

Postdoctoral Researcher
Koç University

- Location: Istanbul, TURKEY
- Application Deadline: Open Until Filled

Employer Description

Prof. Dr. Hakan Urey
Optical Microsystems Laboratory

Cataract is the cloudy area in the eye lens and cause blurry and poor vision. There are more than 50 Million surgeries performed annually (world's most common surgery). However, Severity of side-effects and improvement in vision vary from patient to patient and cannot be predicted before surgery. This project is funded by the European Innovation Council (EIC) and aims to develop a novel optical diagnostics device for use before the cataract surgeries in the ophthalmology clinic. The device will show patients how they will see after surgery with different intraocular lens (IOL) options.

Job Description

A Postdoctoral research fellowship in the area of computational holographic displays is available in the Optical Microsystems Laboratory (mems.ku.edu.tr) and Koç University Hospital Ophthalmology Clinic. This appointment will be made at the rank of postdoctoral fellow or research assistant professor at Koç University, commensurate with the applicant's experience.

The fellowship will focus on development of computational holographic displays for vision research. Including development of novel optical architectures, development of algorithms, engineering of in vivo diagnostics device, and translation to clinical use.

The ideal candidate for this position is an organized and creative problem-solver experienced with advanced optics, computational methods, as well as capable of leading graduate students.

Representative recent publications from our group include:

- Koray Kavaklı, Güneş Aydınoğan, Erdem Ulusoy, Cem Kesim, Murat Hasanreisoglu, Afsun Şahin, and Hakan Urey, "[Pupil steering holographic display for pre-operative vision screening of cataracts](#)," Biomed. Opt. Express 12, 7752-7764 (2021)
- [Vision simulator for cataract screening using holographic near-eye display with pupil tracker](#) ARVO Annual Meeting Abstract, June 2021

- Güneş Aydındoğan, Koray Kavaklı, Afsun Şahin, Pablo Artal, and Hakan Ürey, “[Applications of augmented reality in ophthalmology \[Invited\]](#),” Opt. Express 12, 511-538 (2021)

Job Requirements

A PhD (or equivalent) in Electrical Engineering, Applied Physics or a related field is required. Demonstrated excellence and hands-on experience in one or more of the following areas is required: computational holography, coherent optical systems, optical imaging systems, optical design (Zemax), programming (Matlab, C, Python), and clinical studies with novel devices. Creativity is highly desirable.

Compensation: Annual Salary 35,000Euro – 50,000Euro depending on experience plus benefits.

Contact Information

Interested candidates are encouraged to send a CV and a cover letter describing any previous research training, specific areas of interest, and contact information for two letters of reference. Address correspondence to Ms. Gamze Yilmaz, gamyilmaz@ku.edu.tr