

## Hybrid diffractive/refractive optics simulator: method and device

The invention relates to a system and to a method for characterizing, designing and/or modifying optical properties of hybrid diffractive/refractive lenses with no need of manufacturing such a lens.

### The Challenge

- Useful to characterize, in optical bench, the diffractive profile independently and/or in combination of the refractive element.
- Useful to design new optical components and evaluate their properties before production.
- Useful to characterise an already manufactured hybrid Optical component and to compare it with its original design.

### The Technology

Illuminating unit / Spatial filter: condenser (microscope objective) and pinhole / Lens and diaphragm / Beam splitter / Mirror / Spatial Light Modulator (SLM) / Lens (IOL) / Supporting structure (wet cell) / Microscope objective and tube lens / Acquisition system / OT: object test / OP\_S: Optical system / Ai: Arm i

### Innovative advantages

The hybrid diffractive/refractive optics simulator is a rapid, economical and low consumption system in optical bench. Unlike numerical simulation, the proposed system provides empirical results, which are closer to the final behaviour of an optical component. This versatile system permits to characterize a diffractive profile independently or in combination with a refractive element before production.

### Current stage of development

A first operational prototype has been built and tested.

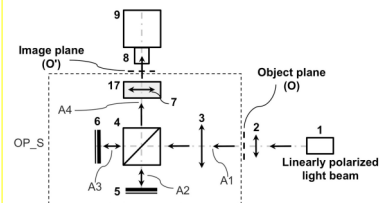
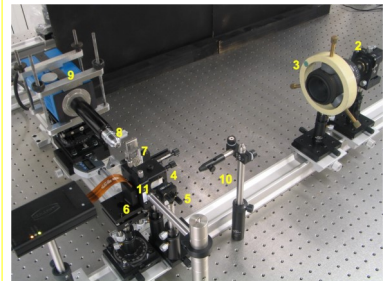
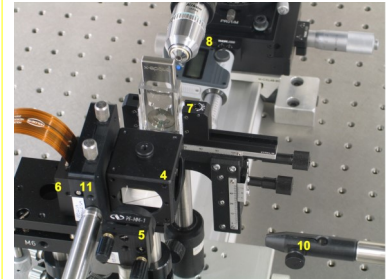
### Applications and Target Market

Testing physically new diffractive intraocular lens designs: Extended focus, trifocal, bifocal, aberration compensation. Also applicable to diffractive contact lenses.

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### Business Opportunity

Licensing opportunity with technical cooperation

### Patent Status

PCT application

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