

Engineering Service

Development / Engineering of process chains for CAD and direct manufacturing of

- customised 3D tissue scaffolds for R&D in Tissue Engineering
- patient specific implants for clinical applications

based on medical imaging, 3D-CAD/CAM and Rapid Manufacturing Technologies.

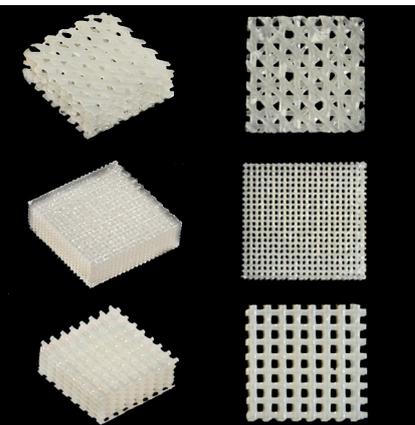
System "BioScaffolder"

System-Solution for manufacturing of customised 3D tissue scaffolds / patient specific implants with defined external shape and internal architecture (three dimensional distribution of inter-connective porosity and material) from multiple biomaterials based on 3D-dispensing.



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Dispense Head	Dispensing Principle	Fluid	Gel	Paste	Melt	Slurry	low to medium viscous materials	medium to high viscous materials
Low Temperature: • Room Temp. • 2 °C - 50 °C (temp. controlled)	Pressure - Time	●	●			●	●	
	Vol. controlled via linear drive	●	●	●			●	
High Temperature: • Room Temp. - 250 °C (temp. controlled)	Auger Screw Pump			●	●	●		●



System

- Desktop, overall dimensions: Depth 680mm, Width 800mm, Height 500mm, weight: ca. 50kg
- 3 Axis (XYZ) gantry version, 4th axis for linear driven dispense heads
- Additional rotational axis (optional)
- 5 phase high resolution stepper motors (resolution ca. 5µm/step)
- Overall repeatability: ± 25µm (mechanical system)
- Working range XYZ: 200mm x 150mm x 90mm
- Low & high temperature dispense heads with 3 different dispense principles
- Automatic tool-changing system for up to 5 dispense heads
- **Needle Sensor (optical)**, repeatability: ± 5µm (same needle type), ± 25µm (different needle types)
- **Base Plate** with vacuum plate, heating: Room Temp. - 100 °C and cooling: 2 °C - 50 °C (optional)
- **System Control** via Industrial -PC with Control Board
- 2 ½ D CAD-CAM Software with 3D-Data Import: 3D-DXF, STL, multiple STL's