

FAST-SWITCHING LCDs II

Wednesday, May 23 / 9:00 – 10:20 am / Room 104BC

Chair:

Philip J. Bos, *Kent State University, Kent, OH, U.S.A.*

Co-Chair:

Birendra Bahadur, *Rockwell Collins, Inc., Cedar Rapids, IA, U.S.A.*

17.1: Invited Paper: High-Performance OCB Mode for Field-Sequential-Color LCDs (9:00)

*T. Ishinabe, T. Miyashita, T. Uchida
Tohoku University, Sendai, Japan*

*K. Wako, K. Sekiya
Aomori Prefecture CREATE JST, Aomori, Japan*

The optically compensated bend (OCB) mode is a promising technology for future high-quality display devices due to its wide viewing angle without gray-scale inversion and color shift, fast response time, high contrast ratio, and wide temperature range. The development of the OCB mode and the optical performance of OCB-mode field-sequential-color LCDs will be summarized.

17.2: A Fast-Switching LCD for Color-Field-Sequential Projection Displays (9:20)

*N. Koma
Sanyo Epson Imaging Devices Corp., Gifu, Japan*

*T. Uchida
Tohoku University, Miyagi, Japan*

A novel fast-switching LCD panel for field-sequential-color projection displays will be described. This panel employs a layer of optically compensated bend (OCB) mode liquid crystal that is maintained at an elevated temperature by a built-in indium tin oxide (ITO) heater and a thermal sensor. This method, referred to as heated-OCB, has realized response times of less than 1 msec.

17.3: Electro-Optical Properties of Polymer-Stabilized OCB and Its Application to TFT-LCDs (9:40)

*R. Hasegawa, Y. Kidzu, I. Amemiya, S. Uchikoga
Toshiba Corp., Kawasaki, Japan*

*H. Wakemoto
Toshiba Matsushita Display Technology Co. Ltd., Kawasaki,
Japan*

A 9-in. full-color polymer-stabilized OCB TFT-LCD with initial bend alignment with a high contrast ratio of more than 250 has been successfully developed. The influence of the UV-curable monomers and the polymer-stabilizing conditions were studied, and it was suggested that the polymer network configuration localized near the substrates was suitable for obtaining a large retardation change and a fast response time.

17.4: Halogenated Non-Planar Dopants for Fast-Response Liquid Crystals (10:00)

*P. Kilickiran, A. Masutani, T. Roberts, N. Hollfelder,
B. Schüller, G. Nelles, A. Yasuda
Sony Corp., Deutschland GmbH, Stuttgart, Germany*

*A. Tadeusiak, G. Sandford
University of Durham, Durham, U.K.*

A major step forward in the development of high-performance liquid-crystal mixtures has been developed by the use of halogenated non-planar dopants. The new mixtures demonstrate the desired performance characteristics of fast response speed, high VHR, and low driving voltage. Furthermore, dopants do not cause any detrimental perturbations in the liquid-crystal alignment and allow for a high contrast ratio.

BREAK (10:20–10:40)

AUTHOR INTERVIEWS (6:30–7:30)