

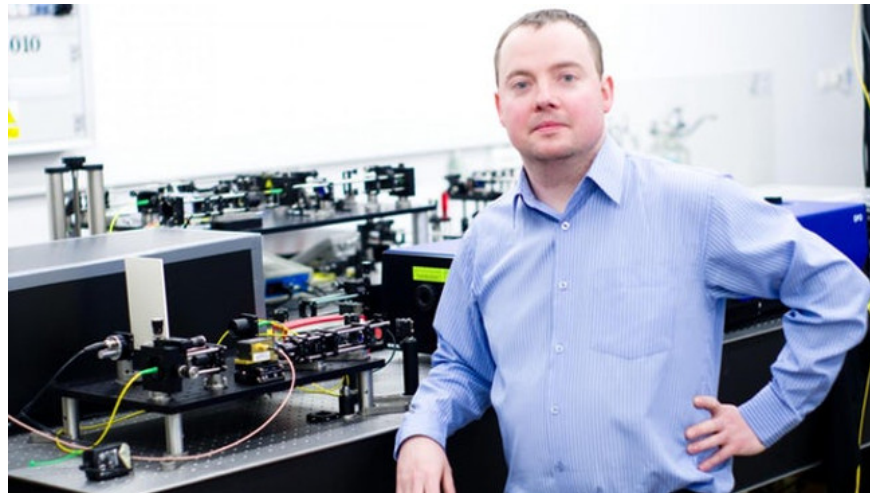
The image system allows the entire eye to be checked with a single instrument

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Unlike current eye testing technology, it allows all eyes to be photographed through a lens. Usually, ophthalmologists must switch between many different measuring lenses during the eye exam. This is because each lens has a fixed focal length of only a few millimeters - the lens can focus on the cornea but cannot focus on the retina.

This new optical combined imaging system (OCT) comes with a lens that can adjust the current in it.



The focus of the device is a clear liquid-filled flask, which is attached to a transparent polymer membrane in the front - the membrane is a lens, and it can change the shape gradually. When an electric current is applied, the membrane is pushed down into the container with a ring-shaped structure, making it swell with liquid. When the current stops working and the membrane returns, the bulge becomes a concave block.

In tests conducted on seven volunteer test subjects, the system not only provides a multifaceted image of the eye, but it can also visualize the interface of glass gel in the eye with the retina and tube. The glasses provide images with "unprecedented details".

This study was conducted by Ireneusz Grulkowski of Nicolaus Copernicus University of Poland, together with Pablo Artal of the University of Murcia of Spain. It was published in Optica magazine.

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