

ORGANIC TFTS

Friday, May 25 / 9:00 10:20 am / Ballroom A

Chair:

Roger G. Stewart, Sourland Mountain Associates, Morgan Hill, CA, U.S.A.

Co-Chair:

John Zhong, Apple Computer, Cupertino, CA, U.S.A.

63.1: Active-Matrix Backplane with Printed Organic TFTs for Electrochromic Displays (9:00)

*H. Maeda, M. Matsuoka, M. Nagae, H. Honda,
H. Kobayashi
Dai Nippon Printing Co., Ltd., Chiba, Japan*

Printed organic TFTs were fabricated with the introduction of photoassisted surface modification to define the precise electrode pattern on a gate insulator by screen-printing. A 50-ppi TFT array was obtained with uniform mobility and an electrochromic display was successfully driven.

63.2: Distinguished Paper: A Full-Color Top-Emission AMOLED Display Driven by OTFTs (9:20)

*I. Yagi, N. Hirai, M. Noda, A. Imaoka, N. Yoneya, K.
Nomoto, J. Kasahara, A. Yumoto, T. Urabe
Sony Corp., Kanagawa, Japan*

An integrated architecture of organic thin-film transistors (OTFTs) with a multi-layered structure for top-emission organic light-emitting diodes (OLEDs) to realize a full-color top-emission AMOLED display with a resolution of 80 ppi have been developed. The architecture makes low-temperature (<180°C) fabrication possible and high-throughput using solution-processed organic dielectrics.

63.3: High-Resolution OTFT-OLEDs on Plastic Substrates Using Self-Organized Process (9:40)

*S-H. Han, Y-R. Son, S-H. Lee, K-J. Lee, G-S. Cho,
W-S. Kim, T-J. Park, W-S. Jeon, D-J. Choo, J. Jang
Kyung Hee University, Seoul, Korea*

A 2-in. 80-dpi OLED display driven by organic TFTs has been fabricated on a plastic substrate. The pentacene OTFT array was fabricated using a self-organized process. The TFT performance exhibited an average field-effect mobility of $\sim 1 \text{ cm}^2/\text{V}\cdot\text{sec}$, an on/off ratio of 10^{-7} , and a threshold voltage of $\sim -8 \text{ V}$.

63.4L: Late-News Paper: High-Mobility Solution-Processed Organic Thin-Film-Transistor Array for Active-Matrix Color LCDs (10:00)

*M. Kawasaki, S. Imazeki, S. Hirota, T. Shiba, M. Ando
Hitachi, Ltd., Ibaraki, Japan*

*T. Arai
Hitachi, Ltd., Tokyo, Japan*

A solution-processed 240 × 960 organic thin-film transistor array to drive a liquid-crystal display, where the semiconductor, gate dielectric, and passivation films have all been formed using solution processes. A field-effect mobility of 1.6 cm²/V-sec obtained is the highest value for solution-processed TFTs ever reported.

BREAK (10:20–10:40)

AUTHOR INTERVIEWS (12:00–1:00)