3D PRINTING

Manufacturing Technologies
Part 1

Something That Moves Something, created by Ohad Meyuhas, architect

Stratasys® | Education

ADDITIVE MANUFACTURING

APPLICATION

3D printing

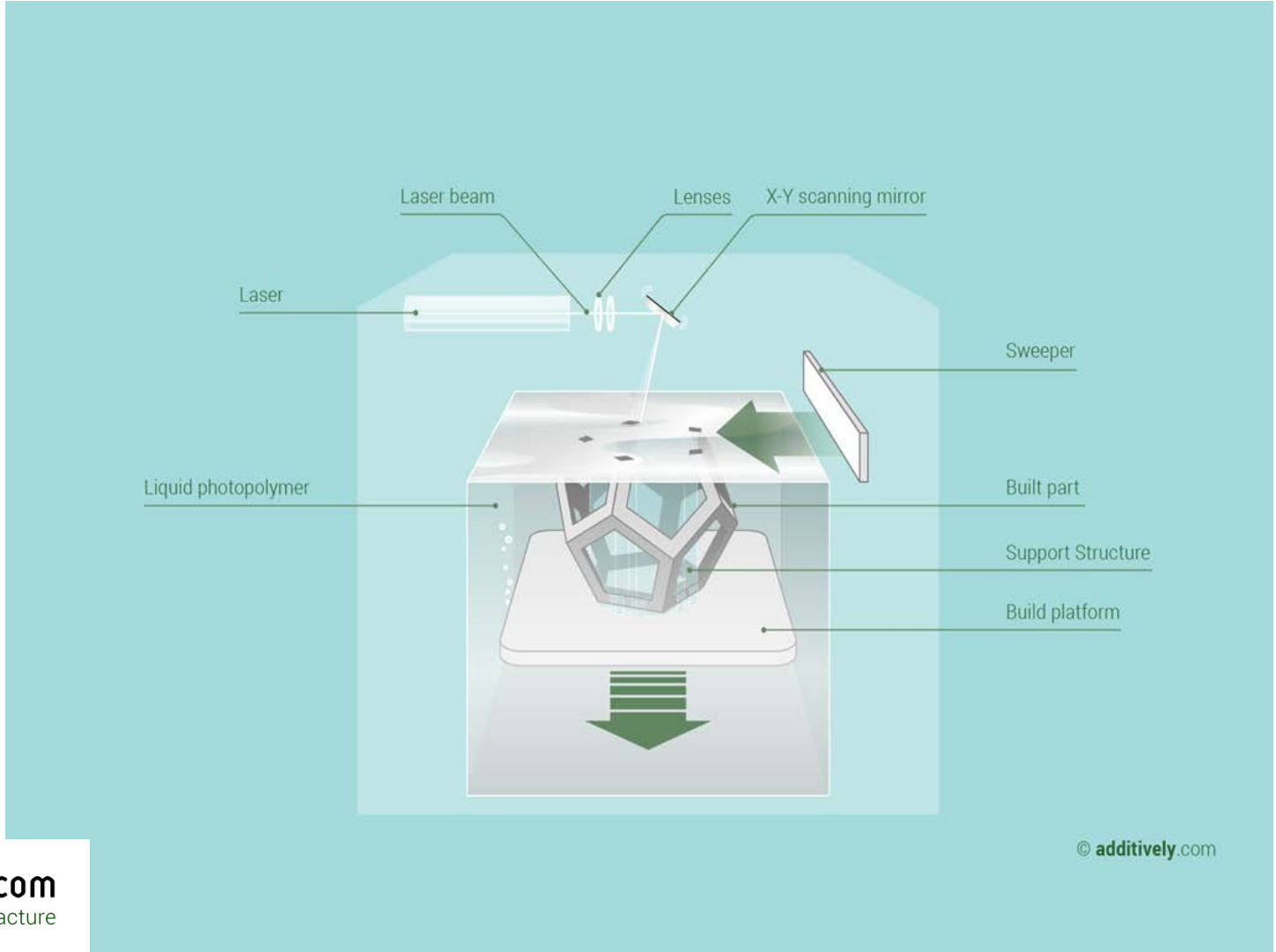
"Fabrication of objects through the deposition of a material using a print head, nozzle, or other printer technology. The term is often used synonymously with additive manufacturing"*

* The ASTM international committee F42, Wohlers Report 2014

STEREOLITHOGRAPHY

Process description:

The part is built by lowering the build platform into the vat of liquid polymer while a UV laser cures (hardens) the “printed” area.



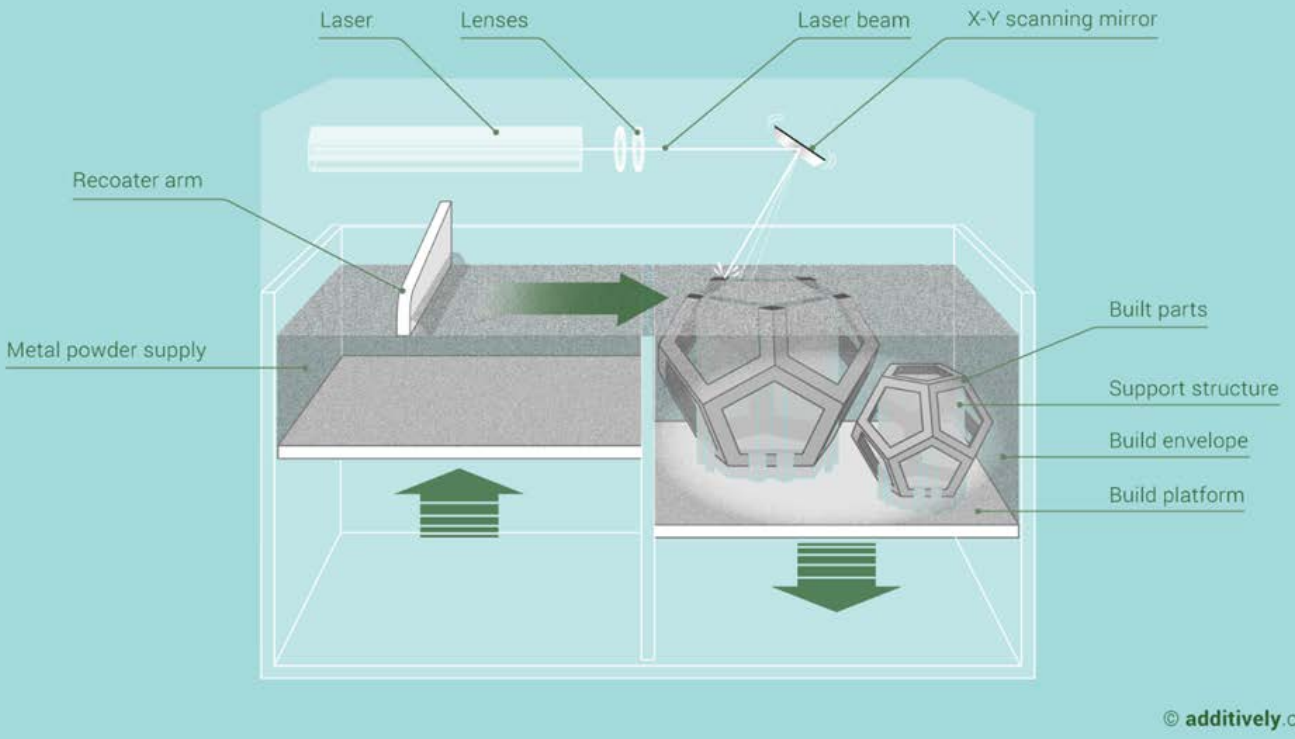
additively.com
connect & manufacture

Illustration courtesy of Additively.com

LASER MELTING (LM, SLM, SLS, DMLS)

Process description:

A laser melting machine distributes a thin layer of metal powder onto a build platform, which is which is selectively melted by a laser. Parts are built layer by layer in the powder bed. The build platform is lowered and the next layer of metal powder will be coated on top. Repeating this process where needed, the parts are built up layer by layer in the powder bed.



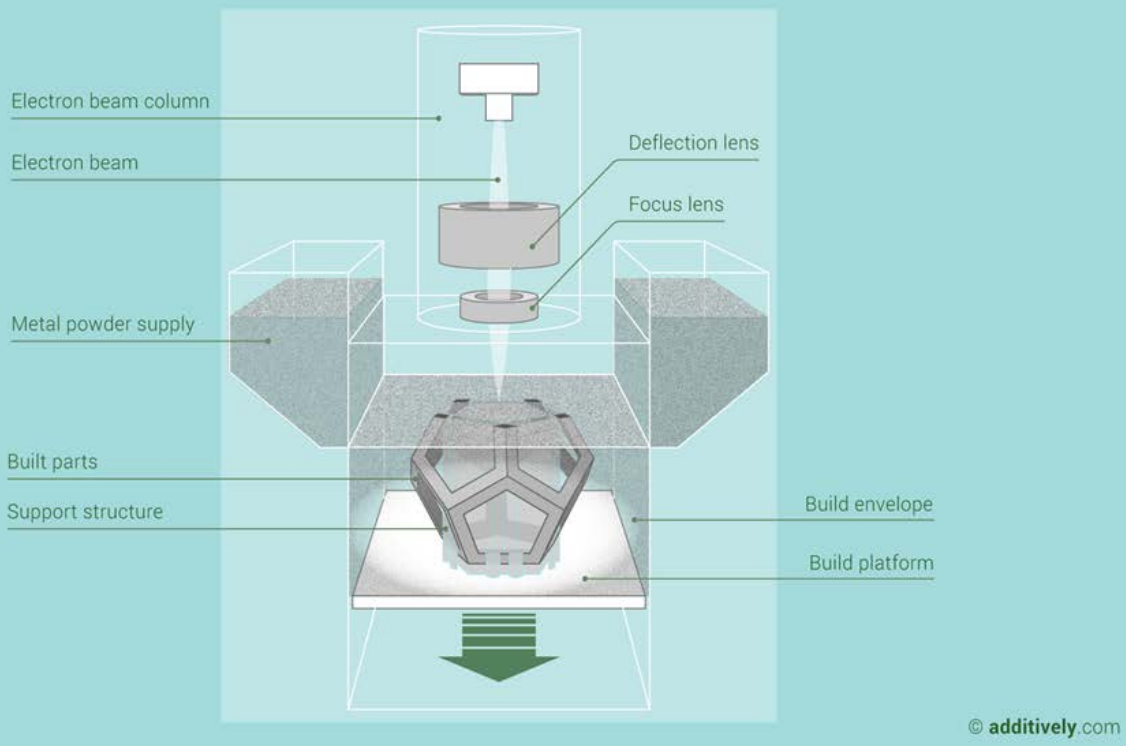
additively.com
connect & manufacture

Illustration courtesy of Additively.com

ELECTRON BEAM MELTING (EBM)

Process Description:

Similar to laser melting, but working with an electron beam instead of a laser. The machine distributes a layer of metal powder onto a build platform, which is melted by the electron beam. The build platform is then lowered and the next layer of metal powder will be coated on top. Parts are built under vacuum.



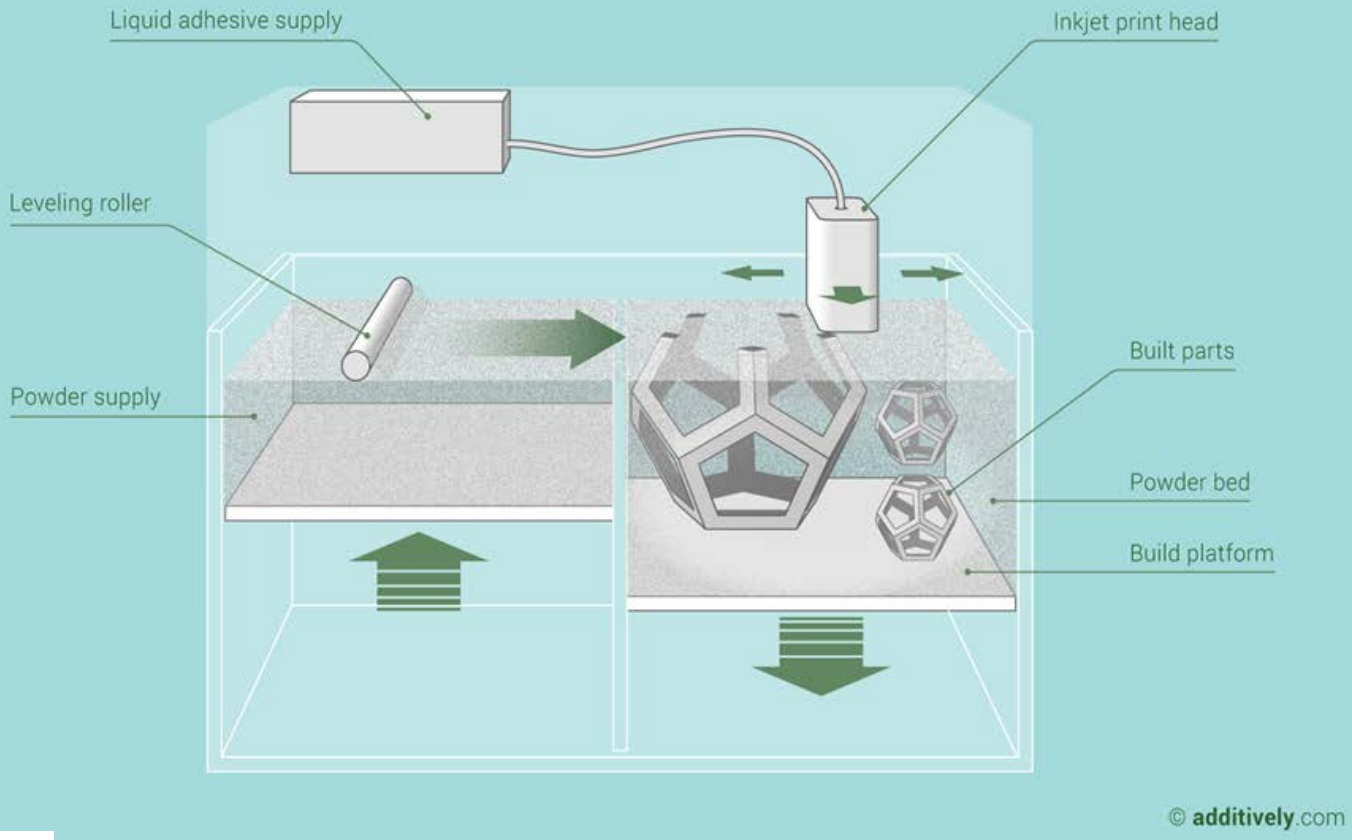
additively.com
connect & manufacture

Illustration courtesy of Additively.com

ELECTRON BINDER JETTING (BJ)

Process description:

Inkjet print heads apply a liquid bonding agent onto thin layers of powder. By gluing the particles together, the part is built up layer by layer.



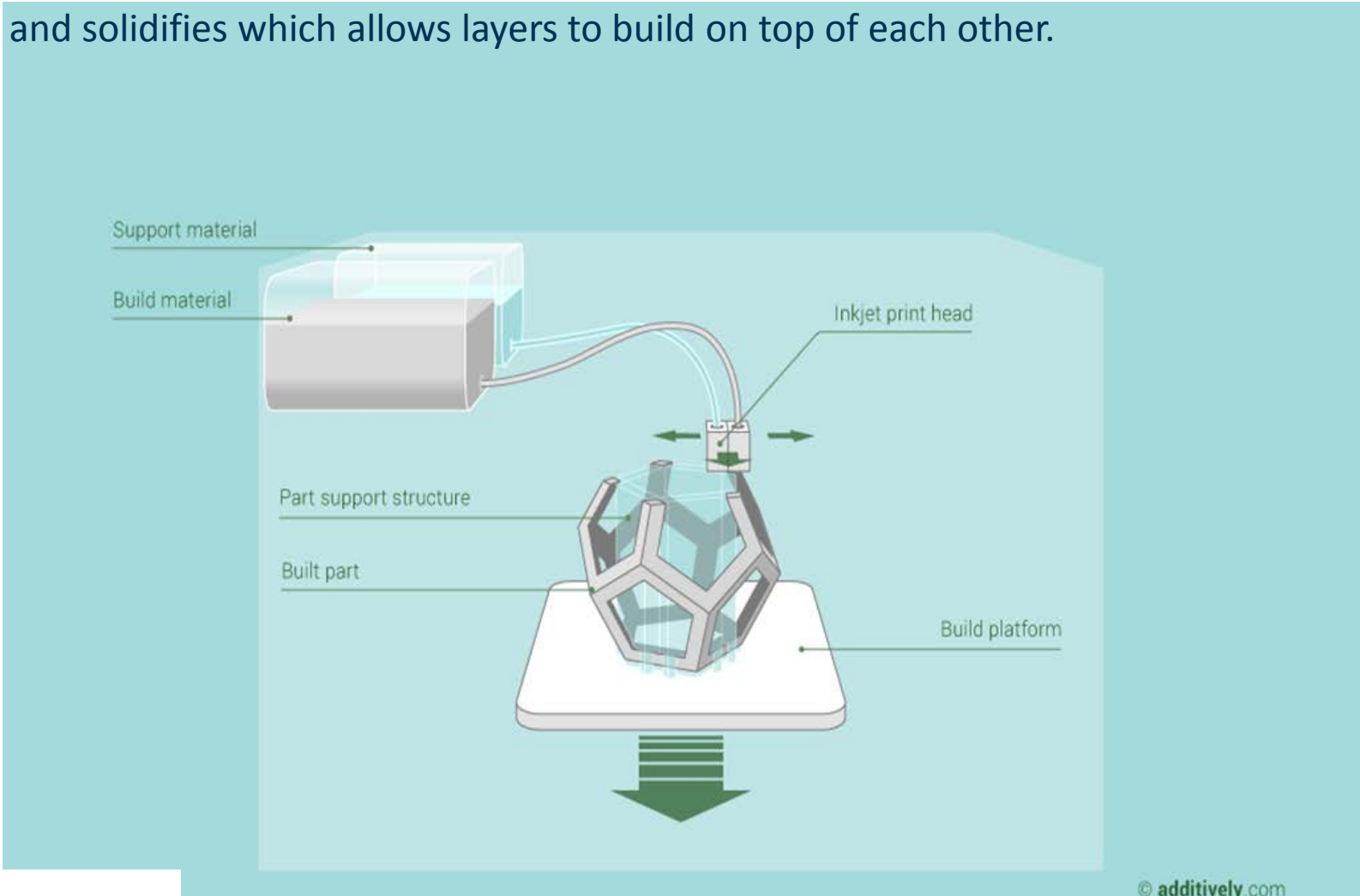
additively.com
connect & manufacture

Illustration courtesy of Additively.com

MATERIAL JETTING (MJ, DOD)

Process description:

Inkjet print heads are used to jet melted wax materials onto a build platform. The material cools and solidifies which allows layers to build on top of each other.



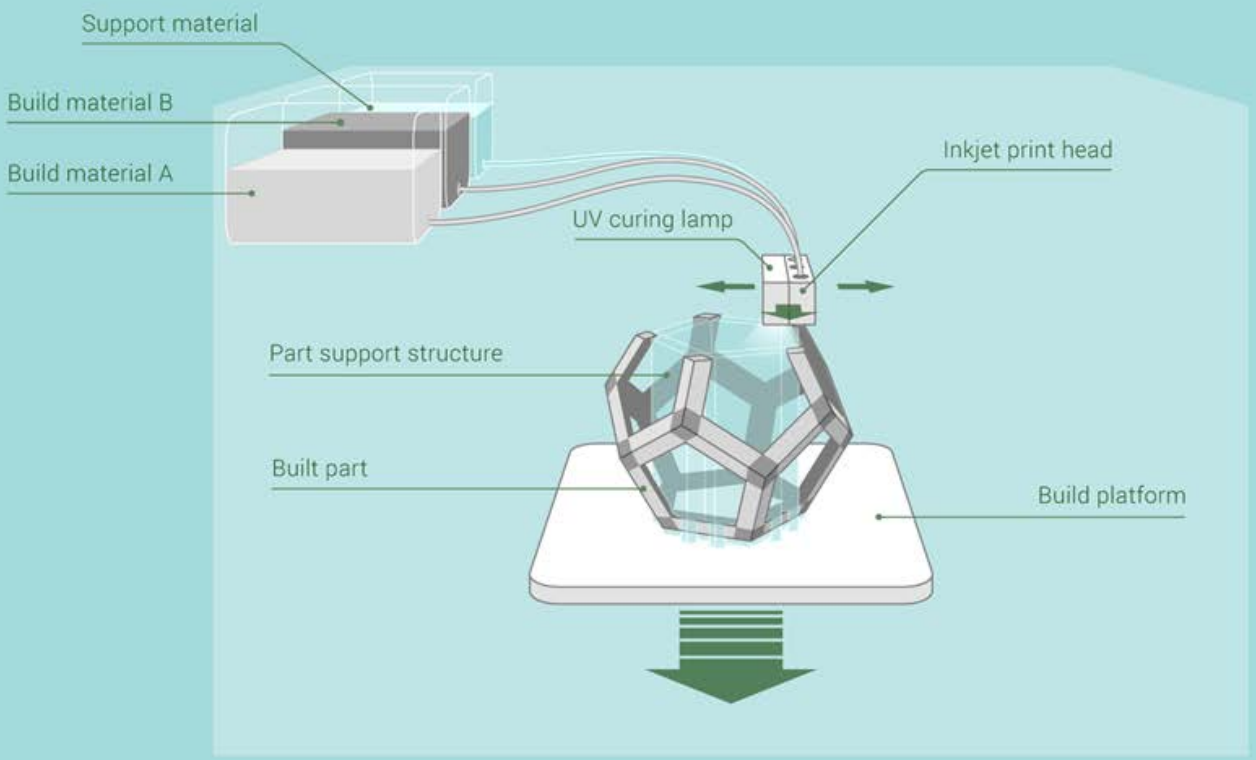
additively.com
connect & manufacture

Illustration courtesy of Additively.com

PHOTOPOLYMER JETTING (POLYJET)

Process description:

Inkjet print heads are used to jet liquid photopolymers onto a build platform. The material is immediately cured by UV lamps and solidified which allows to build layers on top of each other.



additively.com
connect & manufacture

Illustration courtesy of Additively.com

LEGAL

Thank you.

Something That Moves Something, created by Ohad Meyuhas, architect

Stratasys® | Education