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## [New Imaging Device That Is Flexible and Transparent](#)

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Researchers at the Johannes Kepler University Linz, Austria, have developed a way to capture images on a flexible sheet of plastic, CNET reported. This flexible, transparent imager may lead to touch-free user interface devices and smaller, cheaper CT scanners.

The new imager, which resembles a flexible plastic film, uses fluorescent particles to capture incoming light and channel a portion of it to an array of sensors framing the sheet. With no electronics or internal components, the imager's elegant design makes it ideal for a new breed of imaging technologies, including user interface devices that can respond not to a touch, but merely to a simple gesture.

The sensor is based on a polymer film known as a luminescent concentrator (LC), which is suffused with tiny fluorescent particles that absorb a very specific wavelength (blue light for example) and then re-emit it at a longer wavelength (green light for example). Some of the re-emitted fluorescent light is scattered out of the imager, but a portion of it travels throughout the interior of the film to the outer edges, where arrays of optical sensors (similar to 1-D pinhole cameras) capture the light. A computer then combines the signals to create a gray-scale image.

“To our knowledge, we are the first to present an image sensor that is fully transparent—no integrated microstructures, such as circuits—and is flexible and scalable at the same time,” said study author Oliver Bimber of the Johannes Kepler University

The paper, authored by A. Koppelhuber and O. Bimber entitled “Towards a transparent, flexible, scalable and disposable image sensor using thin-film luminescent concentrators,” was published in the Optical Society’s (OSA) open-access journal, Optics Express.

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