# 3D-Printing technologies

## Powder bed fusion

## SLS

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# SLS

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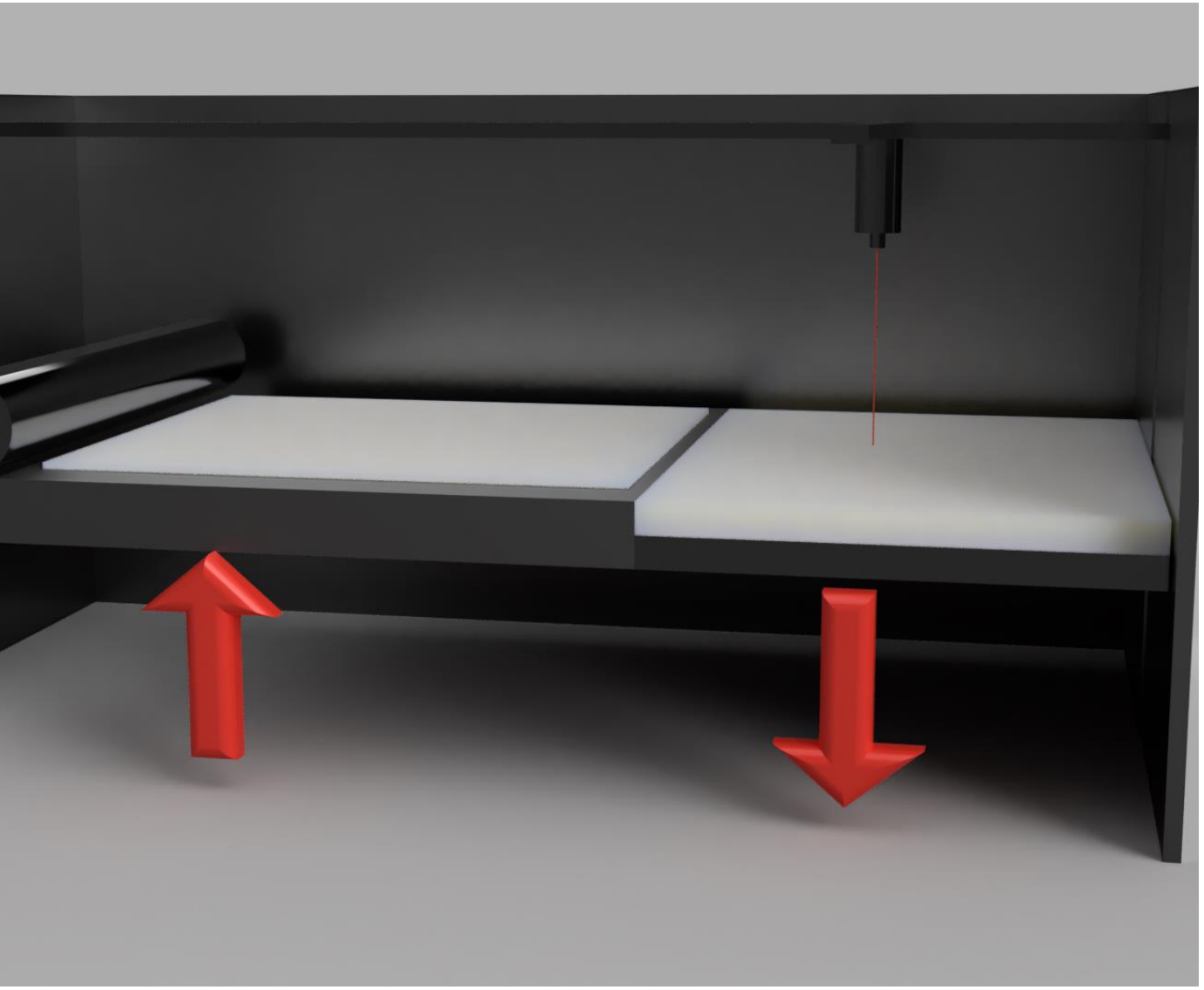

# SLS

- SLS – Selective Laser Sintering
- Based on a laser which melts plastic powder
- Laser moves either on X- and Y-direction or it is moved with the help of mirrors
- Build platform moves down after each printed layer, and a roll sweeps over with new powder

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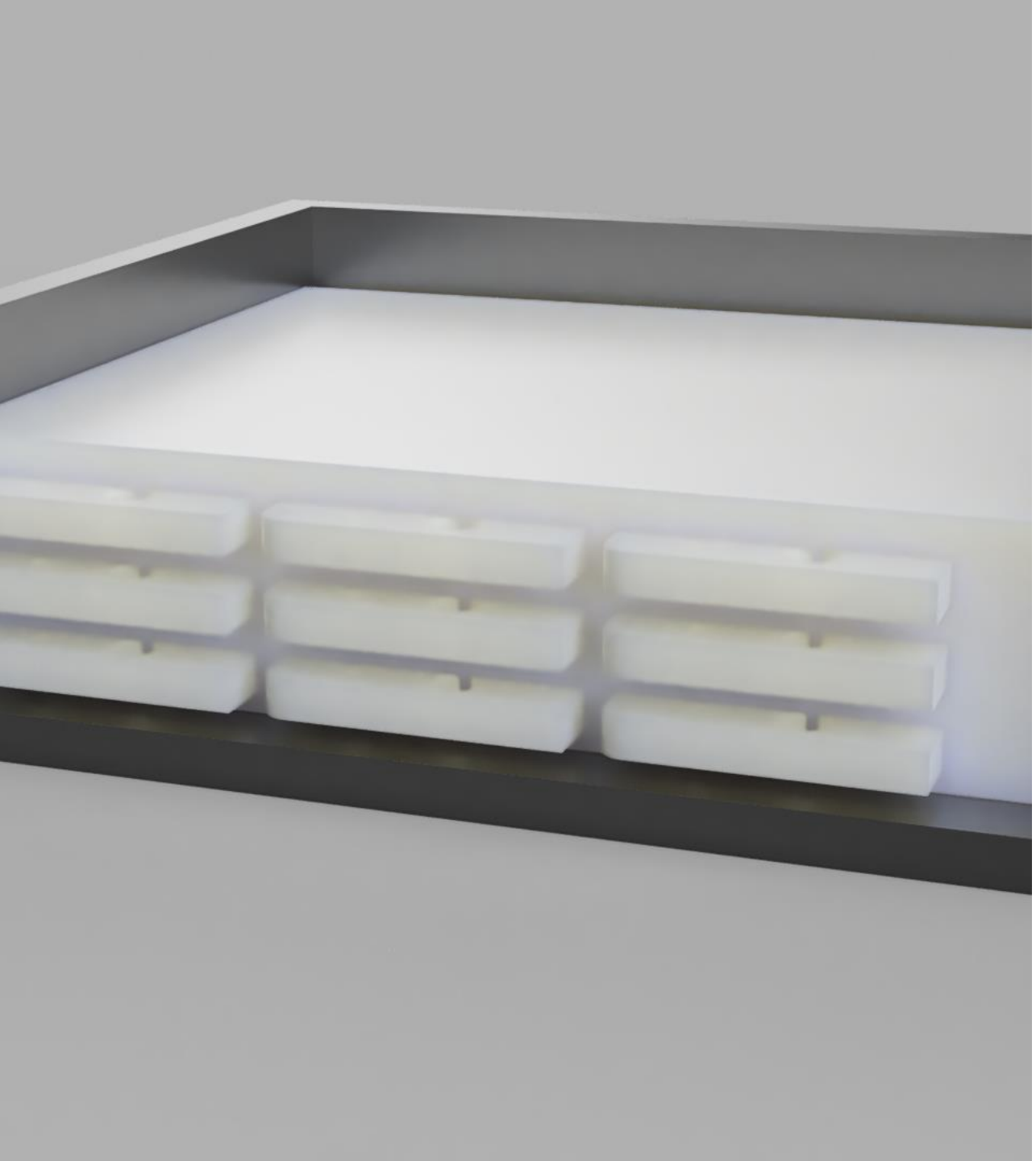

# SLS

- Metallic powder chamber
- Materials are Nylon-based plastic powders

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# Printers

SLS

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# Industrial printers

## EOS Formiga P 110 Velocis

- XY-resolution 50 µm
- Z-resolution 60-120 µm
- Build volume 200 x 250 x 330 mm
- Price 250k €+

## 3DSystems Prox SLS 6100


- XY-resolution 50 µm
- Z-resolution 80 – 150 µm
- Build volume 381 x 330 x 460 mm
- Price 200k €+

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# “Consumer printers”

## Sinterit Lisa Pro

- XY-resolution 50 µm
- Z-resolution 75 - 175 µm
- Build volume 150 x 200 x 260 mm (Depending on material and accuracy)
- Price around 14 000 €

## Sintratec Kit


- XY-resolution ~50 µm
- Z-resolution 50-150 µm
- Build volume 90 x 90 x 90 mm
- Price  4990 €

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# Pros and cons

**Pros**

- Supports
- Orientation doesn’t matter, can fit more per print
- Material recycling ability
- Prints straight to use
- Durable and accurate prints

**Cons**

- After each material change, a full clean
- Requires cleaning after each print and some printers require greasing before each print
- Requires gas to print certain materials (Argon or Nitrogen)
- Materials are mostly Nylon-based
- Requires quite a lot of space
- “Messy”

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