

## Dynamic Pupil for ophthalmological applications

Researchers from the Spanish National Research Council (CSIC) and the Catalan Institute of Nanoscience and Nanotechnology (ICN2-BIST) have recently developed a self-regulating iris based on light-actuated broadband absorber metamaterial.

Manufacturing companies of contact lenses and/or ocular prosthesis are being sought to collaborate and/or exploit the existing know how through a patent license agreement.

### An offer for Patent Licensing

#### A self-regulated artificial iris

The development of dynamic pupils to solve ocular problems is until now a challenge to be solved. A novel technology based on an artificial dynamic iris, which adapts its size proportionally to the intensity of incident light, simulating the iris's real response, has been a very good approach to overcome this challenge.

The developed artificial dynamic pupil, implemented in contact lenses or ocular prosthesis, would correct eye malfunctions or pupil problems due to ocular diseases such as aniridia, "adie" syndrome, anisocoria, and eye loss, among others.

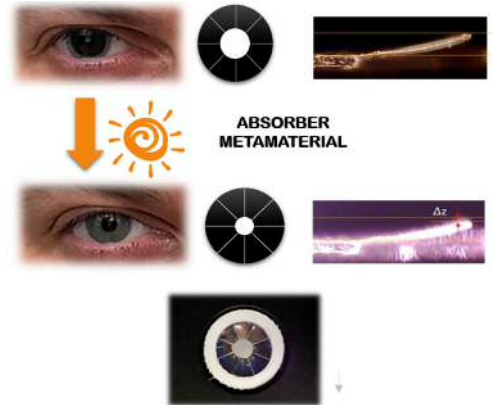


Fig 1.) Prototype of an artificial light actuated pupil.

#### Main innovations and advantages

The main advantages of the prototype developed are the following:

- Light actuated
- Battery free
- Biocompatible and adaptable to different polymers being suitable as ocular prosthesis and/or contact lenses.
- Broadband actuation (not only in the ultraviolet range).
- Shape easily to be customized.
- The application of magnetic fields is not required.

#### Patent Status

Priority patent application filed suitable for international extension

**For more information, please contact:**

Isabel Gavilanes-Pérez, PhD.

Deputy Vice-Presidency for Knowledge Transfer.

Spanish National Research Council (CSIC)

Tel.: +34 – 93 594 77 00

Fax: +34 – 93 580 14 96

E-mail: [isabel.gavilanes@csic.es](mailto:isabel.gavilanes@csic.es)

[comercializacion@csic.es](mailto:comercializacion@csic.es)