IMTEK
DEPARTMENT OF
MICROSYSTEMS ENGINEERING

Master / Bachelor Thesis

Electrical engineering, Microsystems engineering, Physics or similar

Platform and Process Development of 3D Inkjet Printing for Multi-Material Additive Manufacturing of 3D Electronics

Be part of our research group in developing cutting edge multi-material (polymer and metal) 3D printing technology!

Your Tasks

Being part of a team working on multi-material 3D printing of hybrid polymer and electronic devices (based on our patented StarJet technology) for rapid prototyping of 3D electronics with wide range of possibilities such as printed circuit boards (PCB), smart wearables, customized smart sensors.

- Designing, optimizing and printing dielectric inks on PCB, metal, or polymer substrates using multi-material (polymer & metal) 3D printing systems.
- Hardware and Software development of inkjet printing platform such as UV lamp integration, electronics assembling, and testing.
- Programing and optimization of printing process parameters, such as printing height, speed, patterns, and waveforms.
- Printing conductive metal lines and bumps on the dielectrics and preform adhesion test.
- Option to develop a new inkjet printer based on the Creality printer.

Our offer to you

- An attractive workplace in a new building for a student working at a modern, excellently equipped research institute that is close to industry.
- Excellent support for you working in a dynamic, flexible team.
- Flexible working hours.
- Partial refund of travel expenses when using public transport of the ÖPNV (public transport system).

Your Profile

- Good communication skills in English and/or German, motivation to learn something new each day.
- University degree in engineering in the field of electrical engineering, mechatronics, embedded systems, computer science, or comparable with above-average success.
- Knowledge of programming languages C/C++, Python. Knowledge of microcontrollers, web development (Javascript) is a plus.
- Knowledge of CAD design (e.g. Solidworks, Fusion 360).
- Knowledge of microelectronics, PCB design and development (e.g. STM32, Altium/Autodesk Eagle)
- Knowledge of 3D Printing, Marlin, G-code, would be a plus.

Your application

- Send us your interest and documents (motivation letter, CV, certificates/transcript of records) via email or contact us for further details.
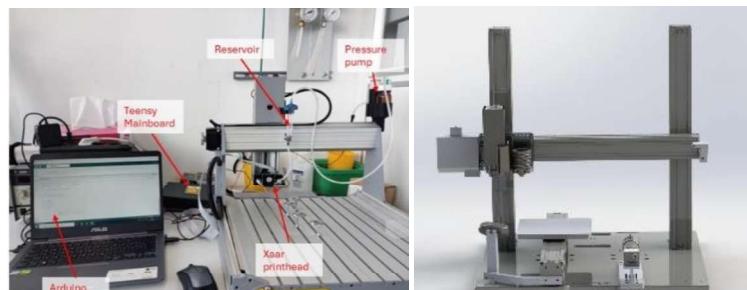
Contact: Dr. Jianguo Feng / Dr. Zhe Shu

Laboratory for MEMS Applications
Georges-Koehler-Allee 103, EG (Anbau)
D-79110 Freiburg
Phone: +49 761 203-98722
E-Mail: jianguo.feng@imtek.uni-freiburg.de