

## **ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

(Unit of Alva's Education Foundation (R), Moodbidri)

Affiliated to Visvesvaraya Technological University, Belagavi &

Approved by AICTE, New Delhi. Recognized by Government of Karnataka.

**Accredited by NAAC with A+ & NBA accreditation for ECE & CSE**

## **ENVISION LAB – TECHNICAL TALK REPORT**

**MAY-2023**

**ENVISION LAB REPORT**



Alvas Institute of Engineering and Technology

# ENVISION LAB

TECHNICAL TALK  
ON  
"ADDITIVE  
MANUFACTURING AND  
ITS APPLICATIONS

By  
Dr. Roopa S  
Associate Professor  
JSSSTU Mysore

On  
27th May 2023

@

11 a.m

Venue:

Civil Department Seminar hall



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Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka Ph: 08258-262725;

Mob: 722262724, 7026262725, mail: principalaiet08@gmail.com



## ENVISION LAB

### Report On Technical Talk On "Additive Manufacturing And Its Applications" by Dr. Roopa S

**Date of event: 27/05/2023**

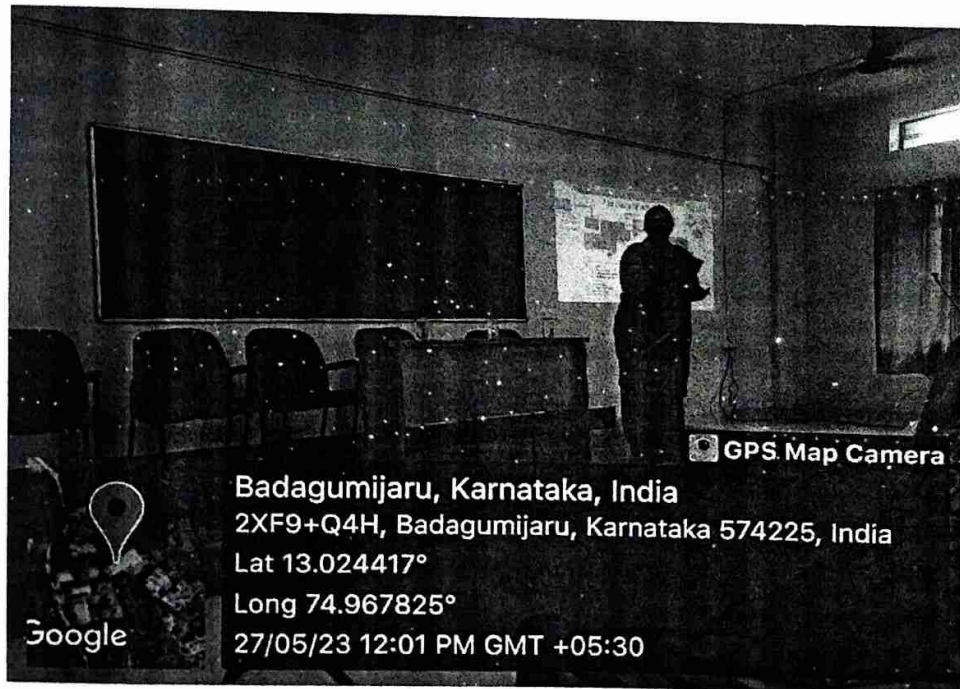
**Venue: Alva's Civil Department Seminar Hall**

**Time: 11 am to 12.30 pm**

**Participants: Around 100 engineering students and faculty members**

**Introduction:** The purpose of this report is to summarize a technical talk on "Additive Manufacturing and Its Applications" delivered to engineering students. The talk aimed to provide an overview of additive manufacturing, commonly known as 3D printing, and highlight its diverse applications in various engineering fields.

**Overview of Additive Manufacturing:** The talk commenced with an introduction to additive manufacturing. It explained that additive manufacturing is a process of creating three-dimensional objects by layering materials based on a digital model. Unlike traditional subtractive manufacturing techniques, such as cutting or machining, additive manufacturing builds objects layer by layer, offering greater design flexibility and customization.



**Key Principles of Additive Manufacturing:** The speaker discussed the key principles underlying additive manufacturing.

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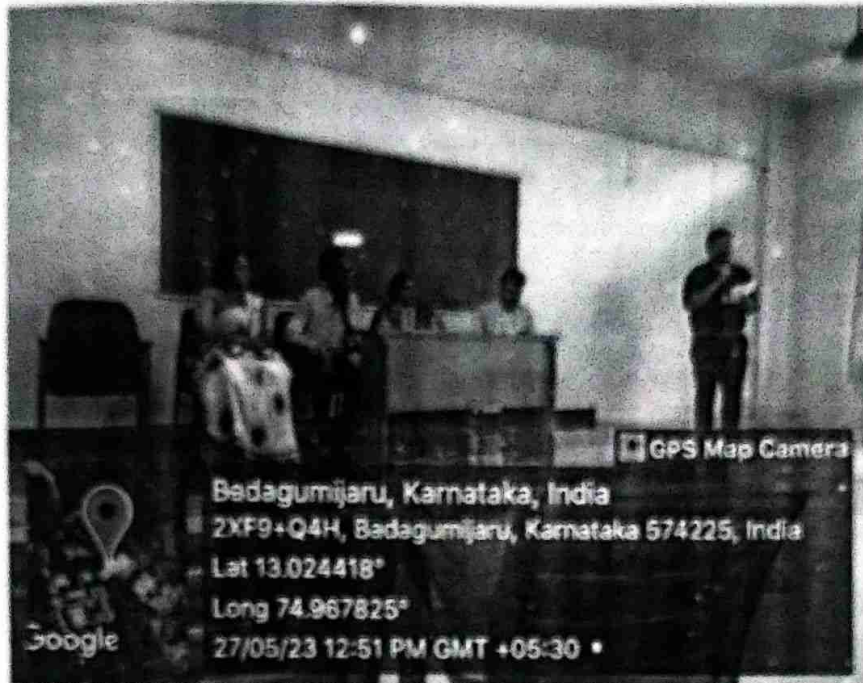
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Mob: 722262728, 7026262725, mail: principal@alva.org



- a. Digital Design: The process begins with a digital model of the object, created using computer-aided design (CAD) software or obtained from a 3D scan.
- b. Layer-by-Layer Construction: The object is divided into cross-sectional layers, and the printer adds material layer by layer, fusing or curing it to create the final product.
- c. Material Selection: Additive manufacturing employs a wide range of materials, including plastics, metals, ceramics, and composites, depending on the application requirements.
- d. Post-Processing: After printing, the object may require post-processing steps, such as curing, polishing, or painting, to achieve the desired final properties and appearance.
- Applications of Additive Manufacturing: The talk explored the extensive applications of additive manufacturing in various engineering domains:
  - a. Prototyping: Additive manufacturing enables rapid prototyping, allowing engineers to quickly produce and test designs before committing to large-scale production.
  - b. Aerospace: The aerospace industry utilizes additive manufacturing for lightweight and complex component production, reducing material waste and improving fuel efficiency.
  - c. Biomedical Engineering: Additive manufacturing plays a crucial role in creating patient-specific medical devices, prosthetics, implants, and even human tissue scaffolds.
  - d. Automotive: Additive manufacturing finds applications in automotive manufacturing for producing lightweight parts, custom components, and specialized tools.



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e. Architecture and Construction: Large-scale 3D printers can create complex architectural models, building components, and even entire structures using various materials.

f. Consumer Products: Additive manufacturing allows for personalized and customizable consumer products, including jewelry, fashion accessories, and home decor.

g. Electronics: Additive manufacturing techniques are used to fabricate electronic components, circuit boards, and even functional prototypes of devices.

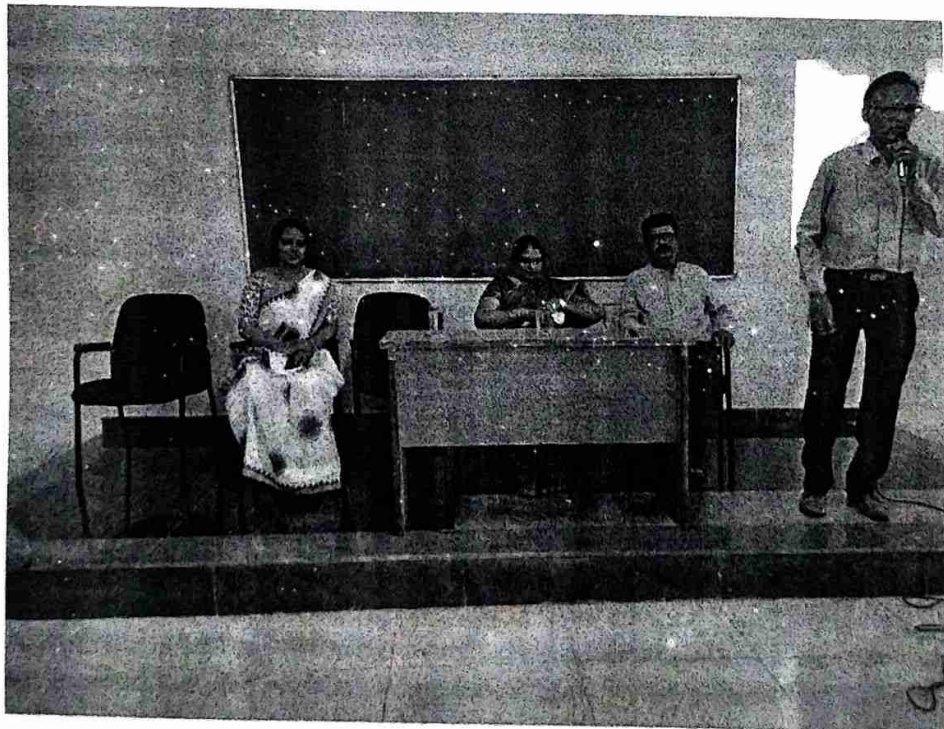
- **Advantages and Limitations:** The talk discussed the advantages and limitations of additive manufacturing:

## a. Advantages:

- **Design Flexibility:** Complex geometries and intricate designs can be easily fabricated.
- **Rapid Prototyping:** Accelerated product development and reduced time-to-market.
- **Customization:** Tailoring products to specific user needs or preferences.
- **Material Efficiency:** Reduced material waste compared to traditional manufacturing.
- **On-Demand Manufacturing:** Cost-effective production of low-volume or niche products.

## b. Limitations:

- **Limited Material Selection:** Certain materials may not be suitable for additive manufacturing.
- **Size Constraints:** Large-scale objects may pose challenges due to printer size limitations.
- **Surface Finish:** Achieving high-quality surface finish may require additional post-processing.
- **Cost:** Initial setup costs and material expenses can be relatively high.



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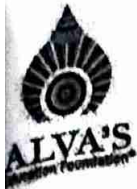
Outcome: The technical talk on additive manufacturing provided engineering students with a comprehensive understanding of the principles, applications, advantages, and limitations of this transformative technology. By exploring various industries benefiting from additive manufacturing, the talk aimed to inspire students to leverage its potential in their future engineering careers.

Mrs. Shwetha M.S  
Faculty Coordinator  
Envision Lab of AIET

PRINCIPAL  
PRINCIPAL

Alva's Institute of Engg. & Technology  
Mijar, MOODBIDRI - 574 225





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Mob: 722262724, 7026262725, mail: principal.alet08@gmail.com

25/05/2023

To,  
Mr. Vivek Alva  
Managing Trustee  
Alvas Education Foundation  
Moodbidri

Through  
The Principal  
AIET, Moodbidri

Respected Sir,

**SUB: approval of budget for the technical talk by Dr. Roopa on 27<sup>th</sup> May 2023 from ENVISION LAB of AIET reg.**

As a part of **ENVISION LAB**, planned to conduct technical talk on 27<sup>th</sup> May-2023 on "Additive Manufacturing and its applications" by the external resource person **Dr. Roopa**, Associate Professor from JSS University (formerly SJCE), Mysore. In this regard the budget is set for resource person's travel plan, commercials and miscellaneous expenditure for the event. We request you to kindly approve for the same.

Sl no	Particulars	Description	Amount
1.	Bus ticket for resource person	Mysore to Moodbidri 27 <sup>th</sup> May 2023	1000/-
2.	Cottage	One day stay for resource person	As per norms of AEF
3.	Bus ticket for resource person	Moodbidri to Mysore 28 <sup>th</sup> May 2023	1000/-
4.	Remuneration	Remuneration for resource person	2500/-
5.	Momentum	One momentum for resource person	—

ENVISION LAB Coordinator

Mrs. Shwetha M.S  
Dept of ECE  
AIET



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## DEPARTMENT OF MECHANICAL ENGINEERING

Title of the talk : ADDITIVE MANUFACTURING & ITS IMPORTANCE

Date : 27/05/2023

time : 10:00 AM-11:00 AM

mode : OFFLINE

Semester : 6<sup>th</sup> semester

Sl no.	Name	USN	Sign
1	ADHWITH	4AL20ME001	Adhith..
2	AKSHAR N	4AL20ME002	Akshar
3	BABUGOUDA SHANKARAGOUDA	4AL20ME003	Babugouda
4	CHANDAN BHOSALE	4AL20ME004	Chandan
5	CH'NRANTH H S	4AL20ME006	Chanth
6	DILEEP P R	4AL20ME007	Dileep P.R.
7	FRISON NIKHIL MARTIS	4AL20ME008	Frison
8	GIRISH B BANNIKOPPA	4AL20ME009	Girish
9	JENNY FERNANDES	4AL20ME011	Jenny
10	MANOJ KUMAR KARNAM	4AL20ME012	Manoj
11	MANU K N	4AL20ME013	Manu
12	MOHAMMED SWAHID	4AL20ME014	M. Swahid
13	MOHAMMED FAHAD H	4AL20ME015	Mohammed
14	NAVYASHREE H B	4AL20ME016	Navyashree
15	PALLAVI P	4AL20ME017	Pallavi
16	PAVAN KUMAR H R	4AL20ME018	Pavan H.R.
17	RAKSHITH S	4AL20ME019	Rakshith
18	VARUN S BHANDARY	4AL20ME021	Varun
19	VIGNESH	4AL20ME022	Vignesh
20	DODDAMALLAIAH	4AL21ME400	Doddamalliah
21	RAHUL KUMBAR	4AL21ME401	Rahul
22	RAKESH KELAGADE	4AL21ME402	Rakesh
23	SACHIN RATHOD	4AL21ME403	Sachin
24	SANDEEP JARALE	4AL21ME404	Sandeep





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## DEPARTMENT OF MECHANICAL ENGINEERING

Semester : 4<sup>th</sup> semester

Sl no.	Name	USN	Sign
1	AJITH R	4AL21ME001	
2	AKHIL SHARMA K	4AL21ME002	
3	AKSHAY KRISHNA M	4AL21ME003	
4	CHARAN KUMAR	4AL21ME004	
5	DHARSHITH A	4AL21ME005	
6	MELVIN VINAY SERA	4AL21ME006	
7	MOHAMMAD SWALIH	4AL21ME007	
8	NARAYAN V	4AL21ME008	
9	NAVANEETH H SHETTY	4AL21ME009	
10	NITHIN M	4AL21ME010	
11	PAIGAMBAR S NADAF	4AL21ME011	
12	SHASHWATH R GOWDA	4AL21ME013	
13	SUDESH D SHETTY	4AL21ME015	
14	KARTHIK VISWANATH DHANNUR	4AL22ME401	
15	PRAVEEN VEERAPPA CHAVADI	4AL22ME402	
17	KRISHNA KYADGIHALLI	4AL22ME403	
18	KARTHIK GOWDA B C	4AL22ME400	

Forum Coordinator

HOD  
H. O. D.  
Dept. Of Mechanical Engineering  
Alva's Institute of Engg. & Technology  
Mijar, MOODBIDRI - 574 296




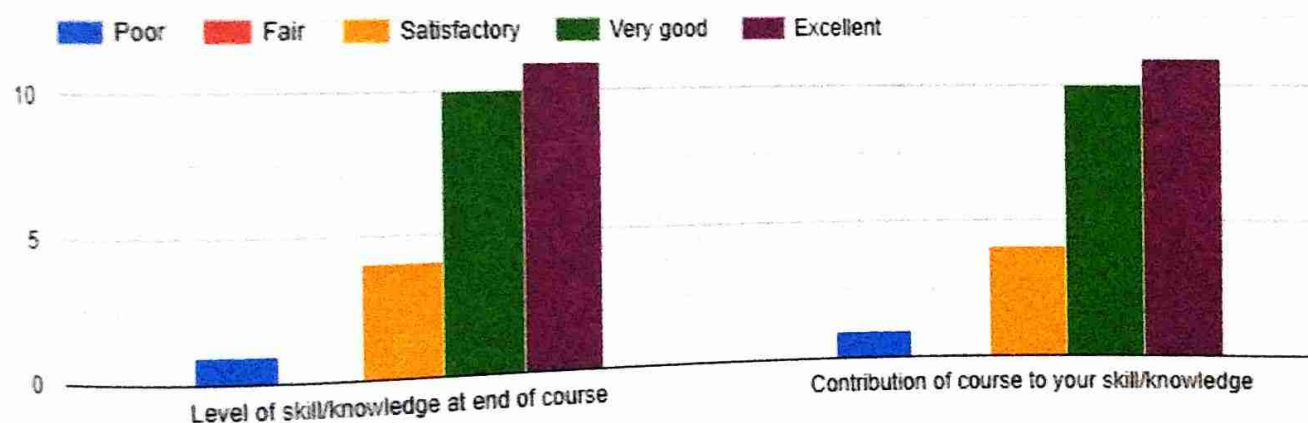
## TECHNICAL TALK ON "ADDITIVE MANUFACTURING & ITS IMPORTANCE"

Dept. of Mechanical Engineering

Please submit feedback regarding the course you have just completed, including feedback on course structure, content, and instructor.

Contribution to learning

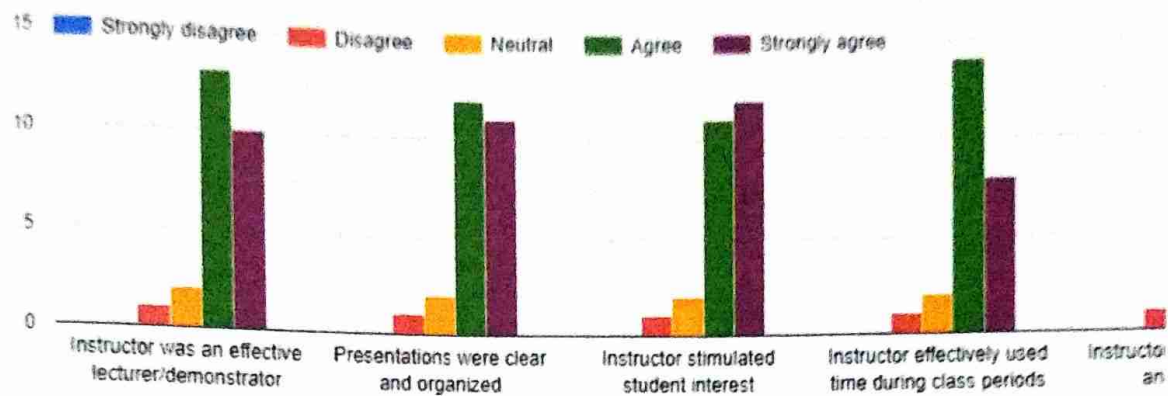
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### Skill and responsiveness of the instructor

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### Course content

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