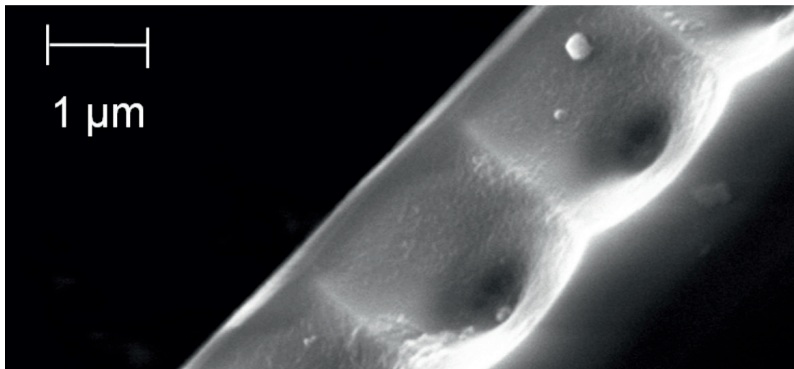
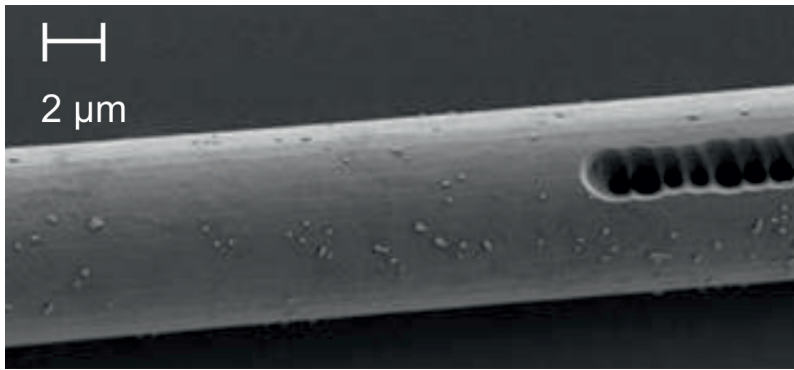
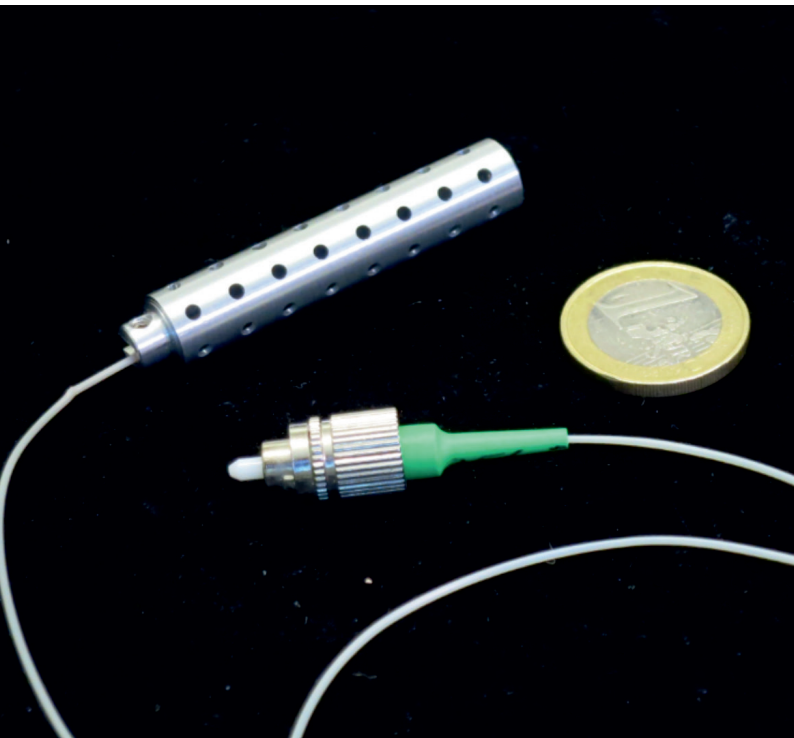


# FIBER OPTICAL SENSOR PLATFORM FOR DETECTION OF CHEMICALS



## AT A GLANCE

Optical sensor platform  
for chemical analysis

### Features

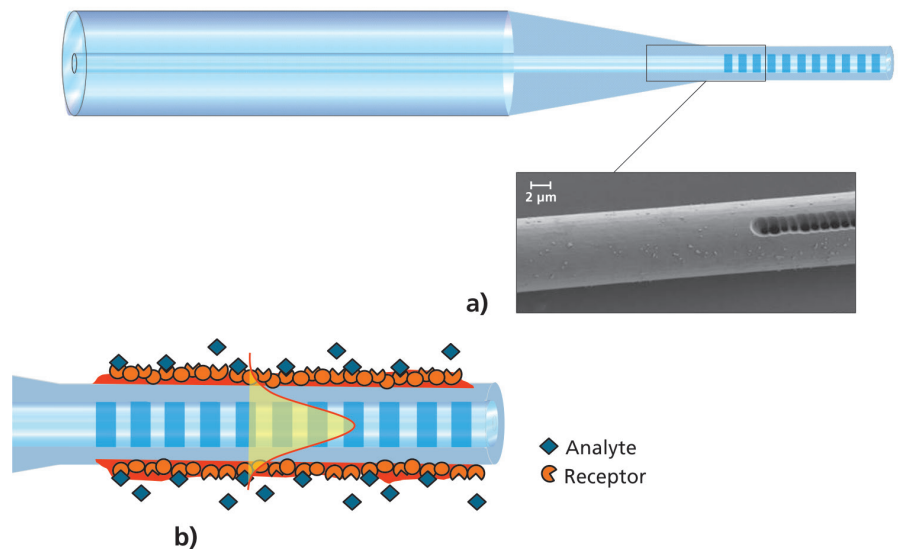
- Specific detection of chemicals
- High sensitivity, fast response time
- Portable or stationary monitoring
- Small sensor head, sensor networks
- Spatial separation of sensor head and sensor console

### Applications

- Detection of chemicals in gas phase
- Monitoring of air in closed rooms
- Alarm system for harmful chemicals in air
- Sniffer nose for explosives in air
- Detection of chemicals in liquids
- Monitoring of chemical processes in laboratories and industry

### Technical background

A fiber optical sensor system based on resonant structures in glass fibers enable the local detection of smallest changes in surrounding media. Each sensor is specifically coated with receptors for precise detection of chemicals. Multiple specific sensors can be integrated in a single sensor head for simultaneous detection of many different chemicals. The sensor head is very small and connected to the console with glass fibers for data acquisition and evaluation. This enables a perfect integration of the sensor head in many applications. The whole sensor system is portable or many sensors can be integrated in a sensor network.



*Fiber optical sensor for chemical detection:  
a) bare fiber core with intrinsic Bragg grating structure; b) with receptor*

---

#### Related Projects & Partners

---

- SNIFF (EFRE ZW 6-85003584)
- TU Clausthal
- Fraunhofer IST
- HAWK Göttingen
- Stöbich technology GmbH
- Miopas GmbH

Dr. Günter Flachenecker  
Fiber Optical Sensor Systems

Phone +49 5321 3816-8420  
info-fs@hhi.fraunhofer.de

Fraunhofer Heinrich Hertz Institute  
Am Stollen 19H , 38640 Goslar  
Germany

[www.hhi.fraunhofer.de/fs](http://www.hhi.fraunhofer.de/fs)