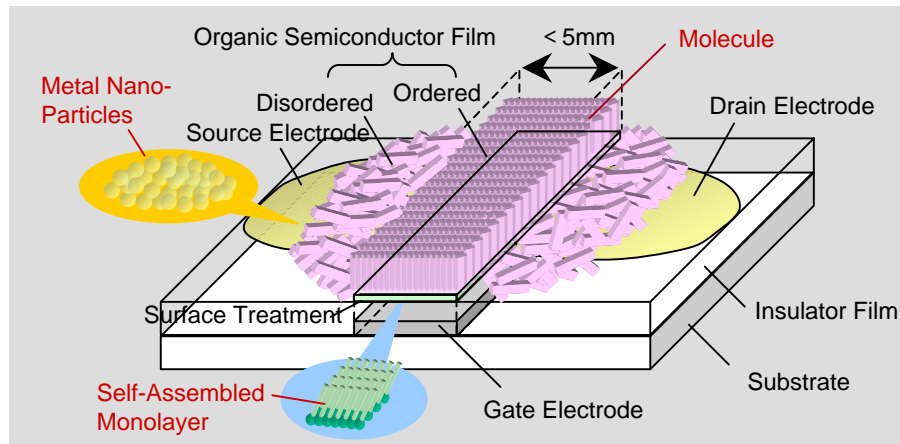
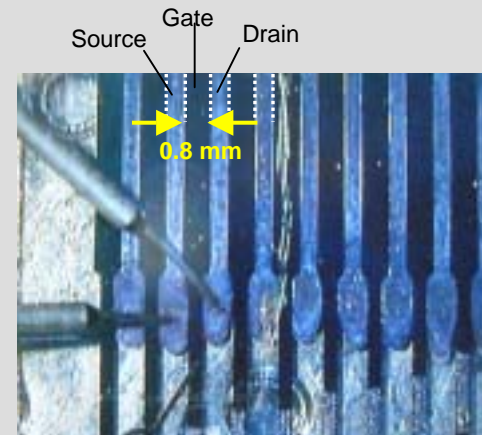


2003/9/10 Release

A new fabrication process using self-assembly of nanomaterials to construct organic transistors - High-definition devices can be fabricated with this new alignment-free printing process -



A transistor structure fabricated using self-organization of nano-materials



Fabricated organic transistors

Hitachi, Ltd. (CEO: Etsuhiko Shoyama), the National Institute of Advanced Industrial Science and Technology (President: Hiroyuki Yoshikawa), and the Optoelectronic Industry and Technology Development Association (OITDA, Chairman: Kunio Nakamura) have developed a novel fabrication process for organic transistors suitable for mass production of sheet displays, a key device for the ubiquitous mobile communication. This process utilizes a “self-assembly” phenomenon in which nanomaterials such as nano-particles and organic molecules are self-assembled into a device structure. As a result, high-definition device structures with a minimum pattern size of less than 5 mm can be printed on glass and plastic substrates without using the conventional photolithographic process.

A part of this work belongs to the “Advanced Organic Device Project” under contract between OITDA and the New Energy and Industrial Technology Development Organization (NEDO).