

Robot assisted 3D printing

Prototyping of large-scale 3D ceramic/clay parts

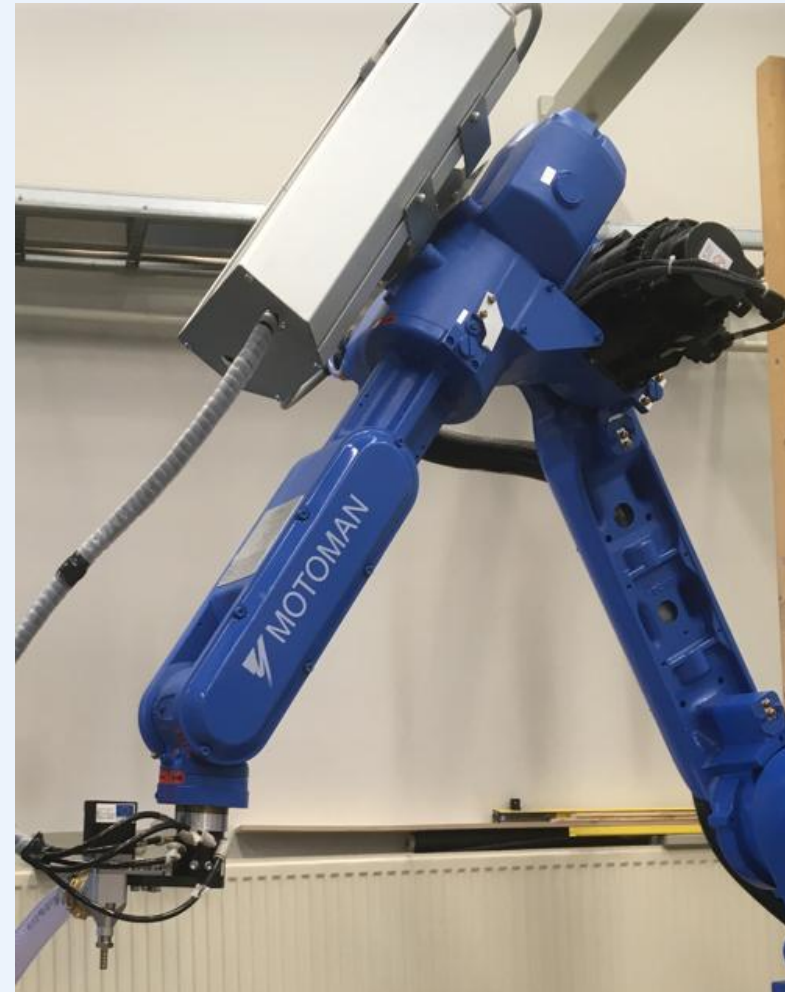
Introduction

Robot-assisted 3D printing based on the extrusion deposition method represents a significant advancement in the use of ceramic and clay materials for the fabrication of large-scale design products.

In this work, a StoneFlower ceramic kit is integrated with a Motoman robotic arm to enhance precision, scalability, and process control in additive manufacturing.

Applications

- Manufacturing of large-scale ceramic products with custom designs.
- With a smaller nozzle kit, it is possible to dispense functional paste-type materials onto 3D surfaces.



Robot assisted ceramic 3D printing

How Does it Work?

The Ceramic nozzle kit, controlled by a robotic arm, extrudes a paste-like material layer by layer. Available ram extruders from 500 ml to 5 litres. The material control unit is equipped with a stepper motor for precise volumetric dispensing of even highly viscous liquids and pastes.

Technical Specifications

- StoneFlower ceramic kit,
- Motoman robot
- Nozzle Ø 2,5-7 mm
- Volume up to 5 litre
- Z-resolution 1-8 mm