Booth
323

Dror Danai, CBO

Ceramic AM in service of the Automotive Industry

Ceramics Expo, 2022

XJET

XJet at a glance

World's leading systems for high definition Ceramics and Metal Additive Manufacturing

Started
2014

100
Employees

80
Patents

Unmatched technology utilizing inkjet &
Jetting 120 million drops per second

$180M
Invested

leading
customers

World renowned leading corporate customers

#1
Quality

- Post process & overall productivity (x10 times faster)
- Accuracy & Fine details (x5 times finest details)
- Complex geometry
- Material density & part properties (same as traditional)

XJET

Technical ceramics are unique and highly efficient materials

Heat resistance

Extreme hardness

Chemical resistant

Electrical insulation

Pressure resistance

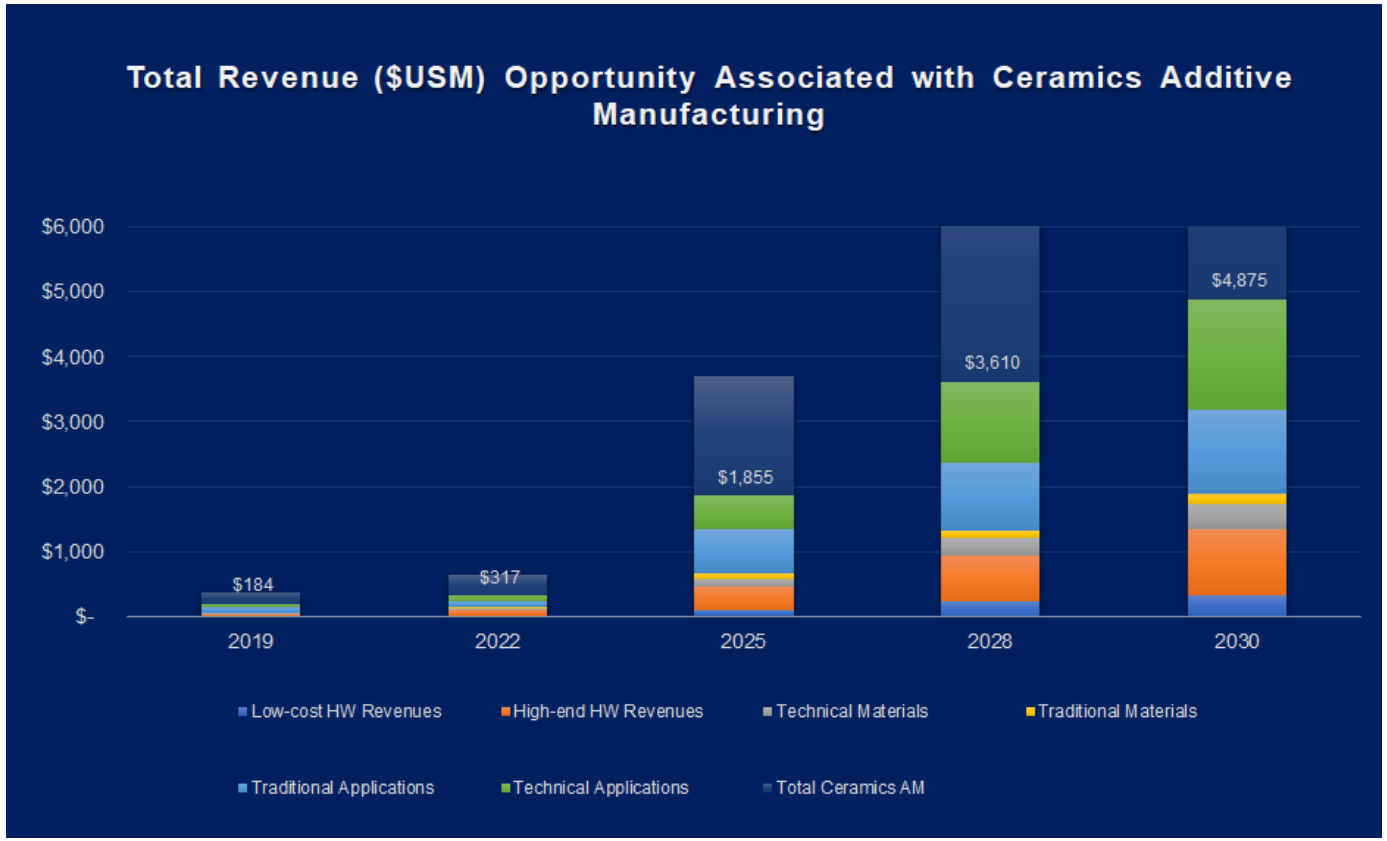
Wear resistance

And more …

- ✓ No magnetic interference
- ✓ Excellent & consistent dielectric properties
- ✓ Excellent acoustic attributes

Why ADAPT additive manufacturing?

- Growing market:
  - by 2030 4.8B$
  - CAGR of 41%!
- Operational advantages
  - Economical viable solution for short runs
  - Time to market advantages – re-shoring manufacturing; on-demand manufacturing
  - Sustainability advantages – low waste, reduces shipments
- Make the impossible possible:
  - Complex geometries
  - New opportunities



Source: SmarTech Analysis

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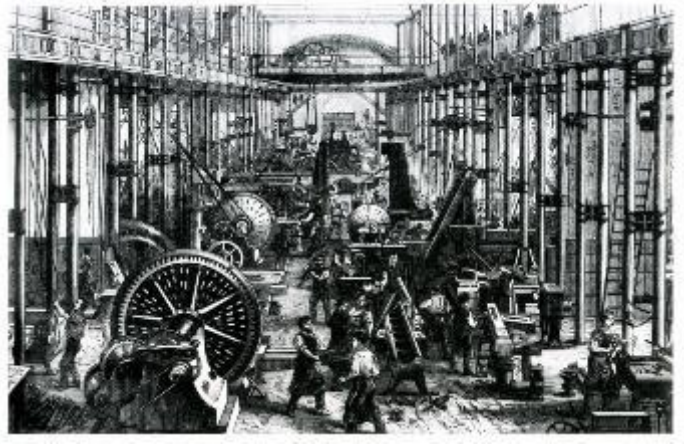
Cost that becomes negligible changes the world

The industrial revolution
~1800



Cost of **Power**
became negligible

Trains, cars, ships, mass production lines: drive modern consumption, urbanization, woman labor, family structure change, democratization, and more.

The second revolution
~1850

Cost of **Communication**
became negligible

Telegraph, radio, telephone, electricity, vacuum tube: drive colonialization and globalization, literacy and education, modernism, secularization and more.

The third revolution
~1960

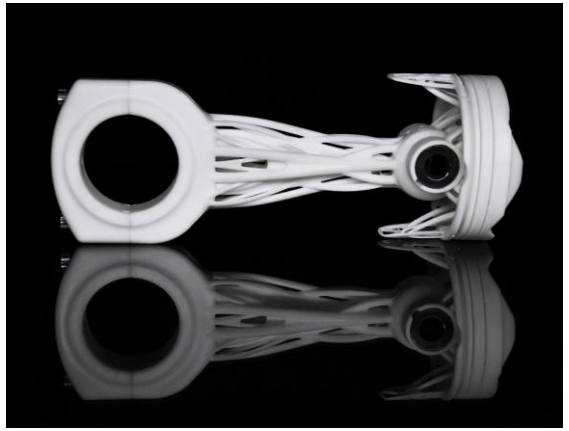
Cost of **Calculation**
became negligible

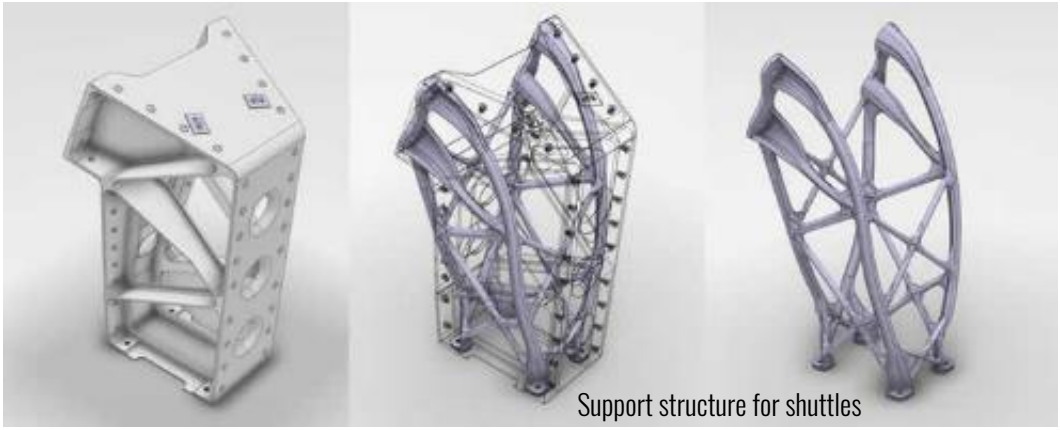
Transistors, microchips, computers: drive banking and finance industries, warfare, engineering, science, space travel, communication, and more.

XJET Proprietary & Confidential

XJET

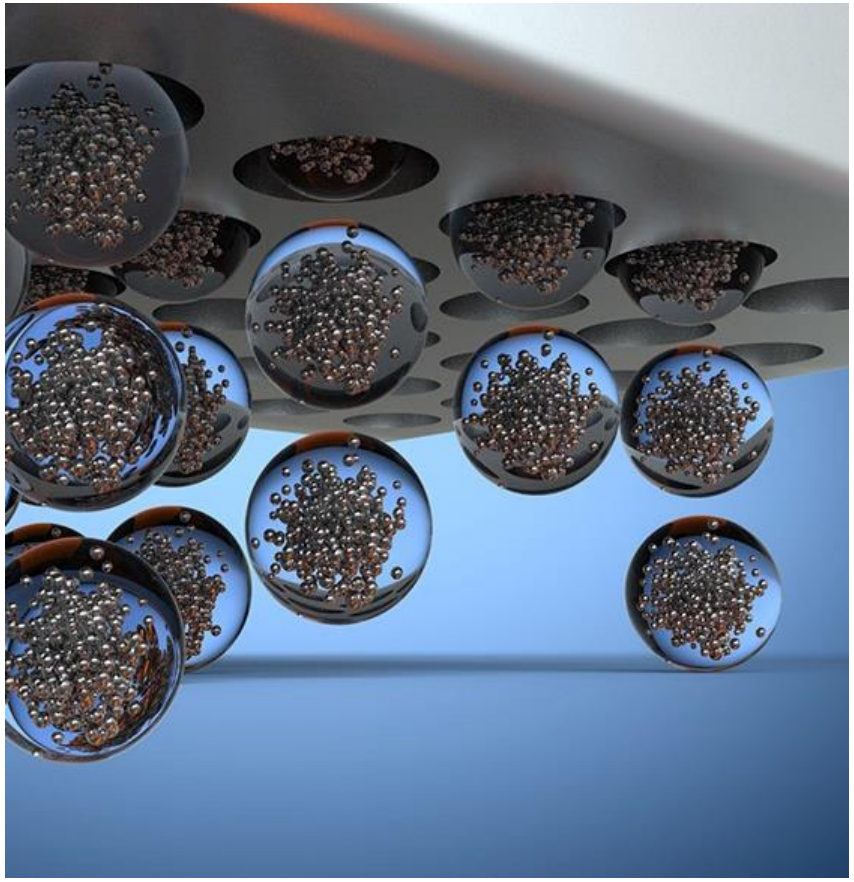
3D printing -> cost of complexity



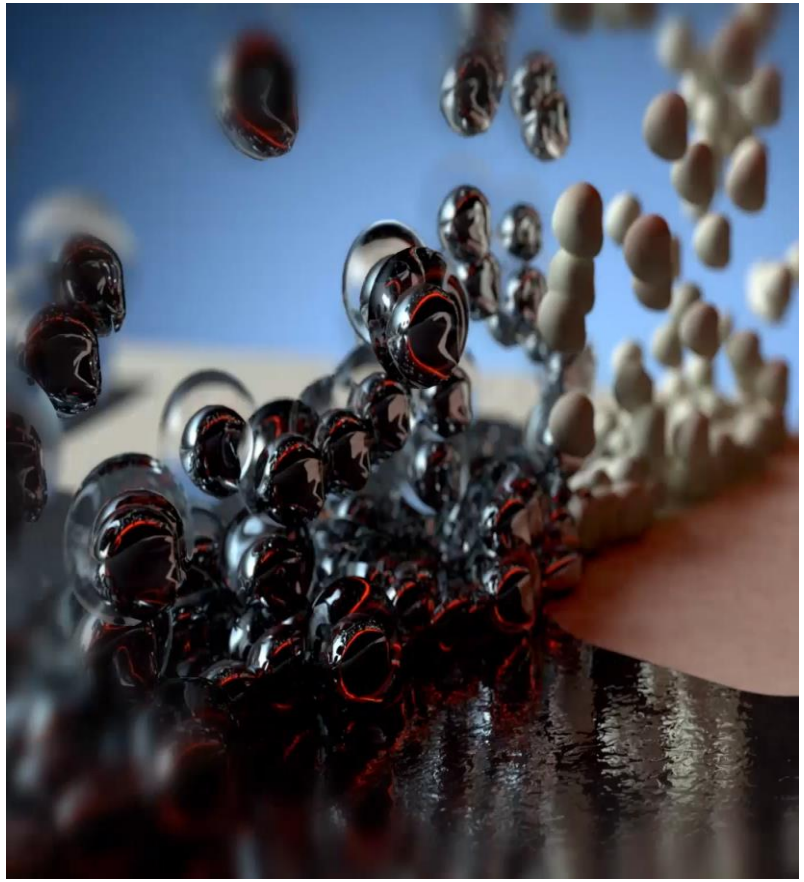


- Zero cost of complexity
- No design constraints: curves, cavities, internal structures etc.
- DfAM & computed design -> saving materials, weight to strength optimizations, high precision etc.

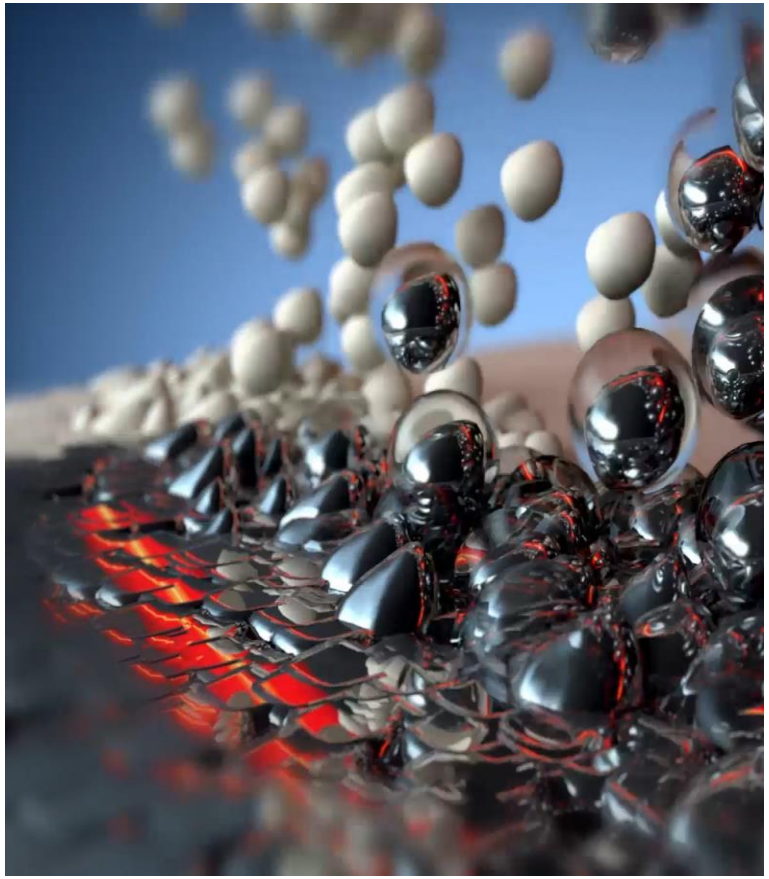
NanoParticle Jetting technology - printing process



Droplets jetted

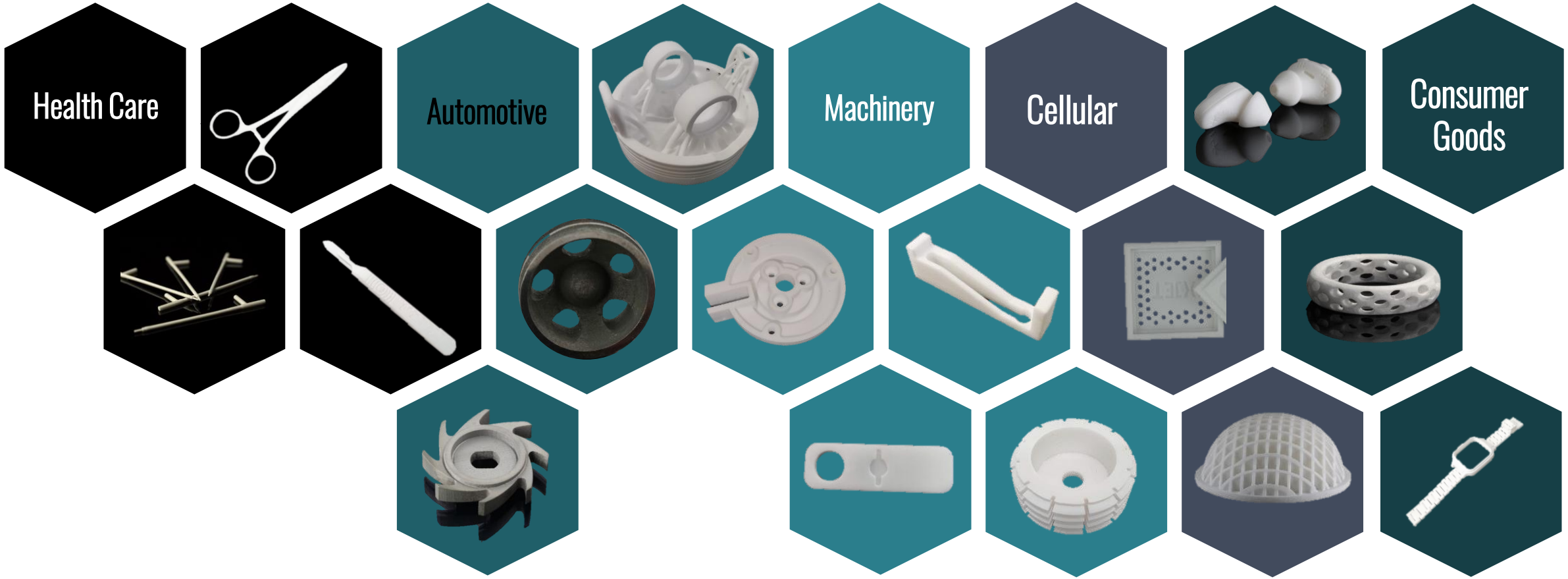


Droplets touch hot tray



Liquid evaporates

Plethora of applications & industries



Engine piston for the Chaos ‘ultra-car’

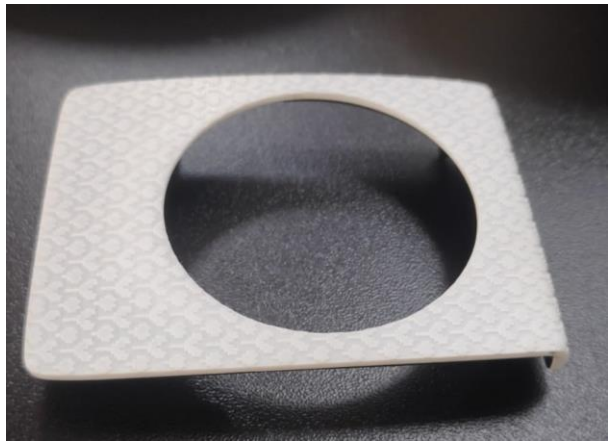
- Complex geometry & features
- Anadiaplasi design – special design for AM method
- Alumina light weight coupled with heat & pressure resistance
- Can’t be done today any other way

“XJet systems are uniquely capable of producing this part in ceramic, and there’s absolutely no room for error in this project.”

Decorative Elements

- Personalization
- Unique high end look
- Details & excellent surface finish

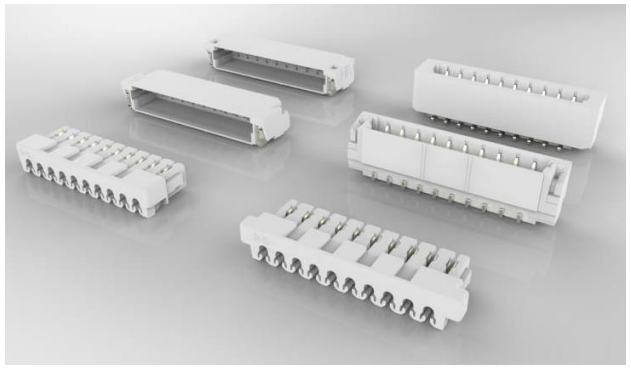
Personalized gear handle

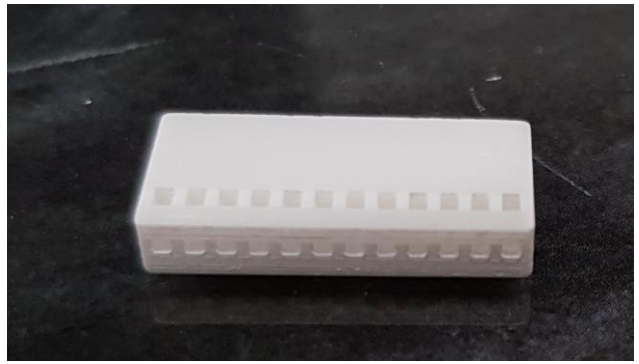


Clock frame for dashboard (by Rolls Royce)

Source: https://www.cnet.com/roadshow/news/rolls-royce-phantom-platino-bespoke-bamboo-fabric-design/

Electric Connectors





- Internal Complex geometry can't be made with traditional technologies
- Saving costly molds and assembly
- Perfect for short runs

Thank you