conferenceseries.com

European Congress on LASER, OPTICS AND PHOTONICS

November 24-25, 2022 | Webinar

Advanced methods of optical fibre probes machining for holographic micro-endoscopy

Miroslav Stiburek
Brno University of Technology, Czech Republic

With the use of state of the art light microscopy methods, we can image the tissue with sub-cellular resolutions down to 1.5 mm. Beyond this reach, the light must be delivered to the target region by optical relay elements inserted into the tissue – the fibre endoscopes. With fibre micro-endoscopes, we can reach depth down to 5 mm (mostly the bottom of a living mouse brain) with negligible tissue disruption and keep the resolution equal to 1 micrometre, still sufficient for in vivo microscopy. We designed a custom-made device for optical fibre tips machining. The presented poster will focus on optical fibre probe manufacturing (stripping, etching, polishing and coating) and on their impact on imaging quality and performance.

Biography

Miroslav Stibůrek is a PhD student, participate in a group focusing on In-vivo application of Holographic endoscopy. He studied at Brno University of Technology Biomedical Engineering and Bioinformatics. Topic of master thesis was MRI compatible optic fibre thermometer.