

Fuji Xerox shows e-paper colors without filter

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A color image displayed on the prototyped e-paper

(Phys.org) -- Fuji Xerox has come up with an electrophoretic type electronic paper (e-paper) prototype that can realize a color display without using a color filter. The company showcased the e-paper model at SID Display Week 2012, which ran this week in Boston. The Fuji Xerox model has a screen size of 5 inches, pixel count of 600 x 800, resolution of 200dpi, gradation of four, reflectance of 30 percent and contrast ratio of 10:1. Without the filter, the paper can render a color display that is brighter and more vivid, said the company. Its color e-paper concept involves moving colored particles for each color.

The threshold value (electric field) of [electrophoresis](#) becomes different for each color. The e-paper has two [substrates](#), and the color of a particle drawn to the front board can be seen, according to technical notes [posted](#) on *Tech-On!* The prototype displayed colors by moving red and cyan colored particles up and down.

The prototype shown in Boston uses just two elementary colors to realize its color display but Fuji Xerox is working on a full-color e-paper using three elementary colors. The company developed a cell (pixel) using cyan, magenta and yellow-colored particles. Fuji Xerox will search for a way to put all three primary colors into their screen. Other companies looking at next steps in color e-paper include E-Ink, founded in 1997 as a [spinoff](#) from the MIT Media Lab. E-Ink has “Triton Imaging Film,” for color e-paper solutions.

Roughly one year ago, at SID 2011, technology watchers at that time noted how tonally limited e-paper still was. The number of shades was limited and colors looked washed-out.

Ricoh last year used the SID 2011 event to publicize its new color e-paper technology that could offer four times the color range of existing systems, along with cleaner text and images. Ricoh’s solution used a lamination electrochromic method of production forming separate cyan, magenta and yellow organic layers between two substrates.

The upshot is that color e-paper has continued to be a mainstay of “next generation” displays at shows. The latest prototype from Fuji Xerox joins the ranks of those companies offering consumers more reasons to hope for color e-paper progress.

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