

LiquidEye – A tunable fluidic micro-aperture

PhD project in the Laboratory for Micro-optics

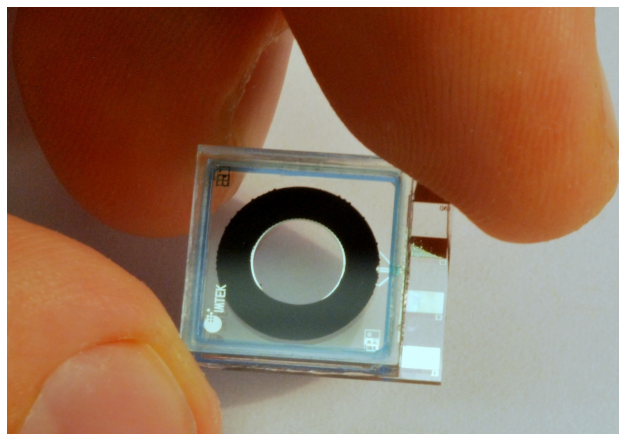
The Laboratory for Micro-optics is one of the world's leading research groups using liquids to make advanced tunable optics. We have used this technology to make a wide spectrum of tunable liquid lenses, prisms, scanners, and phase shifters as well as dynamically tunable apertures.

In earlier work, we have demonstrated an all-fluidic dynamic iris, whose open diameter can be tuned electrically using electrowetting to manipulate liquid surfaces. Now, in collaboration with one of the world's leading manufacturers of medical instrumentation, we intend to strongly miniaturize and integrate this fluidic iris into an endoscope. But not only does the dynamic aperture need to become much smaller and thinner, its optical contrast must increase, the driving voltages need to decrease and, the most challenging of all, the entire system must survive high-temperature sterilization.

We are looking for an energetic, creative and committed PhD student to undertake this challenging development. Your background should include an MSc degree in engineering or physics, with experience in optics or fluidics being a decided advantage. We offer a diverse and dynamic research group, edge-of-the-art technology and close collaboration with a high-profile industrial partner.

This position is planned to start in June 2024.

Intrigued? Send email to zappe@imtek.uni-freiburg.de.



A prototype all-liquid tunable aperture, which can be opened and closed electrically.
Your job in LiquidEye: integrate it into an endoscope.