OLED MANUFACTURING

Thursday, May 24 / 2:00 3:20 pm / Ballroom B

Chair:
Eliav Haskal, Philips Research Laboratories, Eindhoven, The Netherlands

Co-Chair:
Elliott Schlam, Elliott Schlam Associates, Asbury Park, NJ, U.S.A.

53.1: ***Invited Paper:*** **Laser-Induced Thermal Imaging (LITI) Technology for High-Resolution and Large-Sized AMOLEDs** **(2:00)**

S-T. Lee, M-C. Suh, T-M. Kang, Y-G. Kwon, J-H. Lee, H-D. Kim, H-K. Chung
Samsung SDI Co., Ltd., Kyunggi-do, Korea

By developing and optimizing the transfer films, the OLED structure, and the scanning conditions for patterning evaporated small molecules, LITI technology has achieved an excellent device stability of more than 20,000 hours for a 2.0-in.VGA device architecture for a 150-cd/m^2 white brightness. A Gen 4 LITI pilot system was set up for mass production.

53.2: **Novel Laser Transfer Technology for Manufacturing Large-Sized OLED Displays** **(2:20)**

T. Hirano, K. Matsuo, K. Kohinata, K. Hanawa, T. Matsumi, E. Matsuda, R. Matsuura, T. Ishibashi, A. Yoshida, T. Sasaoka
Sony Corp., Kanagawa, Japan

Laser-induced pattern-wise sublimation with a glass donor has been developed to image RGB pixels for large-sized OLED displays. A scanning laser beam from a glass donor to a substrate precisely patterned the OLED material where the bottom electrodes were arranged. By using this technology, a 27-in. active-matrix OLED display was fabricated.

53.3: **Manufacturing of Gen 4 OLED Masks with Laser MicroJet Technology** **(2:40)**

T-A. Mai, B. Richerzhagen
Synova SA, Ecublens, Switzerland

A new micro-machining LaserMicroJet technology, which produces small delicate openings with totally clean edges, has been developed for OLED mask cutting. By combining a hair-thin low-pressure water jet and a powerful short-pulsed Ytterbium fiber laser, the problem of heat damage has been solved. Synova cutting systems, which have a cutting area of 1300 x 900 mm for producing Gen 4 OLED masks, are now being used at major mask manufacturers.

53.4: Ultra-Thin Flexible OLED Device **(3:00)**

H. Lifka, I. French, C. Tanase, D. J. McCulloch, P. van de Weijer
Philips Research Eindhoven, Eindhoven, The Netherlands

An 18-μm-thick single-pixel OLED device has been successfully fabricated. This was accomplished by the use of a double thin-film encapsulation around the OLED device, on top of an ultra-thin spin-on polyimide layer on glass. The device was lifted off the glass by the Electronics-on-Plastic by Laser Release (EPLaR)process.

BREAK **(3:20–3:40)**

AUTHOR INTERVIEWS **(5:00–6:00)**