



Silicon and Metal Oxide Thin Film Transistors: Materials, Process technology, Device Physics, and Reliability

Guest Editor:

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Message from the Guest Editor

The flat panel display (FPD) market is expected to further expand at a higher growth rate in upcoming years, due to the demand for high-resolution, compact, lightweight, and flexible displays. The thin film transistor (TFT) is a key component for controlling picture quality of FPDs.

TFT is a type of field-effect-transistor (FET), which is commonly used for large-area electronics. These transistors are produced by depositing different types of thin films, such as active semiconductors, dielectrics and metals, over a non-conducting substrate. The significant advantage of the TFT is a low fabrication temperature. The main application of TFTs is in active-matrix liquid-crystal displays (AM-LCDs) or organic light emitting diode (AM-OLED) displays, in which each pixel is controlled by one or several TFTs. In addition to AM-LCDs and OLED displays, TFTs are also used in X-ray imaging devices, various sensors (e.g., fingerprint, bio-medical, pH, temperature sensors), and radio-frequency identification (RFID) chips.

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Prof. Mamoru Furuta
Guest Editor





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Message from the Editor-in-Chief

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