

CAD-CAM-AM-ROBOTICS

Construction of robotic post processing system of Additive Manufactured (AM) component.

1. Establishment of digital chain: 3D CAD – AM CAM - Simulation - Robot programming
2. Design of Additive Manufactured demonstration component
3. Development of needed post processing jigs and robot accessory (e.g. dremel-tool or cleaning station)



AM-robotics – expected results

As a result the group should demonstrate a robotic post processing cell / equipment that repeats selected manufacturing step for AM component.

Also digital chain to create robotic program from 3D CAD model through simulation is expected to be solved and even demonstrated.

Two material syringe extrusion

The task is to develop a feeding and mixing nozzle for pasta-kind of materials for Additive Manufacturing.

1. Construction of nozzle body with two feed-controlled syringes
2. Development of mixing device of fed materials
3. Control and extrusion of mixed pasta
4. Integration of the nozzle into existing 3D printer



Two material extrusion

Expected result is that the nozzle body is attached to existing printer, two materials can be mixed and mixture printed on a platform including feed control of syringes, mixing and extrusion.

The group shall demonstrate how large component is 3D printed from two mixed materials.