

Monday, September 15, 2008

Plastic E-Reader Debut

Plastic Logic will make flexible polymer displays and launch its product in January.

By Katherine Bourzac

This Wednesday, Cambridge University startup [Plastic Logic \(http://www.plasticlogic.com/index.html\)](http://www.plasticlogic.com/index.html), which is headquartered in Mountain View, CA, will open a factory in Dresden, Germany, that will produce about 11 million large, flexible electronic-paper display units a year. The displays will be used in an electronic reader that the company showed at the [Demo \(http://www.demo.com/\)](http://www.demo.com/) conference in San Diego last week. The product, which is scheduled to be commercially launched in January, uses display technology from [E Ink \(http://www.eink.com/\)](http://www.eink.com/) and backplane technologies that employ polymer electronics developed by Plastic Logic's founders at Cambridge University.

Plastic Logic is banking that there's room on the market for another e-book, this one targeted at businesspeople who want to read documents and newspapers on a lightweight, robust device with a large display. Several portable electronic readers already on the market also employ the E Ink display technology and enable users to take thousands of pages of documents on the road. Amazon's [Kindle \(http://www.amazon.com/Kindle-Amazon-Wireless-Reading-Device/dp/B000FI73MA\)](http://www.amazon.com/Kindle-Amazon-Wireless-Reading-Device/dp/B000FI73MA) and the [Sony Reader \(http://www.learningcenter.sony.us/assets/itpd/reader/reader_features.html\)](http://www.learningcenter.sony.us/assets/itpd/reader/reader_features.html) have six-inch screens--about the size of a paperback book. The [Readius \(http://www.readius.com/\)](http://www.readius.com/), made by [Polymer Vision \(http://www.polymervision.com/\)](http://www.polymervision.com/)--a spinout from Philips Electronics--is the size of a cell phone and has a rollable display that stows away.

The Plastic Logic reader's screen is larger, the size of a standard sheet of paper--8.5 by 11 inches--but it doesn't weigh much more than the other readers. It weighs 13 ounces--compared with 10.3 ounces for the smaller Kindle. And it has a display on a plastic substrate, unlike the glass screen used for the Kindle and Sony Reader, which means that it is rugged. (At Demo, Plastic Logic's CEO, Richard Archuleta, showed a video of the display being whacked with a shoe and continuing to operate.)

Instead of dealing with buttons, users can flip through the pages of a book, magazine, or PDF using a touch screen and a simple swiping gesture. The Plastic Logic reader includes a "sticky note" function and a soft keyboard for marking pages. The company hasn't made a final decision on what the reader's storage capacity will be. In January, Plastic Logic will reveal the unnamed reader's price and disclose which partner media companies will provide newspaper and magazine content.

The display uses flexible electronics technology developed about 10 years ago by company cofounders [Richard Friend \(http://www.phy.cam.ac.uk/people/friendr.php\)](http://www.phy.cam.ac.uk/people/friendr.php) and [Henning Sirringhaus \(http://www.phy.cam.ac.uk/people/sirringhaush.php\)](http://www.phy.cam.ac.uk/people/sirringhaush.php), both physics professors at the University of Cambridge. At the Dresden factory, the display's backplanes will be printed with flexible polymer transistors using a rapid, room-temperature direct-writing process. Nozzles akin to those inside an ink-jet printer spray a solution of semiconducting polymers onto plastic sheets, forming transistors. The backplane is then laminated with an E Ink frontplane, an array of microcapsules filled with electrically charged black and white pigments. Several microcapsules are controlled by a single transistor. E Ink said that some modifications to the usual lamination process were required to work with the Plastic Logic backplane, but the company did not disclose details.

While the display itself is flexible, the device's case is rigid, as are the conventional electronics that store the documents. "The benefit of the plastic electronic technology arises through no glass substrate being needed, which

makes the display unbreakable," says company cofounder and chief scientist Siringhaus.

Polymer Vision's [Readius \(http://www.technologyreview.com/Nanotech/18159/?a=f\)](http://www.technologyreview.com/Nanotech/18159/?a=f), which also uses organic electronics, has a rollable polymer display and takes more dramatic advantage of its flexibility than Plastic Logic's reader does. The five-inch screen folds into the device, which is as compact as a cell phone. However, the Readius screen, while made out of unconventional materials, is manufactured using more-traditional mask-based lithography. Siringhaus says that the direct-writing approach is necessary to make the large display in the company's reader, which is nearly 14 inches on the diagonal. Plastic Logic may make fully flexible devices in the future, says Siringhaus.

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Upcoming Events

[AVS 55th International Symposium and Exhibition \(http://www2.av5.org/symposium\)](http://www2.av5.org/symposium)

Boston, MA

Sunday, October 19, 2008 - Friday, October 24, 2008

<http://www2.av5.org/symposium> (<http://www2.av5.org/symposium>)

[2008 Medical Innovation Summit \(http://www.clevelandclinic.org/innovations/summit\)](http://www.clevelandclinic.org/innovations/summit)

Cleveland, Ohio

Monday, November 10, 2008 - Wednesday, November 12, 2008

<http://www.clevelandclinic.org/innovations/summit> (<http://www.clevelandclinic.org/innovations/summit>)

[MITX Awards \(http://www.mitxawards.org/\)](http://www.mitxawards.org/)

Boston, Massachusetts

Wednesday, November 19, 2008

<http://www.mitxawards.org/> (<http://www.mitxawards.org/>)

[WHIT 4.0 \(http://www.whitcongress.com\)](http://www.whitcongress.com)

Washington, DC

Monday, December 08, 2008 - Wednesday, December 10, 2008

<http://www.whitcongress.com> (<http://www.whitcongress.com>)

[EmTech08 \(http://www.technologyreview.com/emtech/08/\)](http://www.technologyreview.com/emtech/08/)

MIT Campus, Cambridge, MA

Tuesday, September 23, 2008 - Thursday, September 25, 2008

<http://www.technologyreview.com/emtech/08/> (<http://www.technologyreview.com/emtech/08/>)