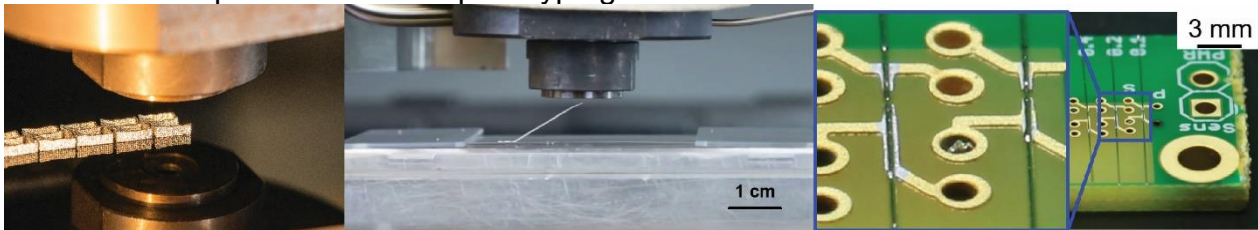


HiWi, Master / Bachelor Thesis
Physics, mechanical / electronic engineering, Microsystems engineering
**Printing 3D Contacts for Micro-Electronics and Flexible
Electronics Applications**

Non-contact metal printing is a very promising technology in industrial 4.0 to deposit highly electrical conductive feature onto various substrates such as PCB boards, sensor chips as well as flexible and wearable electronic devices. The StarJet technology allows for the direct printing of molten metals such as tin alloys (solder) as free flying micro droplets and metal jets. Based on this technology, a printing system for 3D prototyping and for microelectronic applications for research was developed and is successfully utilized in lab: This equipment enables experimental investigation of applications ranging from industrial production to 3D prototyping of metal microstructures.



In the current research project, we are direct interconnecting PCB electronics via direct line printing and drop-on-demand printing via StarJet technology.

Your tasks:

- Direct line printing for interconnection between PCB board and sensor chips;
- Drop-on-demand 3D printing for 3D interconnection for microelectronics;
- Process parameter optimization and data analysis;
- Investigation on electrical conductivity, mechanical stability and flexibility.

Your profile:

- You are studying in the university in Physics, mechanical / electronic engineering, Microsystems engineering;
- Highly motivated in innovative research area of 3D electronics printing;
- Good team spirit and solid communication skills in English;
- Proactive, creative, well-organized and responsible person.

For further information, please do not hesitate to contact us:

Dr. Zhe Shu

IMTEK – Universität Freiburg
Laboratory for MEMS Applications
Georges-Koehler-Allee 103, Office 02-107
D-79110 Freiburg
Phone: [+49 761 203-54057](tel:+4976120354057)
E-Mail: Zhe.Shu@imtek.uni-freiburg.de