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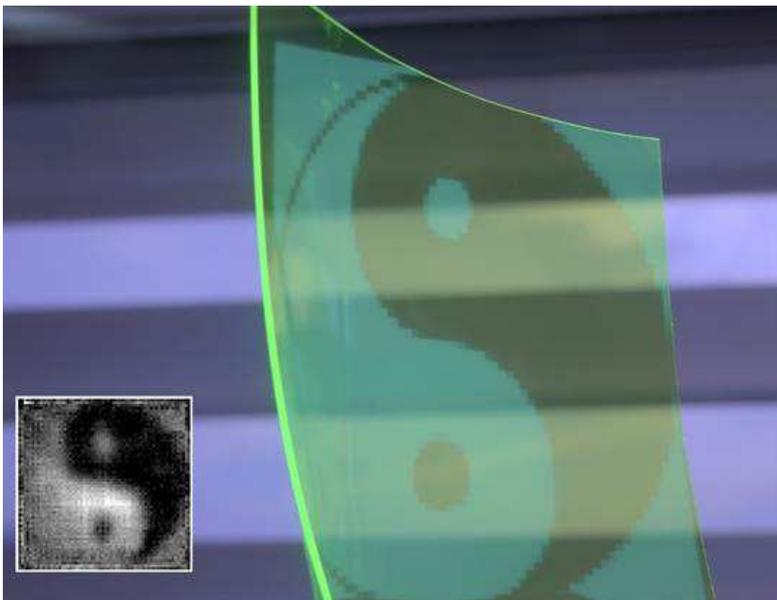
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Devin Coldewey, NBC News - 11 days

## Transparent sensor could turn your wall into a camera



Optics Express

The film sensor (right) with image projected on it, and its output (bottom left)

A new type of image sensor has been developed by Austrian researchers that takes the form of a transparent film that could be placed over windows, walls, or displays. It's still very much a work in progress, but could represent the shape of webcams to come.

Many are familiar with the frustrations of user-facing cameras. Perhaps the most irritating thing is that you can't look someone in the eye when you video chat — a nice problem to have, to be sure, but still a problem. And with things like the Kinect and Leap changing how we interact with computers, having an actual camera stuck to

your monitor or phone seems distinctly 20th century.

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**This new form of sensor** may be a hint at how devices of the future see us: By detecting the light patterns cast on just about any surface — though it's so early in development that they haven't even given it a name yet (unless "thin-film luminescent concentrator" counts).

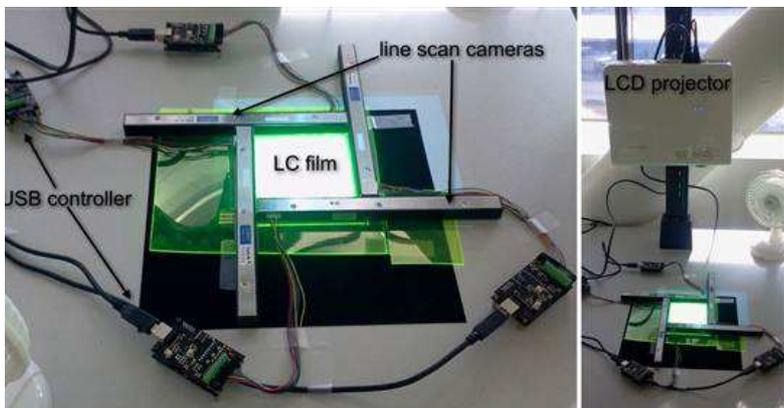
The transparent film intercepts a tiny amount of the light passing through it, channeling to the edges of the sheet. There, an array of photosensors picks it up — and by some complicated math that computes what is bright and dark depending on the way the light hits different sensors, they can reconstruct the image striking the whole sheet.

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Of course, the image would have to be focused on the display itself, the way an image has to be in focus on a piece of film or a

traditional image sensor. Since you can't put a huge lens in front of the display (or project the image directly onto the film, as shown in their test setup), chances are this new sensor will be getting a fairly fuzzy picture of what's in front of it.

But you don't need a sharp picture for every purpose: Gestures could be detected, for instance, or the general ambient light, or the location of the user — all without a "real" camera. And it doesn't



Optics Express

The research lab's test setup, projecting an image onto the sensor.

have to be on a screen; It could easily be put on a window or desk, making those into light-sensitive surfaces.

Right now the resolution is extremely limited, it only produces greyscale images, and there's a lot of noise. But this is just a proof of concept; Improving the quality is the next step (though it is hardly a trivial one).

**The paper describing the technology**, by Alexander

Koppelhuber and Oliver Bimber of Johannes Kepler University Linz in Austria, appeared in Optics Express and can be downloaded for free from the journal.

via [Gizmag](#)

Devin Coldewey is a contributing writer for NBC News Digital. His personal website is [coldewey.cc](#)

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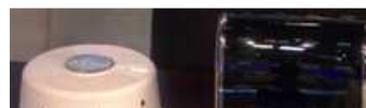


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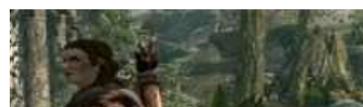
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