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Abbreviations and Symbols

Abbreviations

AFM	Atomic force microscope
AI	Artificial intelligence
at%	Atomic percentage
BE	Binding energy
CFs	Conductive filaments
CIFC	Central instrument facility center
CMOS	Complementary metal oxide semiconductor
DI	Deionized
EG	Ethylene glycol
EIS	Electrochemical impedance spectroscopy
eV	Electron volt
Exp.	Experimental
GIXRD	Grazing incidence X-ray diffraction
GPa	Giga Pascal
HRS	High resistance state
HRTEM	High resolution transmission electron microscopy
IDLH	Immediately dangerous to life or health
I-V	Current voltage
JCPDS	Joint committee on powder diffraction standards
KE	Kinetic energy
keV	Kilo electron volt
kHz	Kilo Hertz

kV	Kilo volt
LRS	Low resistance state
μA	Micro ampere
mA	Milli ampere
mg	Milligram
MIM	Metal-insulator-metal
ML	Machine learning
μL	Microliter
μm	Micrometer
mm	Millimeter
NIOSH	National institute for occupational safety and health
nm	Nanometer
NMP	N-methyl pyrrolidone
No.	Number
NVS	Nonvolatile switching
OPE	Orange peel extract
OSHA	Occupational safety and health administration
PPF	Pair pulse facilitation
ppm	parts per million
p^{++}-Si	Heavily doped p-type silicon
P-V	Polarization voltage
PVDF	Polyvinylidene fluoride
RE	Rare earth
RRAM	Resistive random access memory
RT	Room temperature

SAED	Selected area electron diffraction
STDP	Spike time-dependent plasticity
STM	Short-term memory
TEM	Transmission electron microscopy
TMO	Transition metal oxides
TWA	Time weighted average
UV	Ultra violet
vs.	Versus
VS	Volatile switching
wt%	Weight percentage
XPS	X-ray photo electron spectroscopy
XRD	X-ray diffraction

Symbols

Å	Angstrom
^{o}C	Degree Centigrade
d	Interplanar spacing
h	hour
k	Dielectric constant
K	Kelvin
λ	Wavelength
P	Pressure
T	Temperature
V_o	Oxygen vacancy
V_o^{+}	Singly charged oxygen vacancy
V_o^{++}	Doubly charged oxygen vacancy