAM, Hyderabad.

The workshop was graced by the presence of Mr. Rakesh Kumar from NCAM, Hyderabad. A distinguished personality in additive manufacturing, Mr. Kumar's participation as the chief guest underscored the workshop's significance in the evolving sphere of technology.

Presiding Dignitaries

The inauguration of the event was under the esteemed leadership of Dr. K L Narayana, Director-FST, accompanied by Dr. G Suresh Kumar, Associate Dean of Academics, and Dr. Barla Madhavi, Head of the Mechanical Engineering Department. The workshop's coordination, led by Dr. A Manmadhachary, was pivotal to the event's success.

Inaugural Session

Initiated with an introductory address by Dr. K L Narayana, the session set forth the workshop's goals and anticipated outcomes. This was followed by a compelling keynote from Mr. Rakesh Kumar, highlighting the pivotal role of 3D Printing technologies in modern industrial applications.

Agenda:

Morning Session: Introduction and Disassembling 3D Printers

09:00-09:30 - Registration and Opening Remarks

09:30-10:00 - Introduction to 3D Printing: An Exploration of its technology and industry applications.

Overview of 3D printing technology

Applications and advancements in various industries

10:00-11:00 - Types of 3D Printers and Their Components

- Detailed description of different types of 3D printers (FDM, SLA, SLS)
- Understanding the components: extruders, hotends, beds, motors, etc.

11:00-12:30 - Hands-On: Disassembling a 3D Printer

- Guided disassembly of FDM printers
- Identifying and understanding the function of each component

Afternoon Session: Assembling and Using 3D Printers

13:30-14:30 - Assembling a 3D Printer

Step-by-step guidance on assembling
Calibration and troubleshooting

14:30-15:30 - Designing for 3D Printing

Introduction to 3D modelling software (e.g., TinkerCAD, Fusion 360)
Design principles for 3D printing

15:30-16:30 - Hands-On: 3D Printing a Model

Participants design their own 3D model
Preparing the design for printing (slicing)

16:30-17:30 - Final Printing and Q&A

Printing the designed models
Q&A and wrap-up discussion

Outcomes:

- Participants gained a foundational understanding of 3D printing technology.
- Hands-on experience in both disassembling and assembling a 3D printer, providing insight into the inner workings of the machines.
- Skills in designing basic 3D models suitable for printing.
- Practical experience in setting up prints and troubleshooting common issues.

Participant Feedback:

- The workshop was highly rated for its practical, hands-on approach.
- Participants appreciated the balance between theoretical knowledge and practical skills.
- Requests for more advanced follow-up workshops were made.

Recommendations for Future Workshops:

- Include more advanced modules on 3D printer maintenance and troubleshooting.
- Provide additional resources for participants to access post-workshop.
- Consider a two-day format to allow deeper exploration into both design and printing aspects.

Concluding Remarks:

The workshop successfully demystified many aspects of 3D printing technology for the participants and equipped them with the foundational skills to start their journey in 3D printing. The engagement and feedback from the participants suggest a growing interest and need for more in-depth knowledge in this field.

