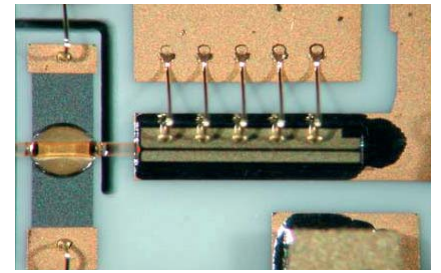


## THRISA – Reliability of optical connections

The institute of electronics (IfE) helped successful to improve and confirm the connections of optical components.



### Motivation

Laser fiber optic components are mostly used in huge quantities for data information transportation. For long-term reliability of these components, the mounting position of the optic fiber to the laser part has to be adjusted and fixed in sub-micrometer range. The fixing of the fiber optic is industrial realized with UV-hardening adhesive, which is a qualified technique for these joining parts.

In collaboration between the Institute of Electronics (IfE) and the Centre Suisse d'Electronique et de Microtechnique SA Alpnach (CSEM) the connection of the UV-hardening adhesive fixing process of the optic fiber has been analyzed, simulated and tested to confirm and improve industrial reliability demands of such connections.

### Description

The hardening and yielding process of the adhesive and therefore the placement offset of the optical fiber were the focus investigation of this project. With interferometrical methods long-term stability measurements were done on prototypes. The results of these and earlier experiments were compared and confirmed with the outputs coming from computer simulations.

### Results

Thanks to the simulations and experiments on prototypes optimizations in the design of the joining parts resulted. The adhesive connections and some important reliability parameter were collected and confirmed.

**Project**  
THRISA

**Industry Partners:**  
CSEM, CH-Alpnach  
[www.csem.ch](http://www.csem.ch)

**Project Duration**  
18 months

**Contact Person**  
Pascal Suter

