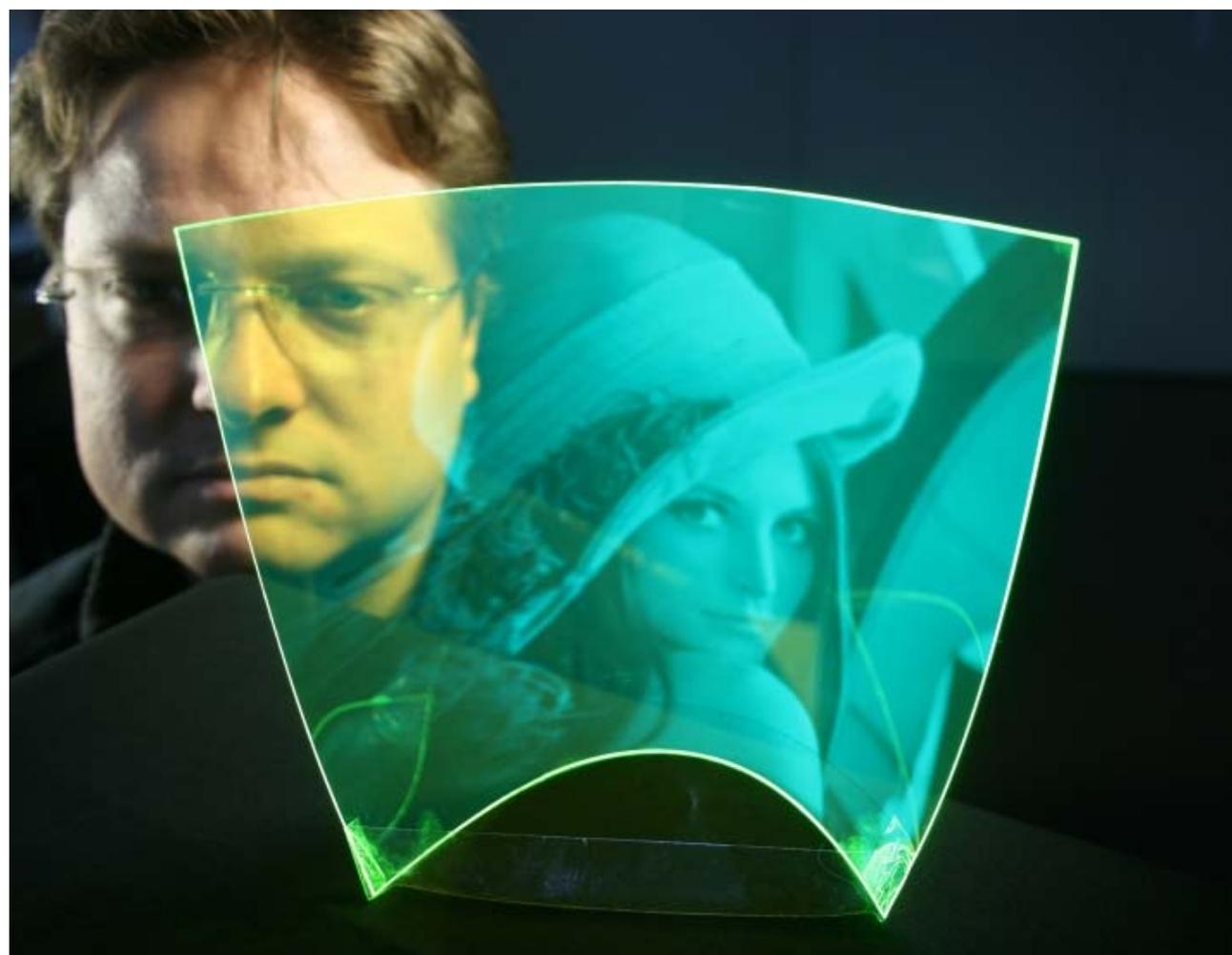


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Flat transparent camera gives eyes to any display

[Evan Ackerman \(/author/evan-ackerman\)](#) Friday, February 22, 2013 - 5:18pm

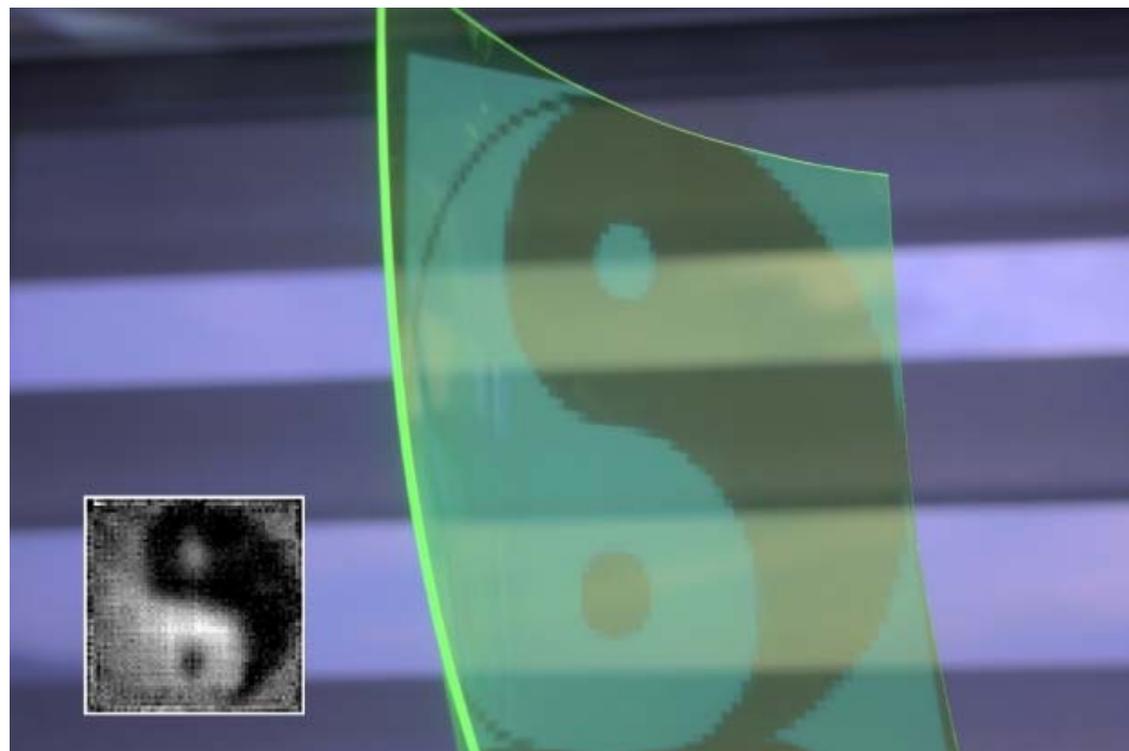


Credit: Optical Express

Take a look at your laptop or your phone and odds are you'll see one or more holes and/or warts on it where a product designer had to begrudgingly integrate a camera. Necessary, but uncool. What would be much cooler is if the camera could just be suffed inside the display itself. Oh hey, we can apparently do that now.

Researchers at Johannes Kepler University in Austria have developed a flat, flexible, transparent screen overlay that functions as a camera system. It's a polymer sheet with fluorescent particles embedded into it, and when light coming into the display hits one of these particles, it gives off a characteristic flash of light at a specific wavelength. Sensors surrounding the display (mounted in the screen bezel) are watching for these flashes, and by measuring their relative brightness, can localize the area of the screen from which the flash originated.

Put together enough of these flashes, and you can reconstruct an image, like this:



The prototype screen only has a resolution of 32-by-32 pixels, and it's in black and white. With sensor improvements and better software, the researchers are confident that they'll be able to significantly improve the resolution, and using multiple layers that each fluoresce at different wavelengths would enable full color image capture with integrated HDR.

We'll probably see this technology first show up not so much as a camera system, but rather as an integrated gesture detection system that comes with anything that has a screen. And since it's transparent, it can even be layered onto things that *don't* have screens to give them visual sensing capabilities.

Optics Express (http://www.osa.org/en-us/about_os/newsroom/newsreleases/2013/new_imaging_device_that_is_flexible_flat_and_tra/), via **Gizmodo** (<http://gizmodo.com/5986221/radical-new-image-sensor-turns-your-entire-display-into-a-digital-camera>)

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22



16



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38

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