Technische Universität München | Theresienstrasse 90 | 80333 München
Lehrstuhl für Messsystem- und Sensortechnik

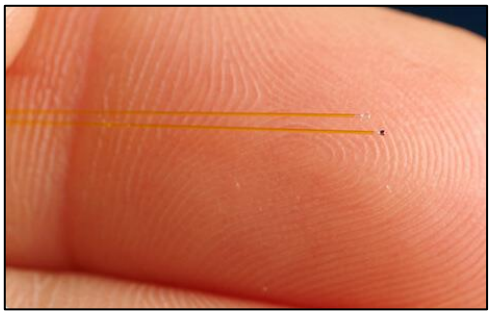
München, 17. November 2019

BA or MA Thesis or Project Work

„Continuous Monitoring of pH with Optical Fiber Sensors“

Background. Light in medicine has applications in photo-dynamic therapy, light-triggered drug delivery, and photo-thermal ablation. It is highly desirable to develop an optical fiber platform with physiochemical properties for implantation in deep tissues while allowing functionalization with photonic materials in sensing applications.

Project scope. The aim of this project is to demonstrate a real-time optical fiber sensor that will enable sensing pH in human brain. A method will be created to functionalize the tip of an optical fiber with pH sensitive hydrogels. The hydrogel optical fiber will allow for sensing the pH levels of cerebrospinal fluid in patients with traumatic brain injury.



References

Functionalized Flexible Soft Polymer Optical Fibers for Laser Photomedicine. Advanced Optical Materials. 6 (3), 1701118 (2018)

Glucose-Sensitive Hydrogel Optical Fibers Functionalized with Phenylboronic Acid. Advanced Materials. 2017, 29, 1606380 (2017)

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