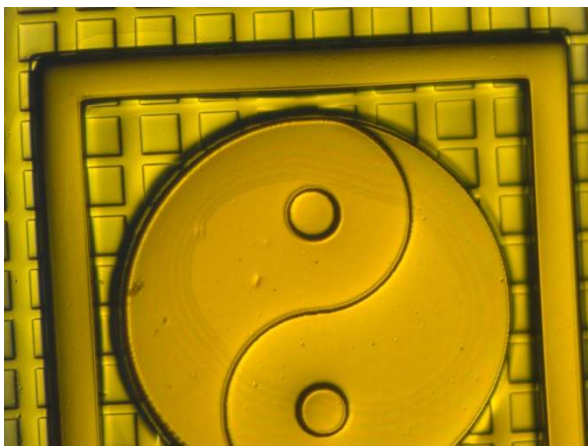


Thesis (Bachelor/Master), HiWi

# Material and process optimization in maskless grayscale lithography

Grayscale lithography is a method for structuring photoactive resist via exposure with light of scaled intensity. Thus, it is possible to obtain various scatterings and structures used in microfluidics and -optics. But, as one can see in the scarce practice of it in fields of microsystem technology, grayscale lithography has its limits. With our new approach it is now possible to dramatically reduce the processing complexity of complicated structures and thus, to make it practicable.



The focus of this work will be to develop the existing process further and optimize it so far, that it is possible to obtain substrates for molding in glass and other materials for microfluidic and -optic devices of scientific significance. This includes the whole process chain; from resin composition over optimization of the lithographic process to the production of microfluidic and -optic chips. Associated with this will also be the MATLAB based generation of virtual masks, a structured experimental plan, literature research, the use of our self-developed Gutenberg-system and the preparation of resins. This project is an excellent opportunity to get practical experience and deeper view in microsystem engineering.

If you are interested and qualified for this job

Interessierte Studenten von Ingenieurwissenschaften (Mikrosystemtechnik, Maschinenbau, Chemieingenieurwesen o.ä.) sowie Physiker und Chemiker mit technischer Affinität sind sehr willkommen. Bitte richten Sie sich für Fragen und Bewerbungen direkt an mich:

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