

THURSDAY, MAY 24

Session 37

FEDs

FIELD-EMISSION DISPLAYS

Thursday, May 24 / 9:00 10:30 am / Room 102

Chair:

Masayuki Nakamoto, Shizuoka University, Shizuoka, Japan

Co-Chair:

Hsing-Yao Chen, Chunghwa Picture Tubes, Ltd., Taoyuan, Taiwan, ROC

37.1: Invited Paper: Development of a Field-Emission Display (9:00)

*S. Itoh, M. Tanaka, T. Tonogawa, M. Taniguchi, T. Niiyama, K. Tamura, M. Namikawa, Y. Naito, Y. Obara, M. Toriumi, Y. Marushima, Y. Fujimura, K. Nawamaki, Y. Kubo, Y. Takeya, K. Deguchi, S. Kawata, Y. Sato, K. Sakurada, M. Ishibashi, T. Tamaura
Futaba Corp., Chiba, Japan*

Monochrome Spindt-type FEDs have been supplied to the marketplace, and color FEDs have been prepared for mass production. FEDs have the potential not only to realize superior image quality but also low power consumption. The present status of FEDs will be reported.

37.2: Distinguished Paper: Practical CNT-FED Structure for High-Luminance Character Displays (9:20)

*J. Yotani, S. Uemura, T. Nagasako, H. Kurachi, T. Ezaki, T. Maesoba, T. Nakao, M. Ito, A. Sakurai, H. Shimoda, H. Yamada
Noritake Co., Ltd., Mie Japan
Y. Saito
Nagoya University, Nagoya, Japan*

A high-luminance CNT-FED character display with a conventional structure was fabricated. The display panel had 48×480 dots and the subpixel pitch was 1 mm. The innovative process pushed the rib paste out of multi-slit nozzle, and the rib-shape was formed by UV-light irradiation. Data on completed displays will be presented.

37.3: A Carbon-Nanotube Field-Emission Display with Simple Electron-Beam-Trajectory Control (9:40)

*K. Dean, E. Howard, M. R. Johnson, L. Marshbanks
Motorola, Tempe, AZ, U.S.A.
L. Dworsky
Independent Consultant, Phoenix, AZ, U.S.A.*

A carbon-nanotube display structure has been designed to control the electron-beam profile without requiring specific focusing electrodes. A computer simulation, written to predict design margins and improvements, demonstrates good correlation with experimental electron-beam measurements. A full-color frit-sealed display built using this approach shows excellent color purity.

37.4: A Study on PWM Driving Schemes for a 20-in. VGA Carbon-Nanotube FED (10:00)

*C-N. Huang, C-C. Liang
ITRI, Hsinchu, Taiwan*

*W-C. Yao, K-S. Chen, C-C. Kuo, J-S. Fang
TECO Electric & Machinery Co., Ltd., Taipei, Taiwan, ROC*

PWM driving schemes for a 20-in. carbon-nanotube field-emission display (CNT-FED) were studied. One of their advantages is their inherent ability to linearize the gamma curves of CNT-FEDs to increase their gray levels and color accuracy. Some key issues of PWM driving schemes were also analyzed.

37.5L:Late-News Paper: 6-in. Color CNT FED Demonstrator with High Peak Brightness (10:20)

*J. Dijon, A. Fournier, M. Levis, R. Meyer, C. Bridoux,
B. Montmayeul, F. Muller, P. Nicolas, D. Sarrasin
CEA-LITEN, Grenoble, France*

*J. R. Adamski, J. L. Bellanger, D. Bellissens, M. Lefort,
J. L. Ricaud
Thomson Genlis S.A., Genlis, France*

A 6-in. color CNT-FED prototype with a pixel size of $3 \times 200 \mu\text{m} \times 600 \mu\text{m}$, a white peak brightness $>800 \text{ cd/m}^2$ with a 50% aperture ratio for the anode, a 3% white brightness non-uniformity from pixel to pixel, an anode voltage of 5 kV, a cell gap of 1 mm, and an improved high-voltage stability will be described.

BREAK (10:30–10:40)

AUTHOR INTERVIEWS (5:00–6:00)