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## International Research Collaboration Reports on New Electrofluidic Display Technology

*For the First Time e-Paper Will Achieve the Brilliance of Printed Media*



**May 1<sup>st</sup>, 2009. Cincinnati Ohio.** An international collaboration including the University of Cincinnati, Sun Chemical, Polymer Vision, and  $\gamma$ -Dynamics announced today the development of Electrofluidic Display Technology (EFD). EFDs are the first technology to electrically switch the appearance of pigments in a manner that provides visual brilliance equal to conventional printed media. This new entry into the race for full-color electronic paper can potentially provide >85% white state reflectance, a performance level required for mass-consumer acceptance of reflective display applications such as e-books, cell-phones, and signage.

This work, which has been underway for several years, and is now publically available in the May 1<sup>st</sup> Issue of Nature Photonics, *Electrofluidic displays using Young-Laplace transposition of brilliant pigment dispersions*. The lead author, Univ. of Cincinnati Prof. Jason Heikenfeld explains the primary advantage of the approach, "The ultimate reflective display would simply place the best colorants used by the printing industry directly beneath the front viewing substrate of a display. In our EFD pixels we are able to hide or reveal colored pigment in a manner that is optically superior to the techniques used in electrowetting, electrophoretic, and electrochromic displays." As all forms of media content go mobile, Edzer Huitema, CTO of project partner Polymer Vision, sees tremendous growth opportunity for rollable displays offering large display/small form factor mobile devices. "Electrofluidic displays combine the brilliant colors and video capability needed for the mass market. Coupled with the thin device structure required for rollable displays, this technology fits perfectly with Polymer Vision's long term objectives." The product offerings could be extremely diverse, including electronic windows and tunable color casings on portable electronics. Adds Russ Schwartz of Sun Chemical, "since a portion of traditional media print will migrate to electronic media, we are very pleased that Sun Chemical's fundamental pigment synthesis and dispersion capabilities can be directly leveraged into electrofluidic display technology."

To expedite commercialization, a new company has been launched  $\gamma$ -Dynamics ([www.gammadynamics.net](http://www.gammadynamics.net)). Founding members of the company include Mr. John Rudolph (formerly Corning Inc.) and Dr. Jason Heikenfeld (Univ. Cincinnati). Several additional key employees will be formally announced by Sept. 2009.  $\gamma$ -Dynamics is currently focusing on manufacturing process development with a target of <\$10/sq. ft. cost, and with focus on simple customization for numerous early product offerings. The technology team has a strong background in electrowetting displays, and is positioning the technology in a manner that circumvents many of the challenges currently facing electrowetting displays (reliability, bistability). The team welcomes inquiries regarding additional product development and strategic-partnerships on volume manufacturing.

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