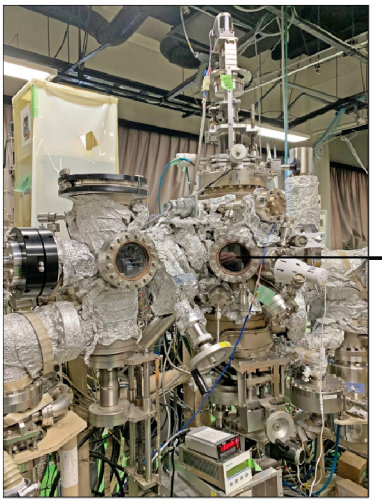
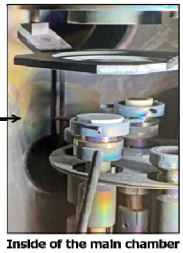
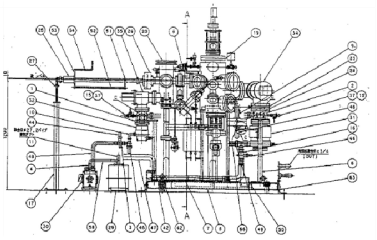
Outstanding material exploration tool that has contributed to the practical application of oxide TFTs

Registration No.	Number 00378		
Registration Date	September 10, 2024	Registration Category	Category 2

Name (Model, etc.)	Pulsed Laser Deposition (PLD) System for Novel Oxide Thin-Film Creation
Location	Yokohama-shi, Kanagawa Tokyo Institute of Technology
Owner (Custodian)	Tokyo Institute of Technology
Manufacturer (Company)	ULVAC Co., Ltd. (Currently: ULVAC, Inc.)
Year Manufactured	1997
Year first appeared	1997
Reason For Selection	This material is a pulsed laser deposition (PLD) system that has contributed to outstanding results in two fields: material science and semiconductor electronics. $InGaO_3(ZnO)_m$ [IGZO] thin-film transistors (TFTs) fabricated in this system achieved mobility values comparable to polycrystalline silicon for epitaxial crystal films and one order of magnitude higher than amorphous silicon for amorphous films. These results were reported in *Science* (2003) and *Nature* (2004) and revealed for the first time the potential of IGZO as a semiconductor. The equipment is of great importance to academia and industry because the control functions of the time have been maintained and the documents and drawings from the time of delivery have been preserved.
Registration Standard	1-C (Contributed to the creation of a new scientific or technological field.)

Open/Closed to Public	Closed to Public
Photo	 PLD system for novel oxide thin-film creation [main Chamber]  Inside of the main chamber   A set of documents and drawings at the time of delivery of the pulsed laser deposition (PLD) system [Test report, Instruction manual, equipment drawings, etc.]
Other useful information	