

## *Abbreviations*

MO	Metal oxides
BG/TC	Bottom gate/Top contact
SBA	Sodium beta-alumina
k	Dielectric constant
AOS	Amorphous oxide semiconductor
TFT	Thin film transistor
LET	Light-emitting transistor
MIM	Metal insulator metal
ICMO	Ion conducting metal oxide
XRD	X-ray diffraction
GIXRD	Grazing incidence X-ray diffraction
AFM	Atomic force microscope
MIM	Metal insulator metal
RMS	Root-mean-square
SEM	Scanning electron microscope
QD	Quantum Dot
TGA	Thermogravimetric analysis
DTA	Differential thermal analysis
UV	Ultraviolet
CPE	Constant-phase-element
FTIR	Fourier-transform infrared spectroscopy
I-V	Current voltage
C-f	Capacitance frequency

AMLCD	Active-matrix liquid crystal displays
AMOLED	Active-matrix organic light-emitting diode
a-Li <sub>5</sub> AlO <sub>4</sub>	Amorphous Li <sub>5</sub> AlO <sub>4</sub>
IZO	Indium zinc oxide
PbS	Lead Sulfide
Si <sup>++</sup>	Heavily doped p-type silicon
EDT	1,2-ethanedithiol
C	Capacitance
d	Thickness of dielectric
I <sub>D</sub>	Drain current
I <sub>G</sub>	Gate current
V <sub>D</sub>	Drain voltage
W/L	Channel width to length ratio
V <sub>G</sub>	Gate voltage
V <sub>Th</sub>	Threshold voltage
SS	Subthreshold swing
μ	Mobility
E <sub>g</sub>	Band gap
h	Planck's constant
N <sub>SS</sub>	Interfaces states