



## Working Group (Chair) for Integrated Optoelectronics and Microoptics in the Physics Department of Kaiserslautern University of Technology

### **Short description:**

The Integrated Optoelectronics and Microoptics working group (chair) of the Physics Department at Kaiserslautern University of Technology was set up in 1996. It is concerned with the development of mid-infrared antimonide semiconductor lasers and photodetectors, fused silica microflow modules for chemical analysis metrology and miniaturized optical systems. The working group has a staff of 15, most of them in research and development.

### **Services:**

- development of devices
- assistance in the microtechnological fabrication of devices
- wet and dry (deep) etching
- technology consulting
- further training of teachers

### **Core competences, R&D:**

- optics in microsystems technology and techniques

- mid-infrared antimonide semiconductor lasers and photodetectors
- fused silica microflow modules for optical detectors in analytical chemistry ('lab on a chip')
- miniaturization of optical structures (waveguiding integrated-optical or microoptical) e.g. for ultra-short-pulse forming or for transversal mode selection in broad-strip semiconductor lasers
- optical leaky wave conduction
- fabrication/machining microtechnologies for III/V semiconductors, fused silica, polymer-on-glass
- in particular, dry deep etching in all these material systems

### **Applications:**

- mid-infrared spectroscopy
- lab on a chip
- compact (palm-top) optical systems for any applications

### **Contact:**

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