

# Digital Dynamic Illumination

## Open PhD position in micro-optics

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The Zeiss Research Cluster *Interactive and Programmable Materials (IPROM)* aims to develop novel classes of materials with programmable functionality. Within this cluster, we are launching research into entirely new concepts for extremely compact, dynamically reconfigurable illumination systems to address future demands and challenges in advanced lighting.

This project will use our decade-long expertise in optofluidics and micro-optics to realize solid-state illumination systems whose beam profiles, radiance patterns, and beam directions can all be digitally programmed using dynamic fluid surfaces. With high power LED emitters, these lighting systems will be ultra-compact yet achieve their functionality with no mechanically moving parts. Challenges will include the design of fluidic control concepts; working with high optical powers; and achieving both stability and rapid reconfigurability in an ultra-miniaturized system.

The Gisela and Erwin Sick Chair of Micro-optics is looking for a PhD student for this project. Your responsibilities will include:

- Conceptualization, design and modeling of reconfigurable fluidic systems;
- Realization of planar and tubular illuminators with controllable radiance patterns;
- Extension to large-aperture or array systems for large-area illumination.

Your profile includes:

- A Master's degree with top grades in photonic; microsystems; mechanical; or electrical engineering;
- Experience in microfabrication and/or fluidics and/or packaging.

We offer:

- A 100% E13 position, initially for 1 year, starting immediately;
- An ambitious applications-oriented project with challenging goals
- An exciting research collaboration with great interdisciplinarity.

Interested? Send your CV and a letter of motivation to [zappe@imtek.uni-freiburg.de](mailto:zappe@imtek.uni-freiburg.de).

