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Thin-Film Transistors: Devices for the Next Generation Large Area Electronics

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Message from the Guest Editor

For more than 40 years, thin-film transistors (TFTs) have come a long way from potential electronic devices to being used in our smart phones. TFTs are the mirror of technology improvement with the research and development on materials, processes, and devices.

From a material prospect, the semiconductor has been the main focus. amorphous and polycrystalline materials have been investigated: from amorphous silicon, polysilicon, to organic materials, oxide semiconductors, CNTs, and the recent development of perovskite and 2D materials. For the dielectric, SiO₂ has been the main choice, but high-k dielectrics have been included. Ferroelectric dielectrics have also opened the way to other advanced applications. Materials used as the substrate have also changed with time, as nowadays, flexible or even stretchable substrates are commonly investigated. In terms of process, vacuum processes like sputtering and plasma enhanced chemical vapor deposition (PECVD) have been mostly used for practical industrial applications. Non-vacuum processes including but not limited to inkjet printing, spin-coating, spray coating, roll-to-roll have lead to the possibility of devices [...]



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Editor-in-Chief

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Message from the Editor-in-Chief

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