

Details

Research Laboratory Microelectronics Bochum (ForLab Bochum)

The Research Lab Microelectronics Bochum is located in the cleanroom of the chair of microsystems technology at Ruhr University Bochum (RUB), Faculty of electrical engineering and information technology. It offers basic technologies for Si-based microsystems and for 2D electronics on 100 mm and 200 wafers. In a 600 m² clean room facility, two core lines are available: A MEMS line based on state-of-the-art thin film processing for SOI processes for surface MEMS. It includes PVD, PECVD and RIE processes. The 2D electronics line makes use of a 5-chamber cluster tool including two ALD chambers, PECVD and two etching chambers (Cl-based ALE, F-based RID). For both lines, all relevant characterization technologies are available. All facilities are offered to internal and external users upon availability.

Address: Universitätsstraße 150
44801 Bochum
Nordrhein-Westfalen
Deutschland
[To website](#)

Host Institution

Ruhr-Universität Bochum
Universitätsstraße 150
44801 Bochum
Nordrhein-Westfalen
Deutschland
<https://www.ruhr-uni-bochum.de>

Scientific Domain

Primary Subjects:

- Materials Science and Engineering
- Computer Science, Electrical and System Engineering

Secondary Subjects:

- Chemistry
- Physics
- Mechanical and Industrial Engineering

Category

Micro- and Nanotechnology facilities

Scientific Services

ForLab Bochum offers scientific and technological service for MEMS and 2D electronics based on state-of-the-art infrastructure. This includes thin film processing on wafers up to 200 mm (PVD of metals, metal oxides and metal nitrides; UV- and laser lithography, wet and dry etching) as well as the processing and manufacturing of SOI-based MEMS. The 2D electronics equipment includes ALD of 2D materials (semiconducting, conducting, isolating) and heterostructures, also on 200 mm wafers, and the realization of electronics components. In most cases, 100 mm and 200 mm wafers can be processed, glass wafers upon request and depending on the type of glass.

Scientific Equipment

- Cleanroom for 100 mm / 200 mm wafers
- UV- and Laser Lithography
- ALD / ALE / RIE / PECVD-Clustertool
- PVD-Clustertool (Sputtering, Evaporation)
- RIE Etching
- PECVD Deposition

- Wet-chemical Processing
- HF Vapor Phase Etching
- Dicing Saw (100 mm only)
- Spectroscopic Ellipsometry (190 - 930 nm)
- Optical and Tactile Profilometry
- Confocal Microscopy
- Atomic Force Microscopy
- High Speed Camera

Keywords

- thin film technology
- microactuators
- microsensors
- surface MEMS
- bulk micromachining
- silicon-on-insulator processing
- high resistivity silicon for RF MEMS
- 2D electronics
- atomic layer deposition
- atomic layer etching
- ultra-thin layer stacks
- flexible electronics
- 2D materials
- transition metal dichalcogenides
- metal oxides

Networks

Research Laboratories Microelectronics Germany

<https://www.forlab.tech>

Users per annum

Internal Users: ca. 30

External Users in total: 5 (2024)

External Users: 5

External Users in the EU: 0

External Users outside of EU: 0