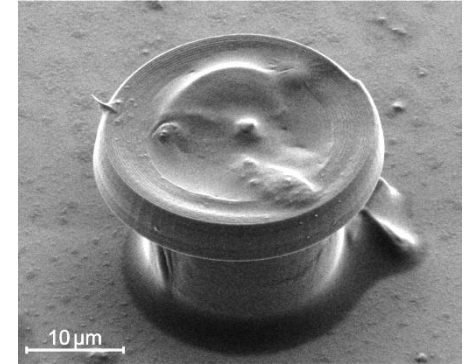
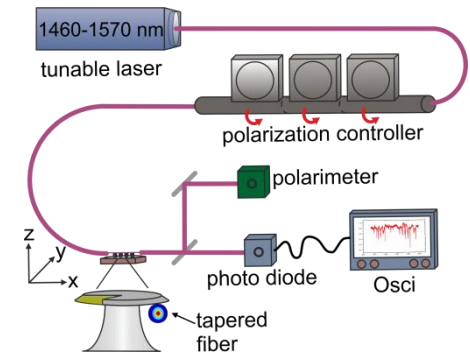


Whispering-Gallery Mode (WGM) micro resonators are rotationally symmetrical cavities in which light is confined via total internal reflection[1]. Such structures show huge potential to be used as building blocks in modern sensing applications or signal processing. In the working group of Prof. Dr. Heinz Kalt we produce and investigate WGM resonators made from different polymers. One very promising candidate as material for tunable WGM resonators are birefringent Liquid-Crystal Elastomers (LCEs) due to their phase transition at relatively low temperatures[2].



LCE-based Resonator

Within this Master's Thesis an already existing setup for fiber-based characterization of WGM resonators has to be upgraded to enable polarization dependent measurements. This includes the installation and calibration of new components, as well as first measurements on samples made from LCE. This application-oriented Master's Thesis offers a lot of insights into modern research areas of optics and photonics and can prepare for the scientific work within the modern optics industry.



Fiber-based Setup

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[1] <https://doi.org/10.1063/1.3280044>

[2] <https://doi.org/10.1021/acsp Photonics.8b00461>