Color Liquid Crystal Display Driven by Organic TFT

A joint research group of AIST-Photonics Research Institute (AIST-PRI), Hitachi Ltd. and OITDA has developed a printed protective layer that keeps the transistor from damage during pixel formation with liquid crystals and source and drain electrodes which reduce the contact resistance for organic thin film transistors (OTFT). They have also succeeded in producing a 1.4-inch color liquid-crystal display with a resolution of 80 pixels/inch driven by the OTFT prepared by using the developed techniques. These techniques are expected to act as a breakthrough for the development of a low-cost flexible display such as an e-paper.

Color liquid crystal display driven by Organic TFT

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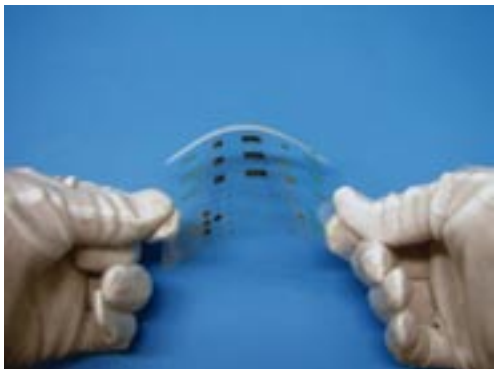
AIST Today Vol. 4, No.11 (2004) 23

Fabrication of SiO_2 Thin Film by Printing Technique

We were succeeded to prepare SiO_2 thin film from the silazane by low temperature solution process. This process enables to fabricate the SiO_2 thin film with good quality at low temperature below 100 ℃. So it is easily prepared on a flexible plastic sheet with no thermal damage (picture). The organic thin film transistor (OTFT) using the solution processed SiO_2 thin film as a gate insulator was comparable to that using thermally oxidized SiO_2 thin film, indicating that the solution processed SiO_2 thin film was such useful for the gate insulator of OTFT as the thermally oxidized SiO_2 thin film.



The solution processed SiO_2 thin film fabricated on a plastic sheet

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AIST Today Vol. 4, No.12 (2004) 26