NIINO LAB.

[New Manufacturing Technology for New Device]

Design-Led X Platform
Department of Mechanical and Biofunctional Systems
Social Cooperation Program, Base Technology for Future Robots
Additive Manufacturing Science

Department of Precision Engineering

http://lams.iis.u-tokyo.ac.jp

3D Printing and MID (Molded Interconnect Device)

This lab aims to create novel mechanical and electrical devices with novel manufacturing technology. To do this, we emphasize on functional 3D geometrical shape made of combined material. In detail, we focus on Additive Manufacturing (AM) and Molded Interconnect Device (MID) and their application.

Our Projects

Additive Manufacturing (AM)

**New AM Process**
- Process Development in Laser Sintering Fabrication
- Laser Sintering Process for High Performance Polymer

**AM Application**
- Laser Sintering Fabrication realizing High Porosity and Intensity
- Laser Sintering Fabrication of Tissue Engineering Scaffolds
- Application of Photonic Device using Laser Sintering Fabrication

New materials

AM MID Integration
- Additive Manufacturing of Metal-Plastic Complex Body

Molded Interconnect Device (MID)

Fabrication process for MIDs
- MID fabrication process using sacrificial body

**MID Application on Mechatronic Devices**
- Circuit pattern transfer to inner surface using sacrificial body

Fabrication of Amorphous Structures (Photonic Fractal)

Ceramics

Plastics

Metal

New materials

Sacrificial body + Soft etching

MID Application on Static Electric Motor.

Injection Molded Functional Fluid Channel

Electrostatic Motor using MID technology

MID with Micro Fluid Channel