
LCDs FOR MOBILE APPLICATIONS

Thursday, May 24 / 3:40 5:00 pm / Room 104BC

Chair:

Allan R. Kmetz, Consultant, Chatham, NJ, U.S.A.

Co-Chair:

Anthony C. Lowe, Lambert Consultancy, Braishfield, U.K.

57.1: Novel Pixel Design for a Transflective IPS-LCD with an In-Cell Retarder (3:40)

*H. Imayama, J. Tanno, M. Morimoto, K. Igeta, S. Komura,
T. Nagata
Hitachi Displays, Ltd., Chiba, Japan*

*O. Itou, S. Hirota
Hitachi, Ltd., Ibaraki, Japan*

A 2.4-in. QVGA transflective IPS-LCD has demonstrated excellent transmissive performance and high reflectance. An in-cell retarder is patterned only in the reflective region. A contrast ratio higher than 500 and a reflectance higher than 4% were realized.

57.2: Novel Single-Cell-Gap Transflective LCD without Subpixel Separation (4:00)

*H-Y. Mak, P. Xu, X. Li, V. Chigrinov, H-S. Kwok
Hong Kong University of Science and Technology, Kowloon,
Hong Kong*

A TN-LCD with each pixel partially transmissive and partially reflective uses a semi-transparent mirror. The electro-optical characteristics of the transmissive and reflective modes match so that using the same voltage can control them. This configuration has good contrast, viewing angle, and response time and has easy fabrication.

57.3: PVA Technologies for High Transmittance and High Contrast Ratio in Mobile LCDs (4:20)

*J. Sohn, J. Lyu, S-A. Cho, J. Park, S-B. Park, S-H. Yang,
M-H. Jung, K-H. Kim, S-S. Kim
Samsung Electronics Co., Ltd., Kyunggi-do, Korea*

A high-performance low-cost mobile PVA-mode without a quarter-wave plate is proposed. This novel mobile PVA mode achieves an exceptional contrast ratio of 1200, a transmittance as high as 90% of that of the TN mode, and a wide viewing angle of 80° in all viewing directions.

**57.4L:Late-News Paper: Transflective LCD Combining (4:40)
Transmissive IPS and Reflective In-Cell Retarder ECB**

*S. Hirota, S. Oka, O. Itou
Hitachi, Ltd., Ibaraki, Japan*

*K. Igeta, M. Morimoto, H. Imayama, S. Komura, T. Nagata
Hitachi Displays, Ltd., Chiba, Japan*

In-cell retarder technology enables two types of display modes with different features to be realized in the pixels of transflective LCDs. By using this concept, a prototype 2.2-in. QVGA transflective LCD that combines transmissive IPS for wide-viewing-angle performance and reflective in-cell retarder ECB for high reflectance has been developed.

**57.5L:Late-News Paper: MVA Mode with Improved (4:50)
Color-Wash-Out for Mobile Application**

*M. Shibazaki, M. Sugiyama, S. Takahashi, M. Yoshiga,
T. Inada
TPO Displays Corp., Kobe Hyogo, Japan*

*H. C. Li, M. W. Yu, M. F. Wu, Y. J. Chang, T. S. Chang,
C. H. Chang, I. L. Wu, W. C. Chang, D. L. Ting
TPO Displays Corp., Miao-Li County, Taiwan, ROC*

An MVA mode with improved color-wash-out for mobile applications by using a new halftone gray-scale method has been developed, along with a new ITO etched pattern on the color-filter side.

AUTHOR INTERVIEWS

(5:00–6:00)