
EXPLOITING DYNAMIC BACKLIGHTS

Tuesday, May 22 / 2:00 – 3:20 pm / Room 104A

Chair:

Ingrid Heynderickx, *Philips Research Laboratories, Eindhoven, The Netherlands*

Co-Chair:

Masaru Suzuki, *Eastman Kodak Co., Tokyo, Japan*

11.1: Invited Paper: Motion-Fidelity Improvement at a Frame Rate of 120 Hz via the Use of a Scanning Backlight (2:00)

A. A. S. Sluyterman

Philips Lighting, Eindhoven, The Netherlands

Even at a 120-Hz frame rate, motion fidelity still needs improvement. Visible improvement can be achieved via the use of a scanning backlight. The role of the panel properties on the measured performance improvement of the scanning backlight will be highlighted.

11.2: Scanning Backlight for Mobile Displays (2:20)

G. E. Onac, I. M. Vogels, M. Bartula, A. Hoevenaars
Eindhoven, The Netherlands

J. Hector
Philips Research, Surrey, U.K.

H. K. Louwsma
TPO Displays Corp., Heerlen, The Netherlands

The first realization of a scanning backlight for mobile displays will be reported. The backlight employs seven individually lit segments to reduce motion blur caused by the sample-and-hold effect. Optimal driving conditions result in major improvement in the motion portrayal on mobile LCDs.

11.3: Mixed-Color-Sequential Technique for High-Contrast LCDs with Optimum Power Consumption (2:40)

Y-F. Chen, C-C. Chen, K-H. Chen

National Chiao Tung University, Hsinchu, Taiwan, ROC

A mixed color-sequential (MCS) algorithm used with a high-contrast-enhancement technique in an RGB LED backlight display is proposed. Owing to synchronous control of the LCD and LED panels, high-quality images with suppressed color breakup and motion-blur effects have been achieved by using a novel color-sequential technique. Furthermore, a high-contrast image can also be displayed on an LCD panel when mixed RGB and CMY backlights with optimum power consumption are used. The use of the MCS algorithm along with the use of the high-contrast-enhancement technique can result in better performance compared to that of other field-sequential-color techniques.

**11.4: OCB-LCDs with New Driving Method Having a Fast (3:00)
Response of 2.9-msec MPRT and High Contrast Ratio of
1000:1**

*K. Nakao, Y. Tanaka, H. Takahara, S. Kawaguchi,
K. Nishiyama, S. Araki, A Takimoto
Toshiba Matsushita Display Technology Co., Ltd.,
Ishikawa, Japan*

A high-performance OCB-III TFT-LCD using LED backlights has been developed. An MPRT of 2.9 msec and a high contrast ratio of 1000:1 were achieved for a 12.1-in. SVGA OCB-III panel. Even at a low temperature of -20°C , the MPRT of an OCB-III panel is 13.2 msec, which is 1/4 of that of a conventional LCD. An OCB-III panel is superior to a CRT in terms of motion-picture quality.

AUTHOR INTERVIEWS

(3:20–4:20)