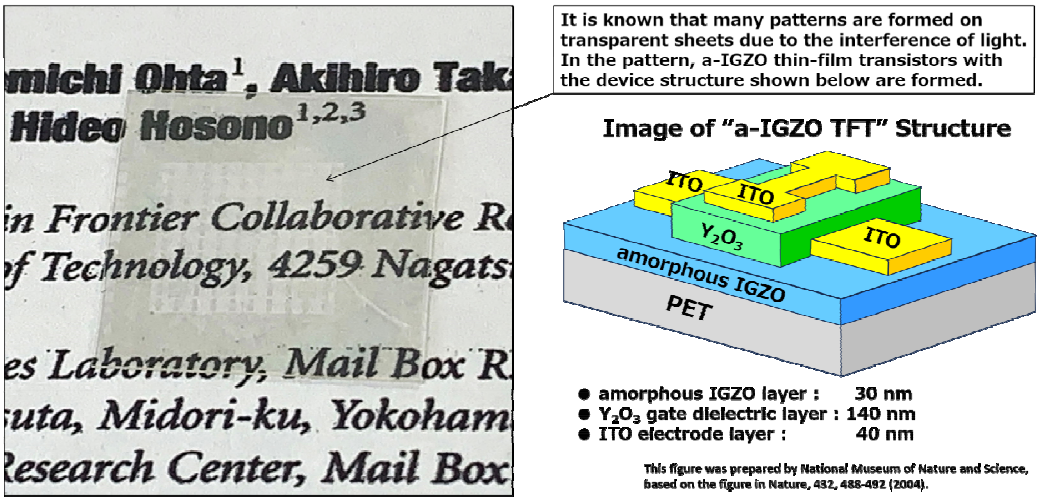
The world's first amorphous oxide semiconductor thin-film transistor

Registration No.	Number 00377		
Registration Date	September 10, 2024	Registration Category	Category 2

Name (Model, etc.)	Flexible and Transparent Amorphous IGZO Thin-Film Transistor
Location	Yokohama-shi, Kanagawa Tokyo Institute of Technology
Owner (Custodian)	Tokyo Institute of Technology
Manufacturer (Company)	Hosono & Kamiya Laboratory at Tokyo Institute of Technology, JST ERATO Project “HOSONO Transparent ElectroActive Materials”, and JST ERATO-SORST Project “Function Cultivation of Transparent Oxides Utilizing Nano-Structure and Their Application”
Year Manufactured	2004
Year first appeared	2004
Reason For Selection	This material is the world's first transparent amorphous oxide semiconductor In-Ga-Zn-O [IGZO] thin-film transistor (TFT), which has triggered a game-changing advancement in the flat-panel display market. This discovery and invention were published in *Nature* in 2004 [*Nature*, 432, 488-492 (2004)] and opened up new markets for high-definition LCD and OLED TVs, which had been difficult to achieve with amorphous silicon TFTs. This technology has now spilled over into medical devices and semiconductor memory, and has caused innovation in the global electronics industry. This excellence in materials technology is of historic importance in the fields of materials science and semiconductor electronics.
Registration Standard	1-C (Contributed to the creation of a new scientific or technological field.) 2-A (Played a notable role in improving people’s way of life and creating new ways of living.)

Open/Closed to Public	Closed to Public
Photo	
Other useful information	