
FOREWORD

Special Section on Electronic Displays

While high-speed and large-capacity broadband network technologies are developing more and more, electronic displays will make an important role as excellent human interface. It could be said that information technology progress depends on display technology innovation. So far, electronic flat panel displays (FPDs) have been prevailed as everyone knows, including liquid crystal display, plasma display and organic light emitting diode display and etc. The FPD application fields involve small-size screen for mobile phone, middle size for mobile tablet and computer terminal, and large size for digital TV receiver. These electronic displays are composed of various materials, devices and components, based on each operating principle. To enhance the display performance, wide research and development have intensively been conducted till now, although the technology progress of FPD production is considered to be saturated recently.

Otherwise, new concept displays have also emerged as near-future technology, for example, they are flexible display including electronic paper and three-dimensional display. These displays will present us excellent portability/storability and high-reality images, resulting in creating new viewing style and display usage. As other next-generation displays, there are several remaining significant challenges. The attractive research themes include high specification image technology (high-resolution, wide color gamut, fast frame rate and wide dynamic range), collaborating with information content and software, harmonization with upcoming excellent sensor/input devices, and pursuing low power consumption.

To discuss and promote interesting current/future display technologies including the above concepts, the conference of 17th international displays workshops (IDW) was held in Fukuoka, Japan in a period of December 1–3, 2010. The IDW conference, annually-organized in Japan, features many academic papers and dedicated discussion on fundamental technologies adding to high performance industrial technologies. This special section focuses on the recent display technologies including display devices and thin film transistors, and the academic/technical papers are mainly selected from papers in the IDW conference. In this special section, there are 10 papers, consisting of 7 invited papers, 2 contributed full papers, and 1 contributed brief papers. We expected that the papers are useful to further research on electronic displays.

Finally, as the guest editor-in-chief, I would like to express my deepest thanks to all the authors for their submission of interesting papers, and also appreciates all the members of the editorial committee listed below, for their intense efforts and remarkable contributions for this special section.

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Hideo Fujikake, Guest Editor-in-Chief

Hideo Fujikake (*Senior Member*) received the B. Eng., M. Eng. and Dr. Eng. degrees from Tohoku University in 1983, 1985 and 2003. In 1985, he joined Nagano broadcasting station of Japan Broadcasting Corporation (NHK) as a video engineer. Since 1988, he has been with Science and Technology Research Laboratories of NHK, engaged in the research on organic optical/electronic materials and devices (liquid crystal, organic semiconductor, organic light emitting diode and etc.) for flexible display, projection display, holography, optical information processing, and TV program production technology. He is now a senior research engineer in the laboratories. He has also been a visiting professor at Tokyo University of Science from 2006. He received Best Paper Award from IEICE, Excellent Paper Award from IEI-J, Best Paper Award (A) from JLCS in 2001, and Excellent Paper Award from ITE in 2003 and 2009. He also received APEX/JJAP Editorial Contribution Award from JSAP in 2011. He became a chairman of Technical Committee on Electronic Information Displays, IEICE in 2010. He is now a secretary of IEEE Consumer Electronics Society Japan Chapter, a workshop chair on Flexible Displays in IDW conference, and a chairman of Technical Group on Information Display in ITE.

