



PRAGATI ENGINEERING COLLEGE

(AUTONOMOUS)

DEPARTMENT OF MECHANICAL ENGINEERING

Academic year: 2025-26

Date: 16-10-2025

CIRCULAR

Additive Manufacturing Club of Mechanical Engineering Department in association with Career Guidance Cell is organizing a Seminar to the Mechanical Engineering students on 18th October 2025. The Theme of the Seminar is "*Materials Used in Additive Manufacturing*".

Event : Seminar.

Date of the Event : 18th October 2025.

Venue : Cad Lab.

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2. Departmental file.
3. AM Club In-charge – ME.
4. Career Guidance Cell In-charge – ME.



PRAGATI ENGINEERING COLLEGE

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INDUSTRY 4.0 CLUBS

ADDITIVE MANUFACTURING CLUB

ORGANISED BY DEPARTMENT OF MECHANICAL ENGINEERING IN ASSOCIATION

WITH

CAREER GUIDANCE CELL

MATERIALS IN ADDITIVE MANUFACTURING

SPEAKER :

Mrs. B.Bharath Kumar

FACULTY COORDINATOR

Mr. P. Ram Prasad

Assistant Professor

Mechanical Engineering Department

VENUE: Cad Lab

DATE: 18th October 2025

TIME: 10:00 AM Onwards

STUDENT COORDINATOR

Mr. P.Eswar Prasanth (23A31A0341)

Mechanical Engineering Department





PRAGATI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

A SEMINAR

ON

“MATERIALS USED IN ADDITIVE MANUFACTURING”

Dt. 18.10.2025

A.Y 2025-26

The Additive Manufacturing Club of the Mechanical Engineering Department, in collaboration with the Career Guidance Cell, organized a seminar on “**Materials Used in Additive Manufacturing**” in the CAD Lab. The session was presented by **Mr. B. Bharath Kumar** and attended by 29 Mechanical Engineering students. The speaker explained various materials used in 3D printing, including polymers, metals, ceramics, composites, and biomaterials, highlighting their importance in determining the quality and performance of printed components. The seminar provided valuable insights into the role of materials in additive manufacturing and helped students gain a better understanding of modern materials in additive manufacturing technologies.

Classification of Materials in Additive Manufacturing

Materials used in additive manufacturing can be broadly classified into the following categories:

1. Polymeric Materials
2. Metallic Materials
3. Ceramic Materials
4. Composite Materials
5. Biomaterials

1. Polymeric Materials

Polymeric materials are the most commonly used in 3D printing, especially for rapid prototyping and functional parts.

Common polymers include:

- PLA (Polylactic Acid): Biodegradable, easy to print, suitable for educational and consumer products.
- ABS (Acrylonitrile Butadiene Styrene): Strong and durable, used in engineering applications.
- PETG (Polyethylene Terephthalate Glycol): Combines the strength of ABS with the ease of printing of PLA.

ADDITIVE MANUFACTURING CLUB

- Nylon (Polyamide): Offers flexibility, toughness, and wear resistance, ideal for functional parts.

2. Metallic Materials

Metal additive manufacturing is used for producing high-performance parts where strength and durability are critical.

Common metals include:

- Stainless Steel: High strength and corrosion resistance.
- Titanium Alloys: Lightweight and biocompatible.
- Aluminum Alloys: Good strength-to-weight ratio.
- Cobalt-Chromium Alloys: High wear resistance.

3. Ceramic Materials

Ceramics are used for components requiring high-temperature stability, wear resistance, and chemical inertness.

Examples include: Alumina (Al_2O_3), Zirconia (ZrO_2), and Silicon Carbide (SiC).

However, ceramics are challenging to print due to their brittle nature and high sintering temperatures.

4. Composite Materials

Composites combine two or more materials to achieve enhanced properties such as high strength, stiffness, and reduced weight.

Examples include:

- Carbon fiber-reinforced polymers (CFRP)
- Glass fiber reinforced composites

These materials are often printed using polymer matrices infused with reinforcing fibers.

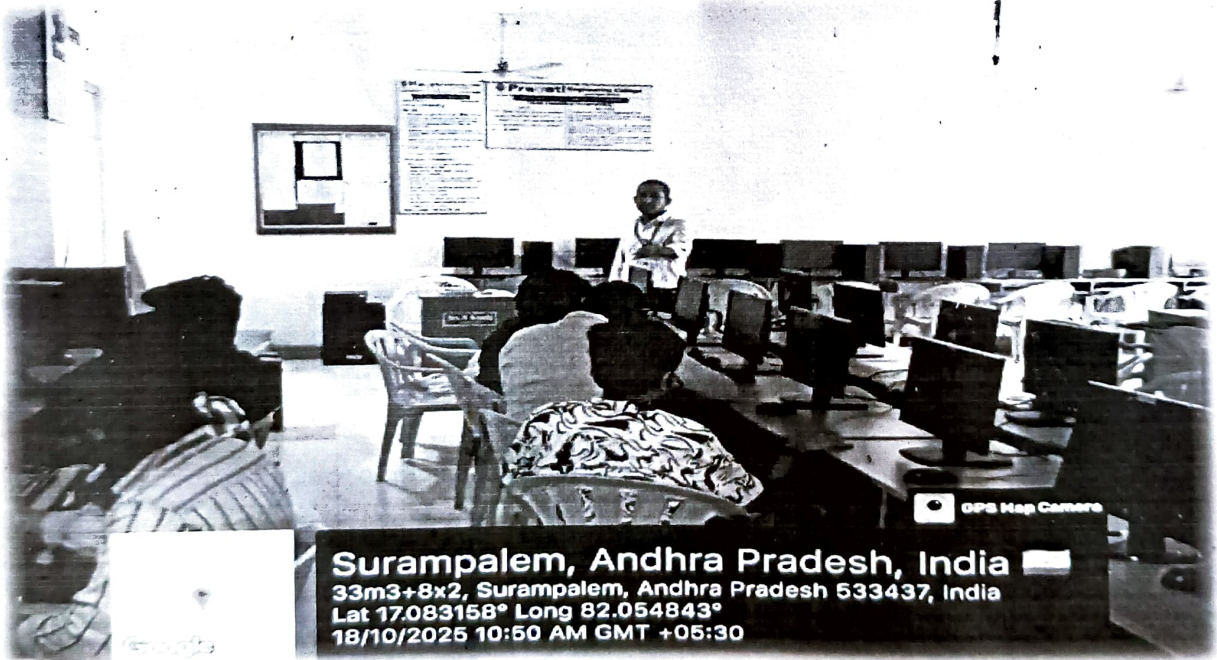
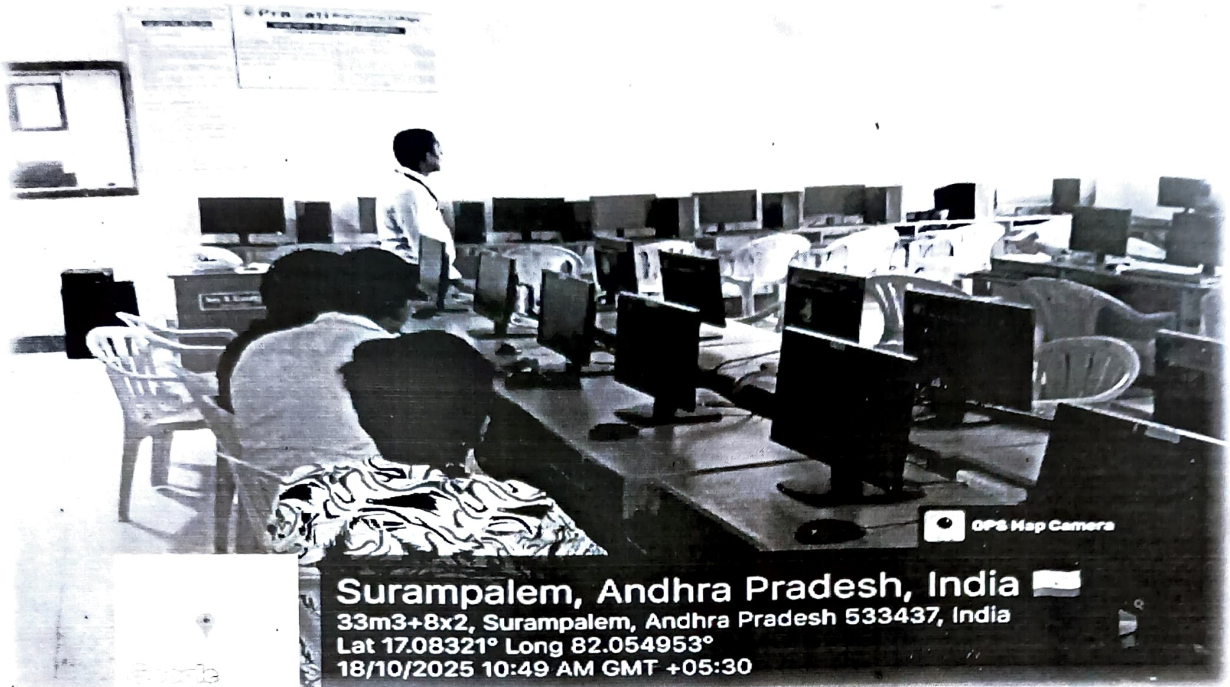
5. Biomaterials

Biomaterials are designed to interact safely with biological systems.

Examples include:

- Hydrogels: Used for tissue scaffolds and drug delivery.
- Biocompatible polymers (like PEEK and PLA): Used for surgical purposes.

PICTURES OF THE EVENT:




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DEPARTMENT OF MECHANICAL ENGINEERING

Participants List

Name of the Event: Materials Used in Additive Manufacturing
Venue : CAD LAB
Date : 18-10-2025

S.No	Roll No	Name	Signature
1	23A31A0347	S. Uday. III ME	S. Uday.
2	23A31A0351	V. Venkata Kowshik - III MECH	V. V. Kowshik
3	23A31A0348	T. A. Narasimham	Narasimham
4	24A35A0309	Ramesh	Ramesh
5	24A35A0315	S. Chandra	S. Chandra
6	23A31A0352	V. V. Trinadh	V. V. Trinadh
7	24A35A0317	Y. Siya Sanker - III	Y. Siya
8	24A35A0305	K. Sankar - 3rd Mech.	K. Sankar
9	24A35A0313	S. Mani - III mech	S. Mani
10	24A35A0301	A. Deepak - 3rd	A. Deepak
11	24A35A0307	M. H. Balu - 3rd mech	M. H. Balu
12	24A35A0301	Deepak. A	Deepak
13	22A31A0344	R. Sai - 3rd	R. Sai
14	23A31A0327	K. Sivaji Gangi	K. Sivaji
15	23A0341	P. Prasanth	P. Prasanth

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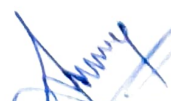
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S.No	Roll No	Name	Signature
16	24A35A0317	P.V. Neelak - 3 rd Mech	P.V. Neelak
17	24A35A0314	S. Sridhar - III	S. Sridhar
18	24A35A0303	D. Divak	D. Divak
19	22A31A0363	K. Venkat	K. Venkat
20	23A35A0322	P. Siva Sankar	P. Siva
21	24A35A0308	M. Suresh - III	M. Suresh
22	22A31A0345	A. Uma Mahesh	A. Uma
23	23A31A0322	G. Karun Kumar	G. Karun
24	24A31A0343	R.P. Arun	R.P. Arun
25	22A31A0341	G. Ravi	G. Ravi
26	23A31A0310	A.L.D.N. Rajell - III	Rajell
27	22A31A0377	P. Sai	P. Sai
28	22A31A0379	Ganga Raju	Ganga Raju
29	22A31A0376	O. Surya Rao	O. Surya Rao


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