

Guest Lecture on “Additive Manufacturing” on 24th Oct 2020

Date of the Event	24 th October 2020
Title of the Event	Guest Lecture on Additive Manufacturing
Number of Sessions	01
Resource Speakers	Sunil G S , Mercedes Benz Research and Development (MBRDI) India Ltd.
Organized by	Department of Mechanical Engineering, MVJCE

The latest industrial revolution, Industry 4.0, is encouraging the integration of intelligent production systems and advanced information technologies. Additive manufacturing (AM) is considered to be an essential ingredient in this new movement.

Keeping this in mind, the Department of Mechanical Engineering, MVJCE, organized a Guest Lecture on “Additive Manufacturing” on 24th Oct 2020, Saturday from 01.45 PM to 04.15 PM. The Guest Lecture was organized to provide insights into state-of-the-art recent trends and advancements in additive manufacturing, digital data exchange in new manufacturing processes and opportunities for our students in the domain of additive manufacturing. Around 90 participants (75 Students and 15 Faculty Members) benefited from this Guest Lecture.

The Guest Lecture was conducted in association with Dynamech – Department Club and Institution’s Innovation Council (IIC).

Sessions were conducted online (Microsoft Teams) from 01.45 PM to 04.15 PM.



DEPARTMENT OF MECHANICAL ENGINEERING,
PRESENTS IN COLLABORATION WITH
INSTITUTION'S INNOVATION COUNCIL (IIC)

ONLINE GUEST LECTURE ON
ADDITIVE MANUFACTURING

BY SUNIL G S
MERCEDES BENZ RESEARCH AND
DEVELOPMENT INDIA (MBRDI)

Date: **24/10/2020 (Saturday)**
Time: **01.45 PM – 04.15 PM**

Platform: **MS Teams**
Registration: **Office Forms**

Photo 1 – Banner of the Event Published in all the Social Media.

Proceedings of the Event

Dr. VivekanandHuddar, HOD & Convenor of the Event welcomed the Speaker and all the participants to the program. The distinguished Principal of MVJ College of Engineering, Dr. P Mahabaleswarappa, inaugurated the Online Guest Lecture. He highlighted the importance of additive manufacturing, and the role of digital data exchange in the new manufacturing processes related to Industry 4.0.

Dr. Santosh N, Associate Professor in Mechanical Engineering Department, MVJCE, introduced the resource person to the participants. Mr. Sunil G. S, the Deputy Manager, Mercedes Benz Research and Development India Ltd. (MBRDI) explained about the vast opportunities available in Additive Manufacturing. He stated that there is a large gap between the demand and the supply of skilled persons in Additive Manufacturing. Almost 80% of the companies have shortage of resources in Additive Manufacturing. Additive Manufacturing is creating opportunities and people need to upgrade themselves to the skills.

Additive manufacture allows to design better products and improve supply chain operations. In MBRDI, Additive manufacturing started with improving the efficiency of a component in one particular engine. In next version of jet engine configuration, more than 80% parts were made by additive manufacturing, reduced the part to the extent of 300:1.

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3D Printing (3DP)

KEY METRICS

Maximum build size	14 in x 10 in x 8 in
Resolution in (x,y)	640 dpi
Resolution in z	Variable
Speed	Fast
Cost	Low
Available materials	Plaster, sand, oxide ceramics, sugar and starch for food printing

ADVANTAGES

- Can create extremely realistic multi-color parts (24-bit color) using inkjet technology
- Can generate complex components with internal degrees of freedom
- Economical
- Versatile



Printed with Z Corp 650


KEY APPLICATION AREAS

- Widely used to print colorful and complex parts for demonstration purposes
- Molds for sand casting of metals

DISADVANTAGES

- Very limited materials suite
- Low resolution (lowest of all AM technologies)
- Negligible mechanical properties (unusable for any structural application)

Photo – 2 Screenshot of the presentation delivered by the Guest Speaker



Additive Manufacturing

Photo – 3 Screenshot of the presentation delivered by the Guest Speaker

Ecosystem of Additive Manufacturing include machines, software, powders, innovation and continuous research. Increasing complexity of design does not increase the cost unlike in conventional manufacturing processes.

Research space exists for enthusiastic scholars in making different powders, additive designs, controlling the properties and repair of AM components.

Guest Lecture Culmination

At the end of the session, Dr.Vivekanand B Huddar, Head of the Department, Mechanical Engineering presided over the valedictory function. He highlighted the importance of the Additive Manufacturing and the valuable informed shared by the speaker. Further, HoD provided concluding remarks and thanked the Speaker and the participants. Guest Lecture was concluded with vote of thanks to the Management at MVJCE, the Organizing committee, the Resource speakers and all the participants. A feedback session was conducted at 04.15 PM.

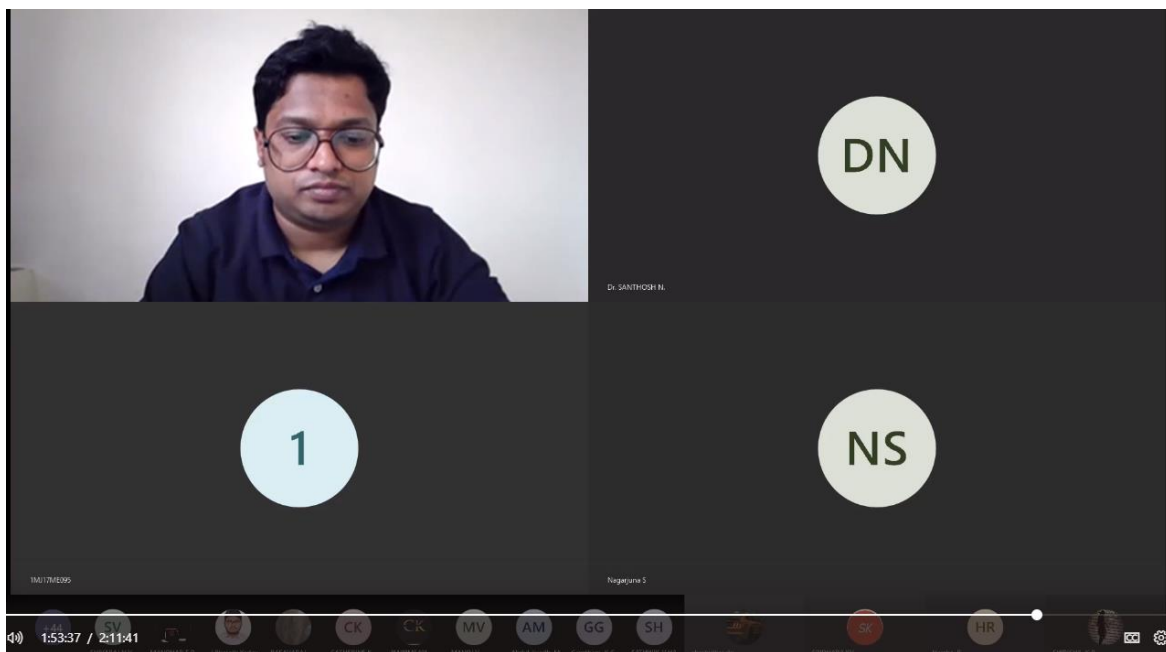


Photo 3 – Guest Speaker, replying to the Questions asked by the participants

Outcome of the Guest Lecture Event

The Guest Lecture Event enlightened the students and faculty of MVJCE on the opportunities available in Additive Manufacturing, material characterization of 3D printed parts and new product development.

Link to Video

Day	Topic	Speaker	Link
24 Oct 2020 01.45 PM to 04.15 PM	Guest Lecture on Additive Manufacturing	Sunil G S, Mercedes Benz Research and Development India, Bengaluru Area, India.	https://web.microsoftstream.com/video/fbca07bd-1149-4910-86db-63220414a71b