

# Students' Diary

## Additive Manufacturing:

### What you see is what you build!

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Additive Manufacturing is a process by which digital 3D design data is used to make up an element in layers by depositing material. The most exciting thing about this process is that an idea can be brought to life in a few hours, and we can make things anywhere at any time!

I was a little confused before joining MTech in Additive Manufacturing at IITH and worried about a career in AM field after MTech. Since I was not much aware of this emerging technology at that time. Right now, I'm in the final year of MTech and working on the project entitled "Deformation and Recrystallization behavior of Selective-Laser-Melted High Entropy Alloy". I have seen in my entire MTech that people have misconceptions about this cutting-edge technology which is why I am writing this article about the phenomenal and diverse applications of additive manufacturing, showing us the full eventuality of this technology.

I would like to tell the people some exciting 3D printing facts so that they get inspired to give life to their 3D printing projects.

- 3D Printing is older than the Internet: Sir Tim Berners Lee invented the World WideWeb in 1989 while the groundwork for modern 3D printers was first laid by Chuck Hull of 3DSystems in 1986.



Chuck Hull of 3D Systems

- 3D printing can help to make houses in space: NASA recently hosted a design competition for building houses on Mars and the winner of phase 1 was ICEHOUSE which used 3D printing and ice to produce an igloo-suchlike structure.



NASA's Contour Crafting Technology

- 3D printing is on the silver screen: 3D printing techniques have been featured in movies such as Iron Man, The Hobbit, Jurassic Park, Avatar, etc.



3D-printed crown (Black Panther)

It helps save lives: 3D Bioprinting allows the creation of various tissue structures, such as kidney tissue or skin tissue. Indeed, Blood vessels and bones are now getting 3D printable using this technology.



A white 3D-printed model of a human heart

- We can 3D print Food: Regarding meat 3D printing, Giuseppe Scionti, an Italian bioengineer worked on some bioprinting projects, such as creating synthetic tissues, like artificial corneas and 3D printed artificial skin.
- We can use numerous materials for 3D printing: Plastic, metal, resin, 3D printed wood, 3D printed meat, etc.

So, there are no two ways that this technology will be the future of the Industrial Revolution. Currently, this technology is in the development phase. Developments are taking place toward making 3D printing products helpful and cost-effective.