Hochschule Kaiserslautern
University of Applied Sciences

Applied Research Center

Integrated Miniaturised Systems

IMS

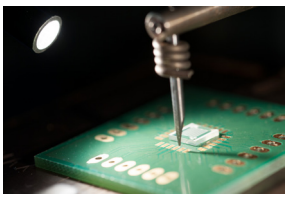
The complex scientific and technological chellenges of modern life require the synergetic interaction of the natural sciences and engineering.
This has been the driving force behind the Applied Research Center „Integrated Minitaturised Systems" (IMS), which develops innovative solutions in science and technology. The developments and results from our research are used in the fields of biomedicine, healthcare, hightech industry, automotive industry and information technology.

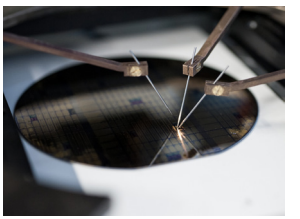
The focus of our research benefits from the interaction of the complementary expertises of our Applied Life Sciences and the Microsystems and Nano Technologies research groups. As a result we go beyond the boundaries of traditional disciplines to generate new scientific and technical solutions.
A key aspect of our work is the application of methods from micro and nano technology to research into and to interact with biological systems at the macro, micro and nano levels.

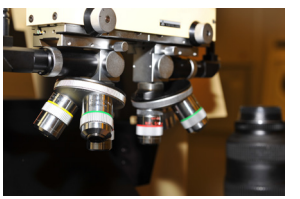
These methods can be used for a wide range of applications from measuring single cells with nano wire sensors, or making artificial tissue, or analysising perfused organs, or testing body sensors for human beings.

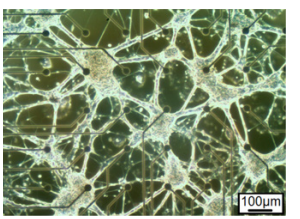
Numerous public and industry funded projects prove the relevance and attractivness of our research topics. We work together with companies, as well as other universities and research institutes in Germany and abroad.

Our research projects are carried out by engineers, Ph.D. students and post-docs.
The research groups also benefit from the active participation of undergraduates and graduates; they in turn develop research skills.









Applied research and research-based education benefit from our modern facilities:

- a well-equipped clean room, 300 square metres, up to class 10 (US FED STD 209E)
- microsystems packaging laboratory
- physical and chemical analytics
- biomedical and molecular biological techniques

Research groups:

Biomedical Measurement Technology
(Prof. Dr. Alexey Tarasov)

CAE and Tool Based Micromachining
(Prof. Dr. Patrick Klär)

Chemical Processes in Microsystems Technology
(Prof. Dr. Monika Saumer)

Enteric Nervous System
(Prof. Dr. Karl-Herbert Schäfer)

Microsystems Packaging and Integration
(Prof. Dr. Antoni Picard)

Microsystems and Nano Technologies
(Prof. Dr.-Ing. Achim Trautmann)

Design and Layout of Miniaturised
Mechanical Systems
(Prof. Dr. Stefan Braun)

Microsystems Integration, Automation
and Process Optimization
(Prof. Dr. Marko Baller)

Moleculare Elektrophysiology
(Prof. Dr. Holger Rabe)

Molecular Immunology and Immunosensation
(Prof. Dr. Bernd Bufe)

Molecular Neurophysiology
(Prof. Dr. Tanja Brigadski)

Molecular Oncology
(Prof. Dr. Dr. Oliver Müller)

Physics
(Prof. Dr. Hildegard Möbius)

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