

List of Abbreviations

Abbreviation	Full form
1T1C	One-Transistor One-Capacitor
2D	2-Dimensional
AFM	Atomic Force Microscopy
Ag	Silver
ALD	Atomic Layer Deposition
AlO _x	Aluminium Oxide
BE	Bottom Electrode
BSE	Backscattered Electron
CAFM	Conductive Atomic Force Microscopy
CAGR	Compounded Annual Growth Rate
CBRAM	Conductive Bridge Random Access Memories
CCD	Charge-Coupled Device
CF	Conductive Filament
cF8	Counter Figure of Eight
CMOS	Complimentary Metal-oxide Semiconductor
C-V	Capacitance-Voltage
CVD	Chemical Vapor Deposition
DRAM	Dynamic Random Access Memories
EBL	Electron Beam Lithography
ECM	Electrochemical Memory
EDS	Energy Dispersive Spectra
EELS	Electron Energy Loss Spectroscopy
F8	Figure of Eight
FeRAM	Ferroelectric Random Access Memories
FESEM	Field Emission Scanning Electron Microscope
FG	Floating Gate
FN	Fowler-Nordheim
FTIR	Fourier-Transform Infrared Spectroscopy
GO	Graphene oxide
GO	Graphene Oxide
GST	Ge ₂ Sb ₂ Te ₅
HfO _x	Hafnium Oxide
HRS	High Resistance State
HRTEM	High Resolution Transmission Electron Microscope
IPA	Isopropyl Alcohol
I-t	Current-time
ITO	Indium Tin Oxide
I-V	Current-Voltage
KITE	Keithley Interactive Test Environment
LRS	Low Resistance State
MOS	Metal-oxide
MoS ₂	Molybdenum disulfide
MOSFET	Metal-Oxide-Semiconductor Field-Effect Transistor
MTD	Multi-Temperature deposition
MTJ	Multi-tunnel Junction
NVM	Non-volatile Memories
OFET	Organic Field Effect Transistor
OxRAM	Oxide Random Access Memories
PCRAM	Phase Change Random Access Memories
PET	Polyethylene Terephthalate

PMC	Programmable Metallization Cell
P_{reset}	Reset Power
P_{set}	Set Power
PSPD	Position Sensitive Photo Detector
PVP	poly(4-vinylphenol)
PVS	Pulsed Voltage Source
PZT	$\text{Pb}_x\text{Zr}_{1-x}\text{TiO}_3$
Redox	Reduction-Oxidation
RFID	Radio Frequency Identification
rGO	Reduced Graphene Oxide
R_m	Magnetoresistance
RMS	Root Mean Square
RPM	Rotation Per Minute
RRAM	Resistive Random Access Memories
RS	Resistive Switching
SBT	$\text{SrBi}_2\text{Ta}_2\text{O}_9$
SCS	Semiconductor Characterization System
SE	Scanning Electron
SEM	Scanning Electron Microscope
SMU	Source Measuring Unit
SONOS	Silicon-Oxide-Nitride-Silicon
SRAM	Static Random Access Memories
SSD	Solid-state Drives
STT-MRAM	Spin-Transfer Torque Magnetoresistive Random Access Memories
TCM	Thermochemical Memory
T_{crystal}	Crystallization Temperature
TDMAH	Tetrakis-dimethyl-amido Hafnium
TE	Top Electrode
TF-SCLC	Trap-Filled Space Charge Limited Conduction
Ti	Titanium
TMA	Trimethyl Aluminum
UV	Ultra Violet
VCRAM	Valance Change Random Access Memories
V_f	Forming Voltage
V_{reset}	Reset Voltage
V_{set}	Set Voltage
X-FESEM	Cross-Sectional Field Emission Scanning Electron Microscopy
X-HRTEM	Cross-sectional High Resolution Transmission Electron Microscope
XPS	X-ray Photoelectron Microscopy