
FOREWORD

Special Section on Electronic Displays

How many pixels do we need? That is a question display researchers are frequently asked. The number of pixels gets larger and larger without end in all types of displays from a smartphone to TV set. All kinds of displays are requested to have more than 2M pixels, which means that all the display need to have a full HD format even for a small-size of smartphone display. Especially for a large sized TV display, the 2k–4k format is ready to go to the market. Development of high resolution display will continue until 4k–8k format or higher resolution of retina. To achieve such a kind of display, further developments on materials, manufacturing equipment, circuit and systems are needed. Engineers or researchers on display technology cannot take a rest at all and research issues are also increasing as the pixel number increases.

International Display Workshops (IDW) is a conference held in Japan every year to discuss all the technologies about display, and it occupies the second position following to Society for Information Display (SID) held in US because Japan has been leading the display technologies up to now. The conferences related to display technologies have been held as well even in South Korea and Taiwan, but they have the exhibition at the same time and it is the main event for them. In contrast with them, IDW has no exhibition and is characterized as a conference where serious discussions are made. In order to appeal the achievements and raise the status of Japan, many academically-valuable presentations and many participants from all over the world should be gathered in this international conference.

IDW was held in Kyoto International Conference Center in this year from December 4th to 7th in conjunction with Asia Display 2012. The official name is *The 19th International Display Workshops in conjunction with Asia Display 2012*, abbreviated as IDW/AD'12. It was composed of fifteen workshops which deal with own categorized display technology. In order to adjust the recent trend of technologies, the special sessions were formed in the field of "Oxide TFT," "Augmented Reality and Virtual Reality," and "Lighting Technologies." In IDW/AD'12.

Some of the papers in this special section were selected from the papers presented in IDW'12 by the workshop program committees. These papers express well the recent progress of display technologies including display devices and materials. In this special section, there are 9 papers consisting of 7 regular papers and 2 brief papers. We hope that these papers are useful to further research on electronic displays.

Finally, as a guest editor-in-chief in this special section, 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.

Editorial Committee Members:

Guest Editors: Rumiko Yamaguchi (Akita Univ.) and Hiroyuki Nitta (Hitachi)

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Reiji Hattori (Kyushu Univ.), Guest Editor-in-Chief

Reiji Hattori (*Senior Member*) received his M.S. and B.S. degrees in electrical engineering from Osaka University, Japan, in 1988 and 1986, respectively. He became a research associate at the Department of Electrical Engineering, Osaka University, in 1989 and received his Dr. Eng. degree from the same university in 1992. He moved to Kyushu University, Fukuoka, Japan, as an associate professor in 1997 and he was promoted to a professor in 2009. He is now working on OLED and electronic paper technologies. He is a member of SID, IEEE, IEICE and JSAP. He awarded Distinguished Paper of SID'04. He became a chairman of Technical Committee on Electronic Information Displays, IEICE since 2011.

