

Bridgestone Develops Electronic Paper Display

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Bridgestone Corporation, the world's largest manufacturer of tires and other rubber products, has succeeded in the development of the "world's largest-class, thinnest and flexible color display" as reflective electronic paper using a simple matrix drive.

In March 2002, Bridgestone developed Electronic Liquid Powder, a display material that can be used as an alternative to liquid crystal displays. Bridgestone then officially started its electronic display project in October 2004 with the world's first products of their kind that display text and graphics, as well as numerals, and that retain their images after the electrical power has been turned off. The displays were promoted initially as electronic price tags for merchandise.

The most recent displays developed by Bridgestone employ all-plastic panels instead of the traditional glass panel substrates. As a result, while retaining the properties of the QR-LPD (Quick Response - Liquid Powder Display), namely high visibility, wide viewing angle, excellent image sustainability and fast response, the new displays are flexible, ultra thin, ultra light and much larger. Further, the new displays solve the problem of image distortion when the display is bent through the use of a special rib structure. Meanwhile, the incorporation of the newly developed color Electronic Liquid Powder enables vivid two-color displays.

Bridgestone's Electro Liquid Powder is a high-fluidity powder. Its physical properties are intermediate between those of liquids and

conventional, powdered solids; thus, the "Liquid Powder" nomenclature. In fact, the material flows like a particulate suspension. And it is extremely sensitive to electricity, which accounts for the fast responsiveness.

A Liquid Powder Display "remembers" the display information. That is, it continues to display the information after the power supply has been turned off. The new technology thus eliminates the need for electrical consumption in displaying static information.

The recent advancement enhances the convenience of information terminals by giving them greater portability and visibility, characteristics essential for the growing electronic paper display market. The displays are therefore expected to have wide application going forward, especially in the realms of advertising and information distribution.

Bridgestone will exhibit QR-LPD at the Society for Information Display 2006 exhibition to be held in California from June 4 to 9.

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