



OPEN POSTDOCTORAL POSITION IN A EUROPEAN UNION FUNDED PROJECT (HORIZON EUROPE) FOR RESEARCH IN COLOR HOLOGRAPHY AND HOLOGRAPHIC OPTICAL ELEMENTS FOR AUGMENTED REALITY EYEWEAR

The [Research Group on Holography and Optical Processing](#) (GHPO) at the [Universidad de Alicante](#) (UA) (Spain) offers one 3-year Postdoctoral Researcher position on the subject of **Color Holography and Holographic Optical Elements for Augmented Reality Eyewear**. The research tasks will be developed within a research project funded by the European Commission within the framework of HORIZON EUROPE (Topic: [HORIZON-CL4-2023-HUMAN-01-21](#)).

The GHPO belongs to the [University Institute of Physics Applied to Sciences and Technologies](#) (IUFACyT). This is a multidisciplinary center with more than 60 members, whose principal aim is to pursue both basic and applied research in the fields of Physics. The GHPO has excellent infrastructures for research in holography and its applications, holographic recording materials, and wavefront engineering with liquid crystal spatial light modulators.

GOALS AND ACTIVITIES.

This is a multidisciplinary project combining the expertise of 11 leading organizations with the ambitious goal of providing full color see-through augmented reality on eyeglasses with customized ophthalmic correction, valid for a wide range of use cases.

University of Alicante is responsible for the development of one of the key components in this eyewear: the holographic lens mirror (HLM). This must be recorded on the curved substrate of the glass lens and introduces the augmented information from a microdisplay, mounted on the frame of the glasses, onto the vision path of the user. The HLM, able to produce color image, will be recorded in the reflection geometry on a photopolymer-based recording material. Proper correction of wavefront distortions and compensation of substrate curvature poses great challenges which will be faced both through innovative recording geometries, supported by development of adapted design and numerical simulation tools, and with validation and optimization of the whole process through experimental tests in our laboratory installations. The research in our laboratory will also characterize the properties of the holographic recording material and provide the necessary feedback to the other groups responsible for the fabrication of the photopolymer and the integration of the HLM with the rest of the elements in the eyewear.

The Postdoctoral Researcher is expected to take a central role in all the mentioned tasks leading to the development of optimal HLMs for the project.

ELIGIBLE CANDIDATES AND RECOMMENDED EXPERIENCE

- We are looking for candidates holding a PhD degree and with a strong expertise in Holography and Holographic Optical Elements, with demonstrated experimental and theoretical research experience. The candidate is also expected to gather the following profile:
- Strong English communication skills.
- Expertise in optical design and modelling, and in numerical modelling and electromagnetic mathematical methods (RCWA, FDTD,...).
- Expertise in photopolymer holographic recording materials.
- Expertise in color holography.
- Expertise on ophthalmic optics is welcomed.
- Programming abilities in Matlab, Mathematica, COMSOL, or Labview are welcomed.

JOB CONDITIONS

- Duration: 3 years, starting 1st January 2024.
- Annual gross salary: 35k€/year.

Interested candidates should contact by email Prof. Andrés Márquez Ruiz (andres.marquez@gcloud.ua.es). Please, in the email include the following documentation:

- Updated curriculum vitae.
- One motivation letter stating the candidate's interest in the project.