

3D Printing

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What is 3D printing

- *For methods of applying a 2-D image on a 3-D surface*
- *Additive manufacturing or 3D printing is a process of making a three-dimensional solid object of virtually any shape from a digital model. 3D printing is achieved using an additive process, where successive layers of material are laid down in different shapes.*
- The term *additive manufacturing* refers to technologies that create objects through a sequential layering process.

General Principles

- Modeling
- Printing
- Finishing

3D Printable Models

- 3D printable models may be created with a computer-aided design(CAD) package, via a 3D scanner.
- 3D scanning is a process of collecting digital data on the shape and appearance of a real object, creating a digital model based on it.

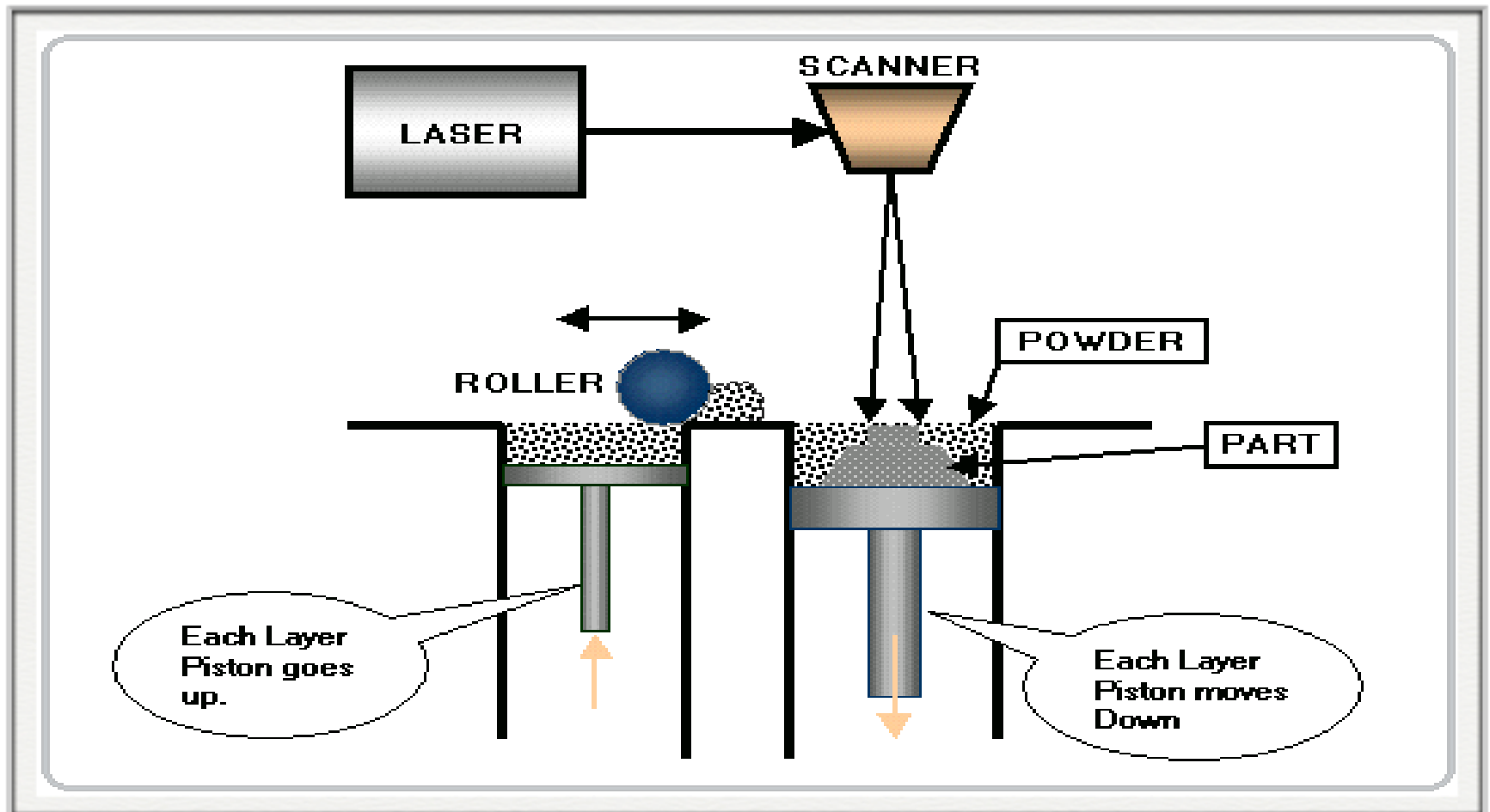
- To perform a print, the machine reads the design and lays down successive layers of liquid, powder, or sheet material to build the model from a series of cross sections.
- These layers, which correspond to the virtual cross sections from the CAD (computer aided design) model, are joined together or automatically fused to create the final shape.

3D printing Method:

-Selective laser sintering (SLS)

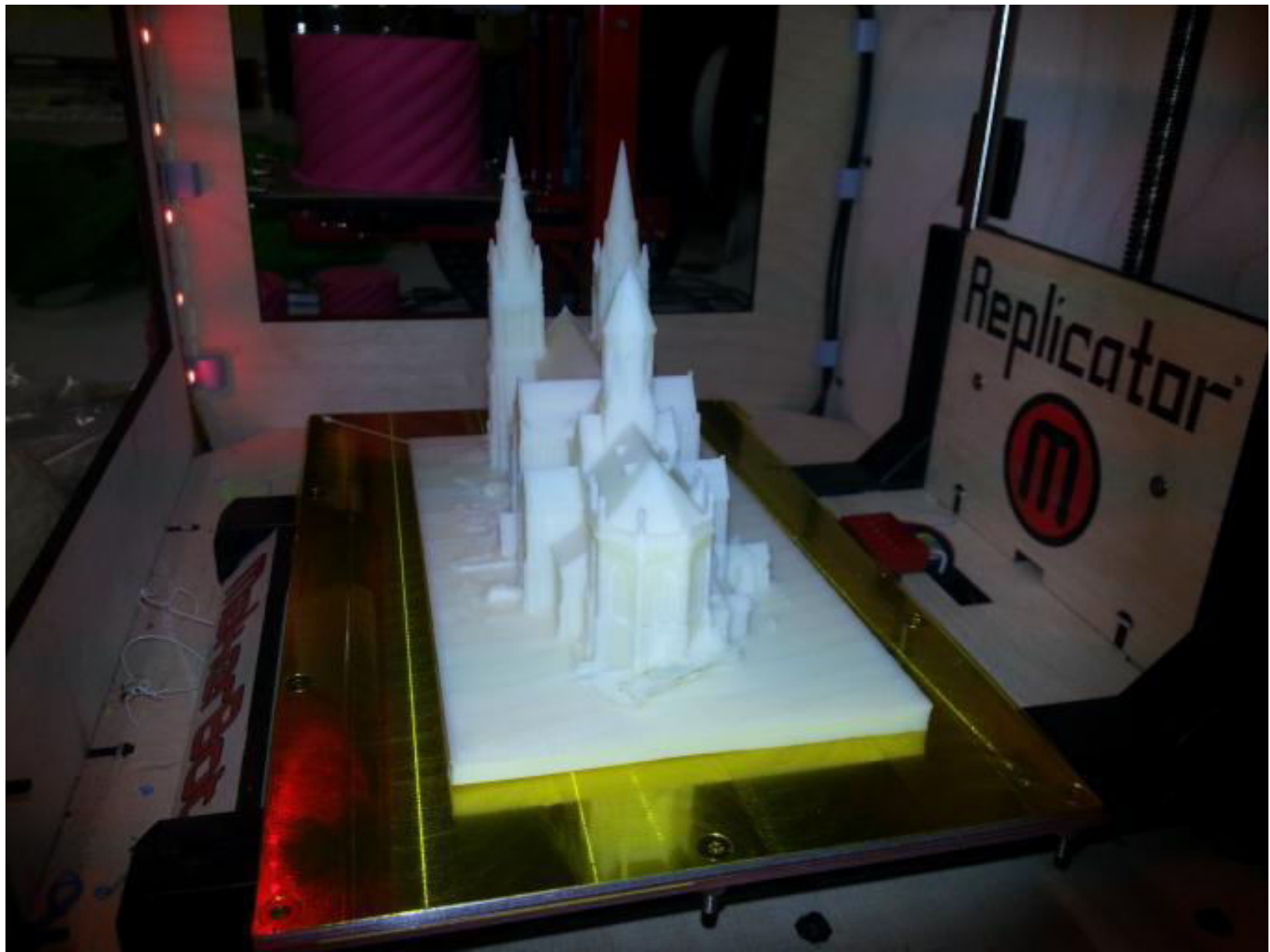
- Selective laser sintering (SLS) is an additive manufacturing technique that uses a high power laser (for example, a carbon dioxide laser) to fuse small particles of plastic, metal (direct metal laser sintering), ceramic or glass powders into a mass that has a desired 3-dimensional shape.

Selective laser sintering



Applications of 3D Printing





Challenges Facing 3D Printing

- Intellectual property rights of the 3D Printer users, including [patents](#), [industrial design rights](#), [copyright](#), and [trademark](#)
- Nearly anything can be printed by 3D Printers and this is a troubling prospect if criminals use 3D Printers to create illegal products.

Conclusion

- 3D printing technology could revolutionize and reshape the world. Advances in 3D printing technology can significantly change and improve the way we manufacture products and produce good world.

References

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THANKU