

Electrically Customizable 3D Printer Filament

Electrically tunable 3D printer filament maintains consistent conductivity for smart devices and printed sensors.

Researchers at Purdue University have developed a method for producing 3D printer filament with customizable electrical conductivity. This is the first technology for producing conductive filaments that allows for the controllable production of electrically tunable filaments with consistent conductivity. The ability to maintain consistent conductivity is critical to this area, as any variation can lead to inaccuracy in the final product's sensing performance. This technology can be integrated into all Fused Deposition Modeling (FDM) 3D printing processes. Potential applications for this technology include smart devices as well as 3D printed sensors or actuators.

Advantages

- Consistent conductivity compared to previous methods
- Customizable material conductivity
- Integrates into current processes

Applications

- Smart products
- 3D Printed Sensors

Technology Validation:

This technology has been validated through small-batch manufacturing and in-house testing.

TRL: 6

Intellectual Property:

Technology ID

2022-NEWE-69740

Category

Chemicals & Advanced
Materials/Polymer Science &
Smart Materials
Chemicals & Advanced
Materials/Materials Processing &
Manufacturing Technologies

Further information

Parag Vasekar

psvasekar@prf.org

View online page



Provisional-Gov. Funding, 2022-05-06, United States

Utility-Gov. Funding, 2023-05-08, United States

Keywords: 3D Printing, Actuators, Additive Manufacturing, Conductive Filament, Electrical Engineering, Electrically Conductive, Sensors, smart devices, Smart Sensors