

# MCAE means 3D

Ing. Daniel Adam

MCAE

[www.mcae.cz](http://www.mcae.cz)





**MakerBot**  
**INDUSTRIES**



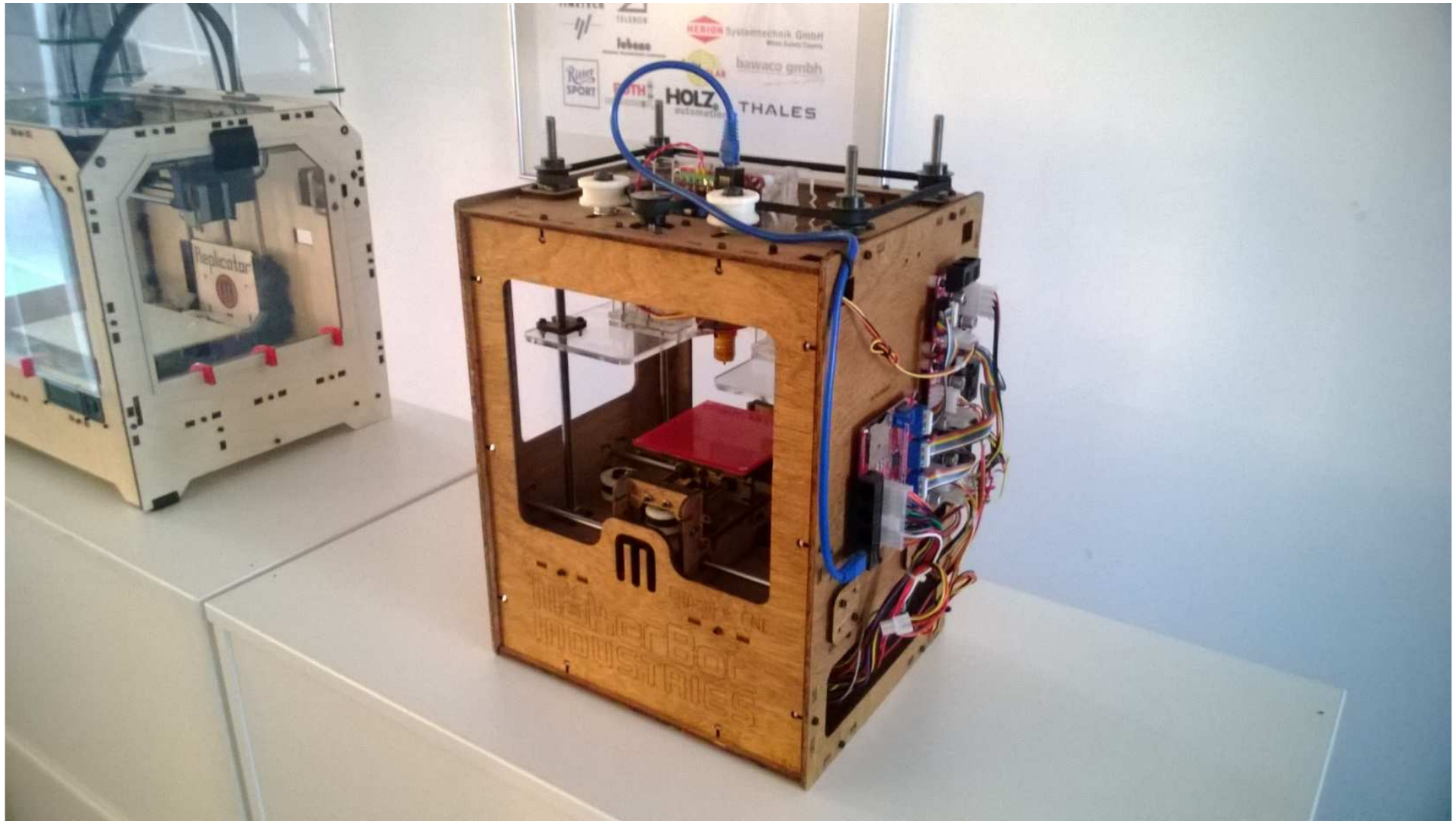
# 1989

## FDM technologie 3D tisku



# 2009

## MakerBot



**44 000+**

**Nejprodávanější  
3D tiskárna na  
světě**





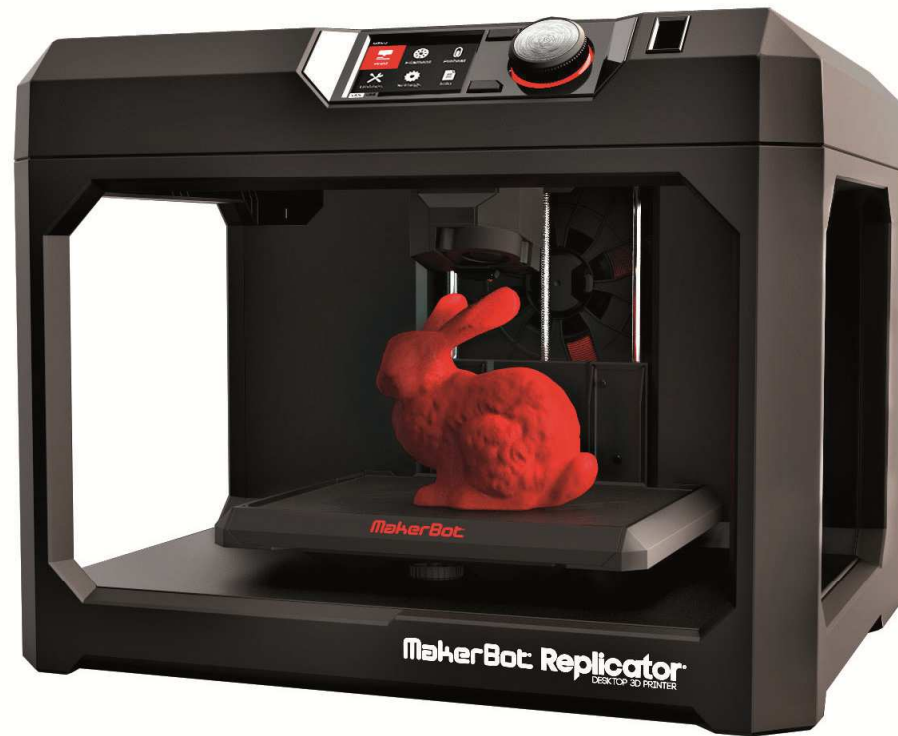


# 2013

# **2014**

**Nová generace 3D tiskáren  
MakerBot**



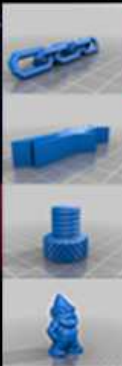








LOCAL STORAGE



Chain Links

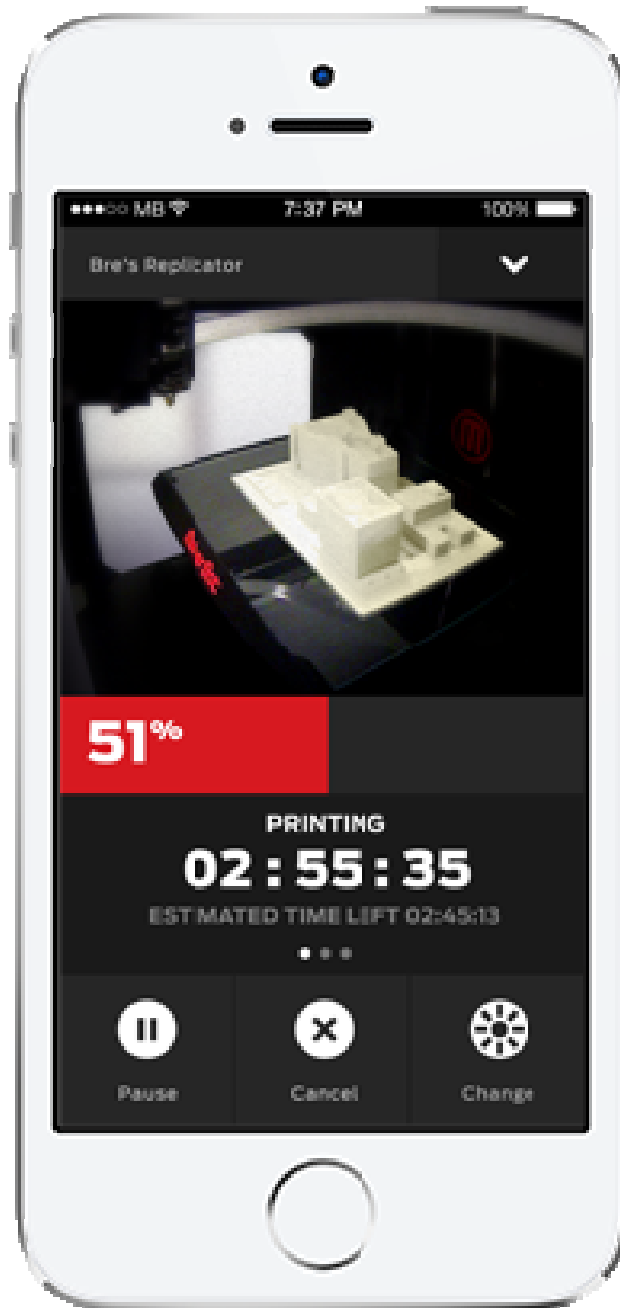
Mr. Jaws

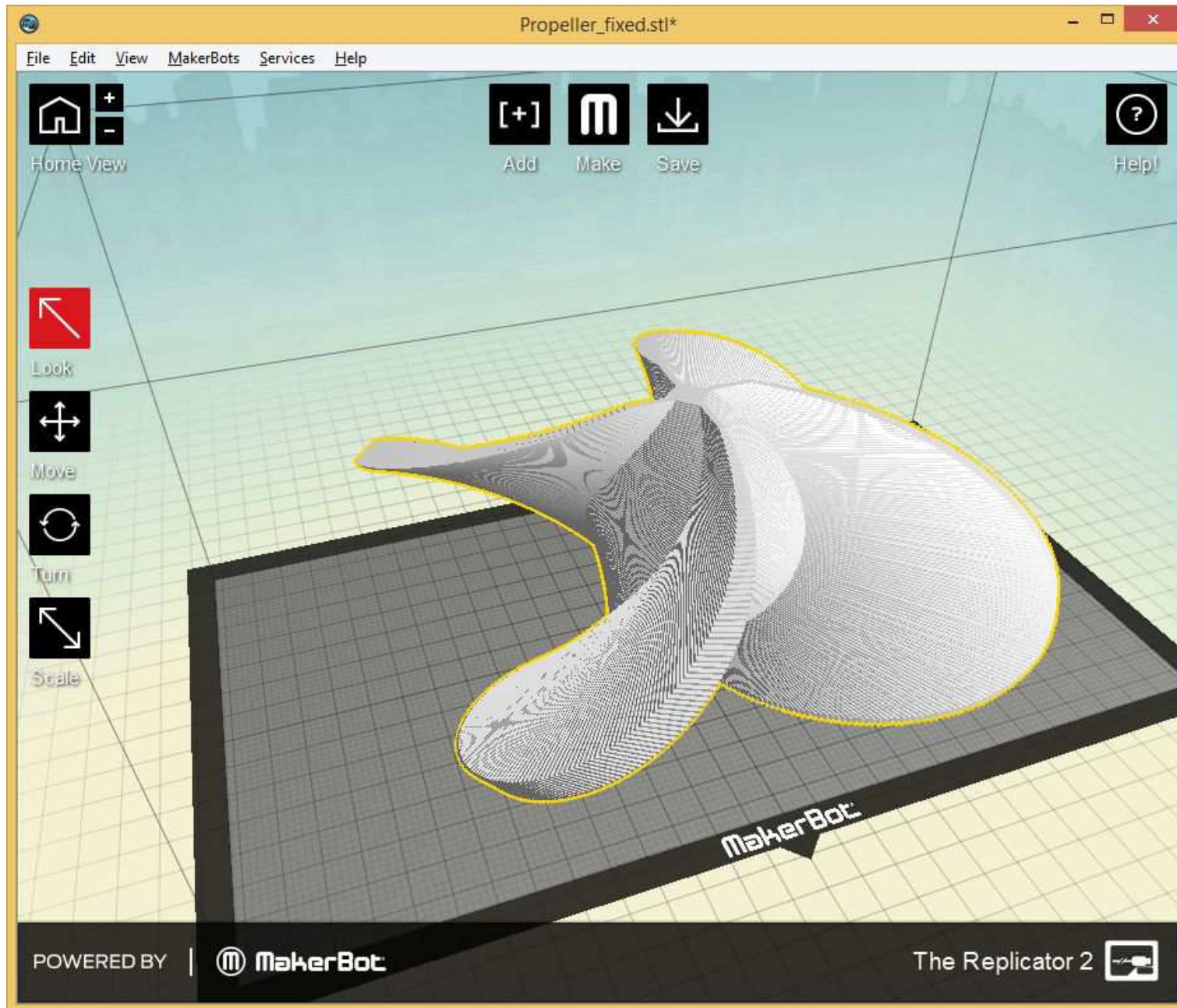
Nut and Bolt

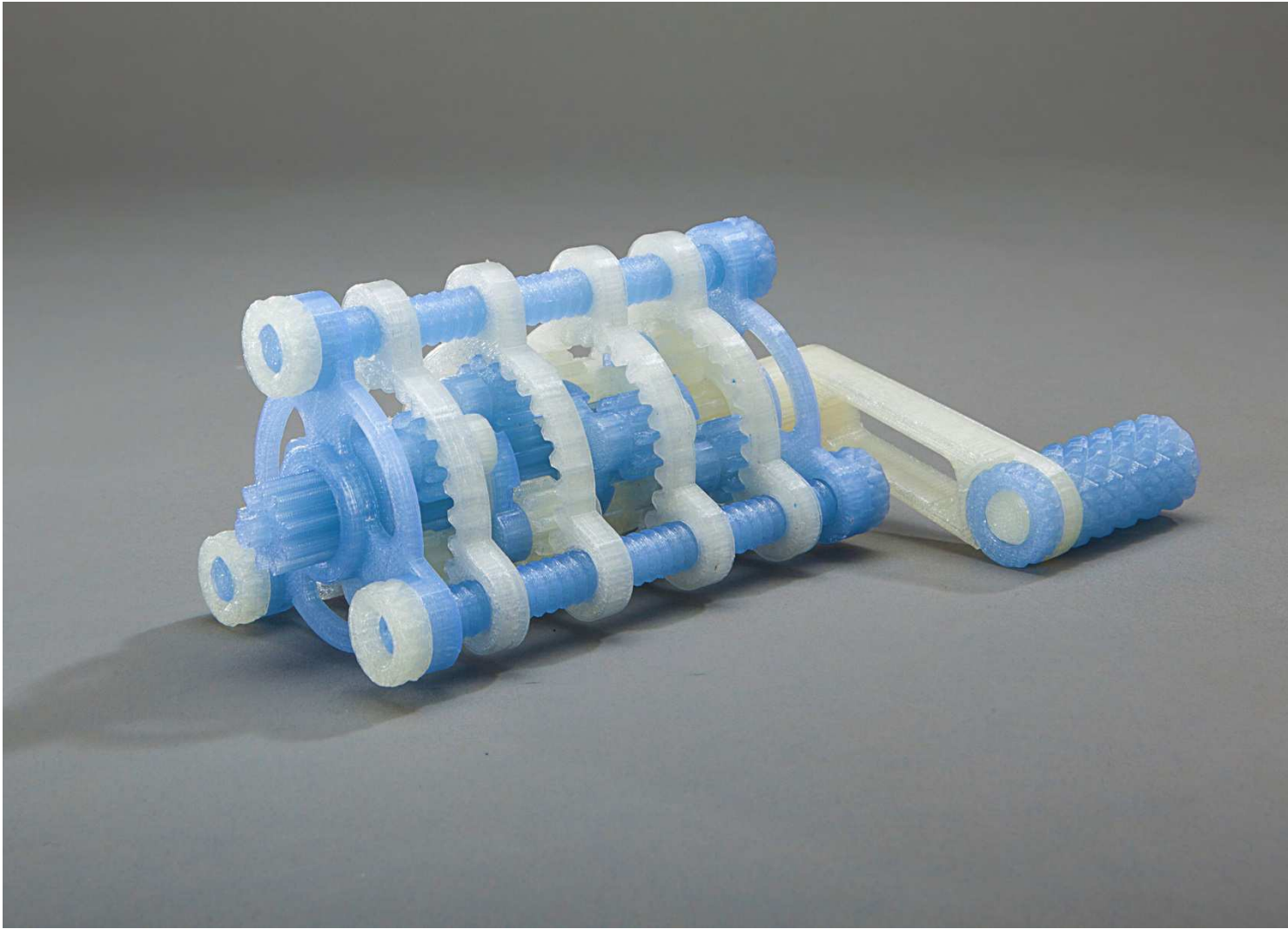
MakerBot Gnome















# Technology

Learn about the world's most advanced 3D printing technologies: Fused Deposition Modeling (FDM) for durable thermoplastic parts that withstand tough testing; and PolyJet, for precise models that look and feel like the final product.



## PolyJet Technology

Fine features and realistic textures



## FDM Technology

Real thermoplastics for functional testing



3D Printers

Materials

Applications

Industries

Resources

Customer Support

### Idea Series

Mojo

uPrint SE

uPrint SE Plus

### Design Series

#### Precision

Objet24

Objet30 Pro

Objet Eden260V

Objet Eden350V

Objet Eden500V

Objet260 Connex

Objet350 Connex

Objet500 Connex

Objet1000

#### Performance

Dimension 1200es

Dimension Elite

### Production Series

Fortus 250mc

Fortus 360mc

Fortus 400mc

Fortus 900mc

### Technology

FDM Technology

PolyJet Technology



Idea Series



Design Series



Production Series



## Materials

### Explore the widest range of materials in the 3D printing world

Stratasys offers a powerful range of additive manufacturing materials, including clear, rubberlike and biocompatible photopolymers, and tough high-performance thermoplastics. This variety lets you maximize the benefits of 3D printing throughout your product-development cycle.

From fast, affordable concept modeling to detailed, super-realistic functional prototyping, through certification testing and into agile, low-risk production, Stratasys materials help designers and engineers succeed at every stage.

[Materials](#)

#### FDM Thermoplastics

Stratasys patented Fused Deposition Modeling (FDM) Technology works with production-grade thermoplastics to build tough, durable parts that are accurate, repeatable and stable over time. 3D print your concept models, prototypes, tools and end-use parts in familiar materials like ABS, PC and high-performance ULTEM 9085.

[View all FDM thermoplastics ▶](#)

#### PolyJet Photopolymers

PolyJet photopolymers offer an astonishing level of detail and final-product realism that surpasses all other 3D printing technologies. With chameleon-like ability to simulate clear, flexible and rigid materials and engineering plastics — and even combine multiple material properties into one model — your prototypes could easily be mistaken for final products.

[View all PolyJet photopolymers ▶](#)

# FDM Thermoplastics

## 3D print durable parts in production-grade materials

FDM Technology builds parts in the same strong, stable plastics used in injection molding, CNC machining and other traditional manufacturing processes. Harness the power of 3D printing while relying on tested, established thermoplastics.

[Compare all FDM materials](#)



Materials

FDM

## Find your FDM thermoplastic

Subject 3D printed parts to tight tolerances, tough testing and harsh environments. FDM fixtures, tools and prototypes withstand constant use on the production floor and perform well in punishing applications such as HVAC prototyping and auto racing.

FDM materials offer specialized properties like electrostatic dissipation, translucence, biocompatibility, VO flammability and FST ratings, making them perfect for demanding designers and engineers in the aerospace, automotive and medical industries.



### ABSplus

Opaque standard plastic in 9 colors



### ABSi

Translucent standard plastic in 3 colors



### ABS-M30

Opaque standard plastic in 6 colors



### ABS-M30i

Biocompatible, sterilizable engineering plastic



### ABS-ESD7

Static dissipative standard plastic



### PC

Strong engineering plastic in white



### PC-ABS

High-impact engineering plastic in black



### PC-ISO

Stronger biocompatible, sterilizable engineering plastic



### PPSF/PPSU

Sterilizable, strong high-performance plastic



### ULTEM 9085

FST-rated high-performance plastic



## Auto Prototyping in ULTEM



Watch Minimizer test its tough-as-nails heavy truck fenders in black ULTEM 9085.

[See the video](#)



## PolyJet Materials

### 3D print precision prototypes in over 100 materials

PolyJet technology 3D prints in the widest variety of materials, so you can create realistic prototypes that closely resemble finished products.

Models are precisely printed in layers as fine as 16 microns for smooth surfaces and complex geometries. Material properties range from rubber to rigid, transparent to opaque, and standard to biocompatible.

[Compare all PolyJet materials](#)



[Home](#) [Materials](#) [PolyJet](#)

### Find Your PolyJet Material

PolyJet photopolymers combine a wide variety of material properties with thin layers, so you can create true product realism in your prototypes. Objet 3D Printers are the only additive manufacturing systems in the world that give you multi-material flexibility. You can combine materials within the same 3D printed model or in the same print job, enabling a wealth of applications such as over-molding, grayscale coloring, simultaneous prints in different materials and more. You can also combine two materials during printing to create composite Digital Materials with very specific properties.

With more than 100 material combinations to choose from, you can simulate precise characteristics so your prototypes match the look, feel and function of the most complex end products.



#### PolyJet Digital Materials



#### Digital ABS

Simulate high-strength and temperature-resistant plastics



#### High-temperature

Combine thermal functionality with dimensional stability



#### Transparent

3D print clear models and prototypes



#### Rigid Opaque

3D print in white, gray, blue and black



#### Polypropylene-like

3D print polypropylene-like models and prototypes



#### Rubber-like

3D print flexible materials with a variety of properties



#### Bio-compatible

3D print for medical and dental applications



#### Dental Material

3D print for dental and orthodontic applications



### Related Information

[Download PolyJet Materials Brochure](#)



[Download PolyJet Systems and Materials Matrix](#)



[What is PolyJet Technology?](#)



### Digital Materials Video

See 3D printing in action with over 100 materials

[Watch the video now](#)



## Industries

### Learn why 3D printing is useful everywhere

Stratasys technology is challenging the status quo in manufacturing, health care, education — even outer space.

Learn how PolyJet 3D printing and FDM Technology can help you think faster, innovate better and broaden horizons.

[Industries](#)

### Find your industry



#### Aerospace

Wind tunnel models to end-use parts



#### Architecture

Beautiful and durable models



#### Automotive

Tough parts, precision prototyping



#### Commercial Products



#### Consumer Products



#### Defense

Quick custom tooling, low-volume parts



#### Digital Dentistry

Digital dentistry for happier patients



#### Education

Hands-on learning, custom research tools



#### Medical

Surgical guides, prototypes, custom devices



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