



Fakulta elektrotechniky  
a informatiky

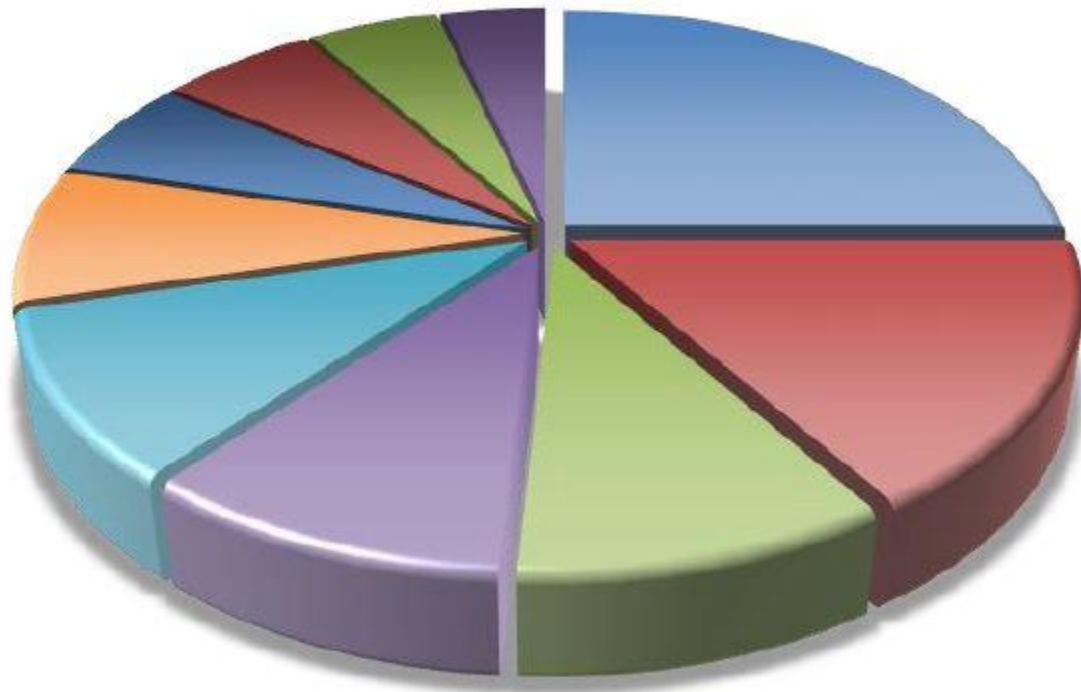
# TECHNOLÓGIE 3D TLAČE

## aplikácie

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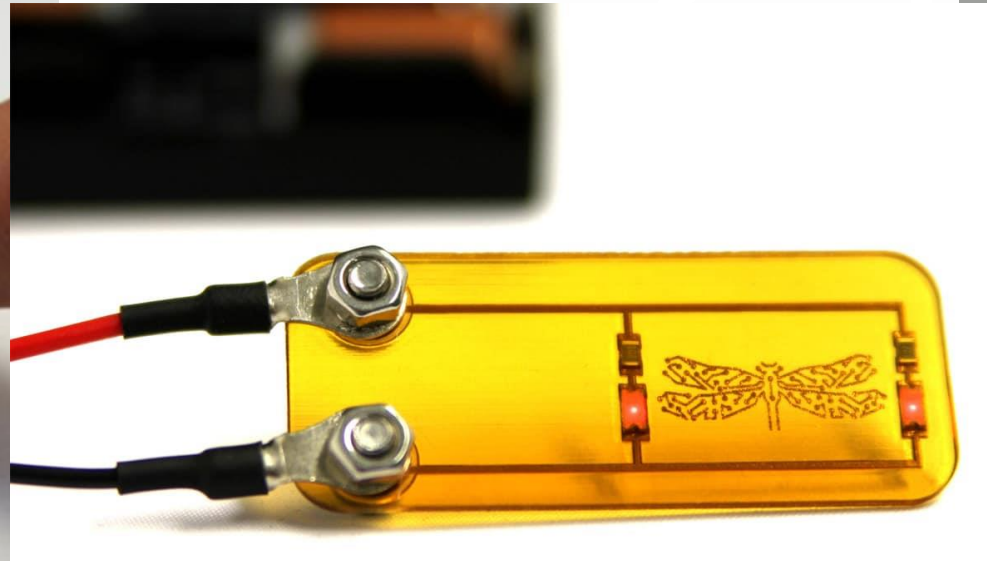
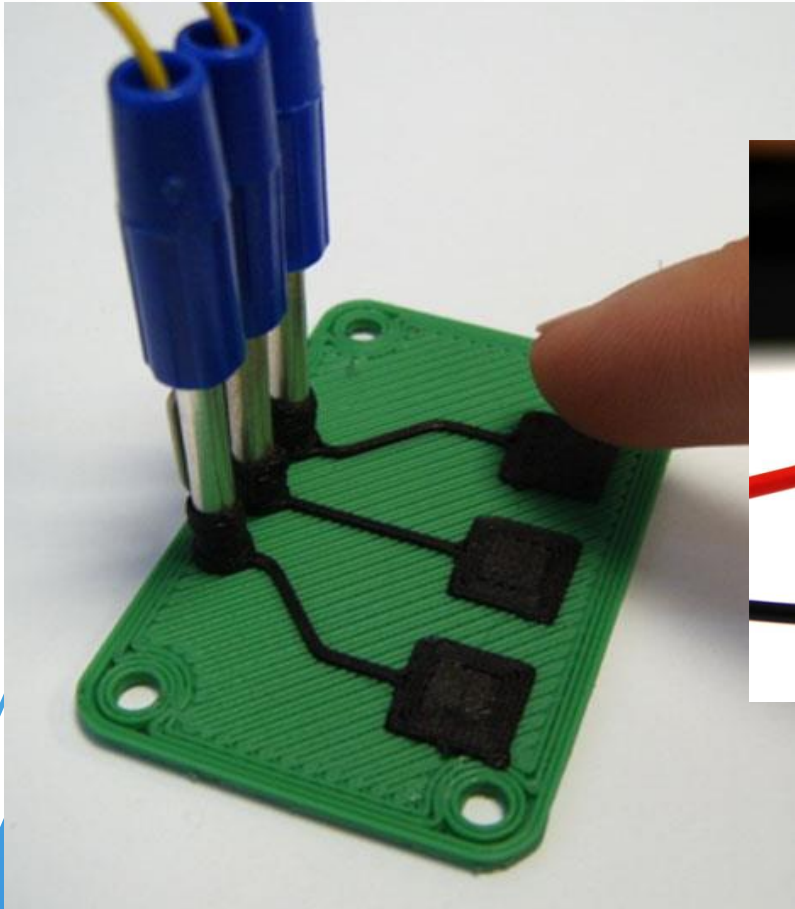
# OBLASTI APLIKÁCIE 3D TLAČE



- Engineering and Design
- Consumer Products
- Manufacturing
- Education
- Aerospace
- Medical
- Movies / Theater
- Architecture
- Fashion
- Other...

# 3D TLAČ V ELEKTRONIKE

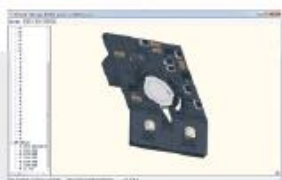
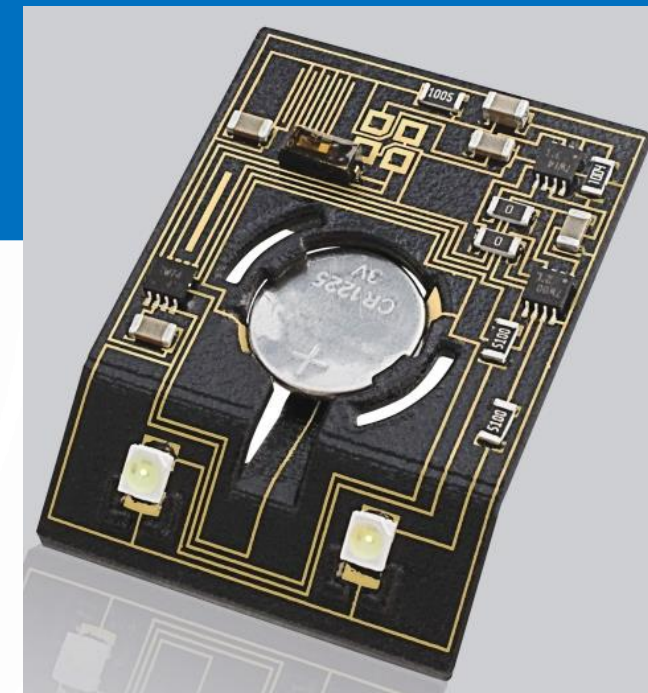
Vodivé filamenty na báze grafénu a častíc striebra



# 3D TLAČ V ELEKTRONIKE

Výroba „tvarovanej elektroniky“

Kombinácia 3D tlače a tlačenej elektroniky



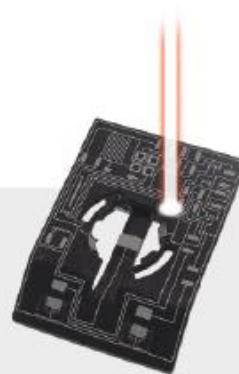
Layout of 3D-MID with TARGET 3001!



Creating the three-dimensional part



Coating with metal-containing substance



**Laser activation**  
Laser produces metallic cores as nuclei for metallization



**Additive metallization**  
Additive conductor paths build-up using Cu / Ni / Au



**Assembly**



# AUTOMOTIVE

## CURRENT

### Fluid handling

**Applications:** Pumps, valves

**AM technology:** Selective laser melting, electron beam melting

**Materials:** Aluminum alloys

### Manufacturing process

**Applications:** Prototyping, customized tooling, investment casting

**AM technology:** Fused deposition modeling, inkjet, selective laser sintering, selective laser melting

**Materials:** Polymers, wax, hot work steels

### Exhaust/emissions

**Applications:** Cooling vents

**AM technology:** Selective laser melting

**Materials:** Aluminum alloys

### Exterior/exterior trim

**Applications:** Bumpers, wind breakers

**AM technology:** Selective laser sintering

**Materials:** Polymers

### Powertrain, drivetrain

**Applications:** Engine components

**AM technology:** Selective laser melting, electron beam melting

**Materials:** Aluminum, titanium alloys

### Frame, body, doors

**Applications:** Body panels

**AM technology:** Selective laser melting

**Materials:** Aluminum alloys

### OEM components

**Applications:** Body-in-white

**AM technology:** Selective laser melting, electron beam melting

**Materials:** Aluminum, steel alloys

### Electronics

**Applications:** Embedded components such as sensors, single-part control panels

**AM technology:** Selective laser sintering

**Materials:** Polymers

### Wheels, tires, & suspension

**Applications:** Hubcaps, tires, suspension springs

**AM technology:** Selective laser sintering, inkjet, selective laser melting

**Materials:** Polymers, aluminum alloys

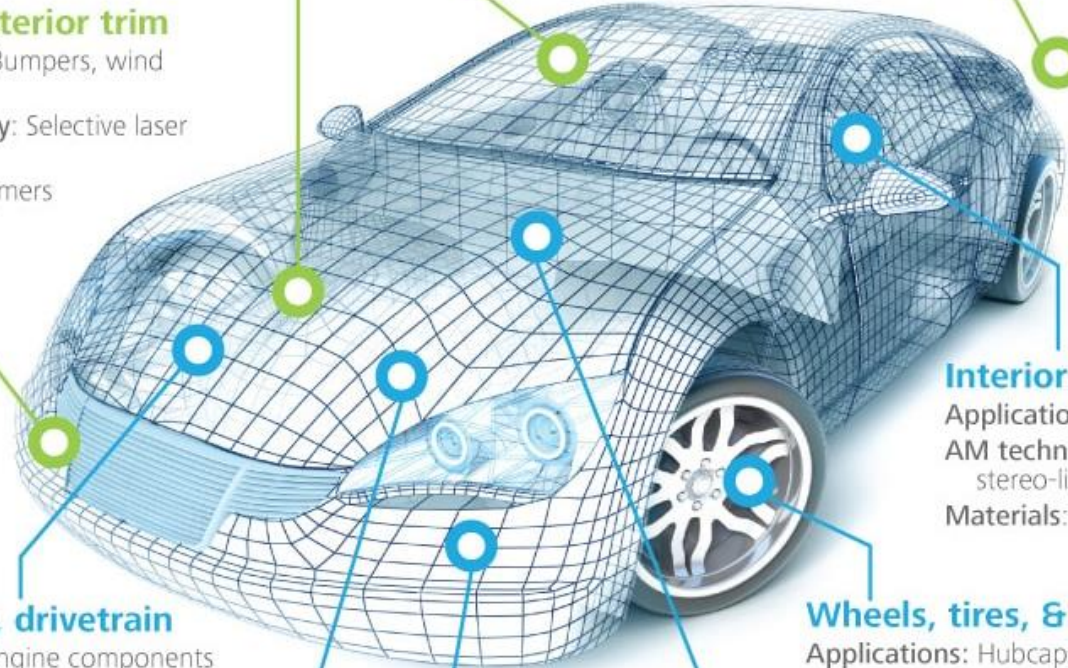
### Interior & seating

**Applications:** Dashboards, seat frames

**AM technology:** Selective laser sintering, stereo-lithography

**Materials:** Polymers

## FUTURE



# APLIKÁCIE 3D TLAČE V MEDICÍNE

## Modely pre edukatívne účely

Implantáty

Rehabilitačné pomôcky

Náhradné tkanivo

Medicínske náradie



# APLIKÁCIE 3D TLAČE V MEDICÍNE

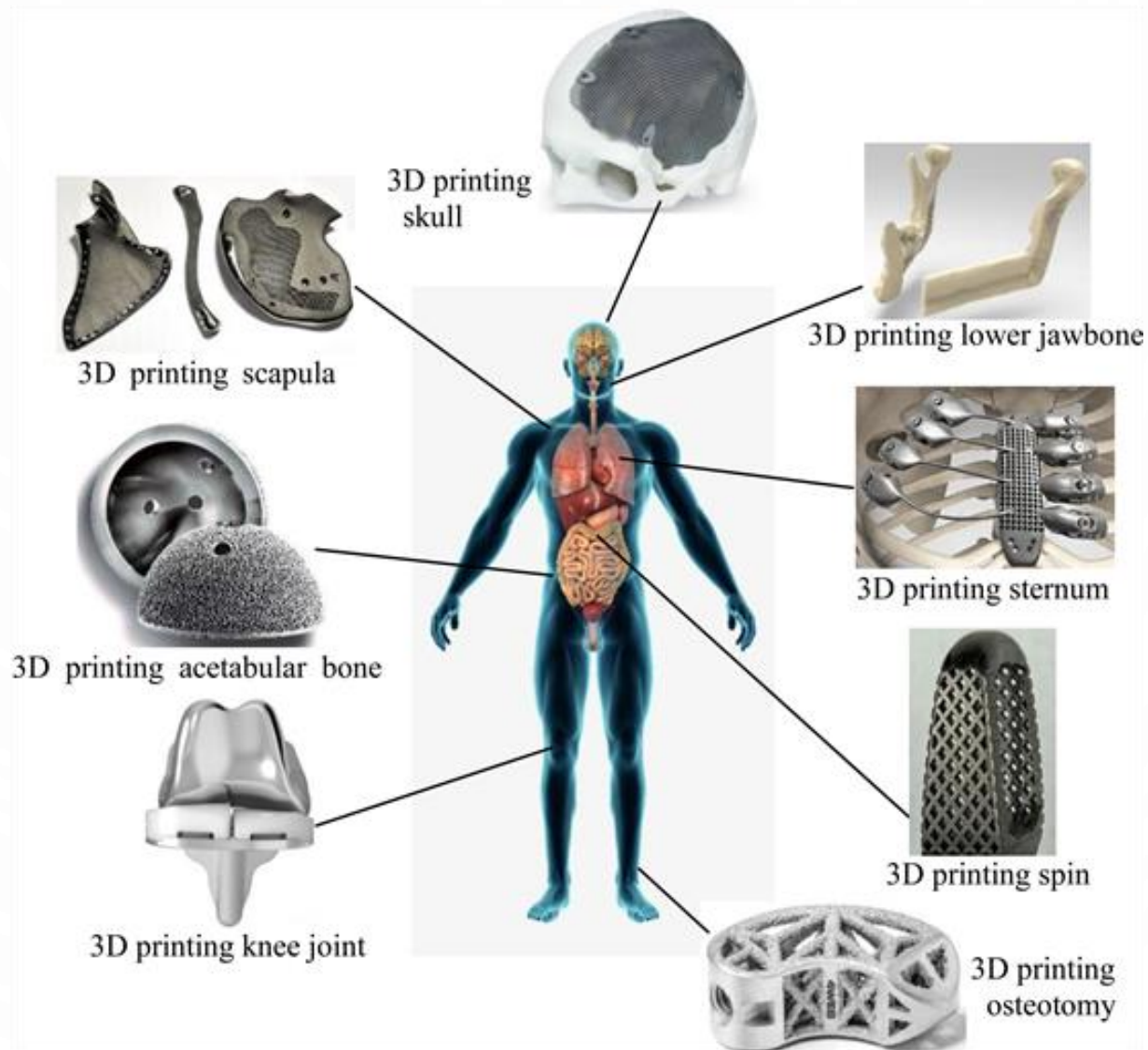
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# 3D TLAČ V STAVEBNÍCTVE





# 3D TLAČ V GASTRONÓMIÍ



# BUDÚCNOŠŤ 3D TLAČE

<https://www.youtube.com/watch?v=NRUbaAPbmVA>

## □ FUTURE APPLICATIONS:

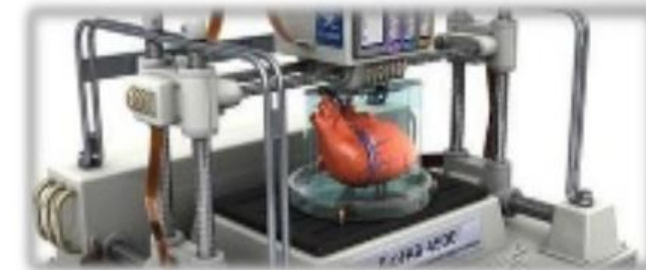
### FOOD

NASA Scientists are developing 3D-printed food as answer to food shortage!



### Bio-Printing:

Organs and living tissues of organisms have been printed through this technology!



## 3D Printing



### Manufacturing:

It has been used to manufacture different parts of machines and robots!



### Prototyping:

It has been used to make 3D models by the researchers and business industries

Ďakujem za pozornosť.

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