

# MASTER THESIS

## University of Basel

CSEM, the Swiss Center for Electronics and Microtechnology, Inc., which was founded in 1984, is a privately held research and development company active in microtechnology and nanotechnology, system engineering, and communication technology (ICT).

Micro- and nanostructures are fabricated by default at the CSEM in Basel using various methods. The structures are embossed into novel materials for diverse applications. Such replication steps always involve certain geometrical losses, which strongly depend on the processing parameters and the chosen materials. If new materials are used in our lab, it is important to characterize their replication quality in order to recognize the potential of the new material.

Within a project work (approx. 3 months) and/or  
a master thesis (approx. 6 months) at the University of Basel with the title

## "Nano-replication Properties of Novel Imprint Materials"

we are looking for interested

### Students in the field of Nanosciences or Physics

#### Task

Existing nanostructures have to be replicated into various imprinting materials using a state-of-the-art embossing machine which has recently been put into operation. The replication quality is to be examined with the atomic force microscope (AFM) and then compared with the results of the scanning electron microscope or other specific methods. The dependency of the embossing quality on the embossing parameters, such as pressure and temperature, is to be studied in detail.

#### Goals

- Characterize the replication quality of various materials; optimization of the involved process parameters
- Pinpoint strengths and limits of the applied characterization methods

If you are interested please send an e-mail to or call:

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