Tsung-Ming Tsai

List of Publications by Year
in descending order

81 papers	1,996 citations	279798 23 h-index	254184 43 g-index
81 all docs	81 docs citations	81 times ranked	1700 citing authors

#	Article	IF	Citations
1	Resistance random access memory. Materials Today, 2016, 19, 254-264.	14.2	391
2	Physical and chemical mechanisms in oxide-based resistance random access memory. Nanoscale Research Letters, 2015, 10, 120.	5.7	130
3	Redox Reaction Switching Mechanism in RRAM Device With $hbox{Pt/CoSiO}_{X}hbox{/}hbox{TiN}$ Structure. IEEE Electron Device Letters, 2011, 32, 545-547.	3.9	120
4	Atomic-level quantized reaction of HfO_x memristor. Applied Physics Letters, 2013, 102, 172903.	3.3	100
5	Functionally Complete Boolean Logic in 1T1R Resistive Random Access Memory. IEEE Electron Device Letters, 2017, 38, 179-182.	3.9	95
6	Low-power bipolar resistive switching TiN/HfO₂/ITO memory with self-compliance current phenomenon. Applied Physics Express, 2014, 7, 034101.	2.4	70
7	Characterization of Oxygen Accumulation in Indium-Tin-Oxide for Resistance Random Access Memory. IEEE Electron Device Letters, 2014, 35, 630-632.	3.9	55
8	Reducing operation current of Ni-doped silicon oxide resistance random access memory by supercritical CO2 fluid treatment. Applied Physics Letters, 2011, 99, .	3.3	53
9	Bulk Oxygenâ€"Ion Storage in Indiumâ€"Tinâ€"Oxide Electrode for Improved Performance of HfO₂-Based Resistive Random Access Memory. IEEE Electron Device Letters, 2016, 37, 280-283.	3.9	50
10	Origin of Hopping Conduction in Sn-Doped Silicon Oxide RRAM With Supercritical $hbox{CO}_{2}$ Fluid Treatment. IEEE Electron Device Letters, 2012, 33, 1693-1695.	3.9	45
11	Complementary resistive switching behavior induced by varying forming current compliance in resistance random access memory. Applied Physics Letters, 2015, 106, .	3.3	45
12	Characteristics of hafnium oxide resistance random access memory with different setting compliance current. Applied Physics Letters, 2013, 103, .	3.3	44
13	Silicon introduced effect on resistive switching characteristics of WOX thin films. Applied Physics Letters, 2012, 100, 022904.	3.3	39
14	Suppress temperature instability of InGaZnO thin film transistors by N2O plasma treatment, including thermal-induced hole trapping phenomenon under gate bias stress. Applied Physics Letters, 2012, 100, .	3.3	38
15	Effects of Varied Negative Stop Voltages on Current Self-Compliance in Indium Tin Oxide Resistance Random Access Memory. IEEE Electron Device Letters, 2015, 36, 564-566.	3.9	37
16	Asymmetric Carrier Conduction Mechanism by Tip Electric Field in $hbox{WSiO}_{X}$ Resistance Switching Device. IEEE Electron Device Letters, 2012, 33, 342-344.	3.9	33
17	Temperature-Dependent Instability of Bias Stress in InGaZnO Thin-Film Transistors. IEEE Transactions on Electron Devices, 2014, 61, 2119-2124.	3.0	32
18	Resistive Switching Mechanism of Oxygen-Rich Indium Tin Oxide Resistance Random Access Memory. IEEE Electron Device Letters, 2016, 37, 408-411.	3.9	31

#	Article	IF	Citations
19	A Method to Reduce Forming Voltage Without Degrading Device Performance in Hafnium Oxide-Based 1T1R Resistive Random Access Memory. IEEE Journal of the Electron Devices Society, 2018, 6, 341-345.	2.1	29
20	Improving Performance by Doping Gadolinium Into the Indium-Tinâ€“Oxide Electrode in HfO₂-Based Resistive Random Access Memory. IEEE Electron Device Letters, 2016, 37, 584-587.	3.9	28
21	Resistance Switching Characteristics Induced by O₂ Plasma Treatment of an Indium Tin Oxide Film for Use as an Insulator in Resistive Random Access Memory. ACS Applied Materials & Interfaces, 2017, 9, 3149-3155.	8.0	27
22	Ultra-violet light enhanced super critical fluid treatment in In-Ga-Zn-O thin film transistor. Applied Physics Letters, 2014, 104, .	3.3	26
23	Improvement of Resistive Switching Characteristic in Silicon Oxide-Based RRAM Through Hydride-Oxidation on Indium Tin Oxide Electrode by Supercritical CO₂ Fluid. IEEE Electron Device Letters, 2015, 36, 558-560.	3.9	25
24	Tri-Resistive Switching Behavior of Hydrogen Induced Resistance Random Access Memory. IEEE Electron Device Letters, 2014, 35, 217-219.	3.9	23
25	Role of H₂O Molecules in Passivation Layer of a-InGaZnO Thin Film Transistors. IEEE Electron Device Letters, 2017, 38, 469-472.	3.9	23
26	Analysis of Negative Bias Temperature Instability Degradation in p-Type Low-Temperature Polycrystalline Silicon Thin-Film Transistors of Different Grain Sizes. IEEE Electron Device Letters, 2019, 40, 1768-1771.	3.9	23
27	Boosting the performance of resistive switching memory with a transparent ITO electrode using supercritical fluid nitridation. RSC Advances, 2017, 7, 11585-11590.	3.6	21
28	Mechanism of Triple Ions Effect in GeSO Resistance Random Access Memory. IEEE Electron Device Letters, 2015, 36, 552-554.	3.9	19
29	Solving the Scaling Issue of Increasing Forming Voltage in Resistive Random Access Memory Using Highâ€<i>k</i> Spacer Structure. Advanced Electronic Materials, 2017, 3, 1700171.	5.1	19
30	Improvement of Resistive Switching Characteristics in Zinc Oxide-Based Resistive Random Access Memory by Ammoniation Annealing. IEEE Electron Device Letters, 2020, 41, 357-360.	3.9	19
31	Analyzing Electric Field Effect by Applying an Ultra-Short Time Pulse Condition in Hafnium Oxide-Based RRAM. IEEE Electron Device Letters, 2018, 39, 1163-1166.	3.9	17
32	Abnormal Hump Effect Induced by Hydrogen Diffusion During Self-Heating Stress in Top-Gate Amorphous InGaZnO TFTs. IEEE Transactions on Electron Devices, 2020, 67, 2807-2811.	3.0	16
33	Suppression of endurance degradation by applying constant voltage stress in one-transistor and one-resistor resistive random access memory. Japanese Journal of Applied Physics, 2017, 56, 010303.	1.5	14
34	Nitrogen Buffering Effect on Oxygen in Indium-Tin-Oxide-Capped Resistive Random Access Memory With NH₃ Treatment. IEEE Electron Device Letters, 2015, 36, 1138-1141.	3.9	13
35	Controllable Set Voltage in Bilayer ZnO:SiO₂/ZnO_{<italic>x</italic>} Resistance Random Access Memory by Oxygen Concentration Gradient Manipulation. IEEE Electron Device Letters, 2014, 35, 1227-1229.	3.9	12
36	Enhancement of Surface Chemical and Physical Properties of Germaniumâ€“Sulfur Thin Film Using a Waterâ€Supplemented Carbon Dioxide Supercritical Fluid Treatment Technique. Advanced Materials Interfaces, 2018, 5, 1801105.	3.7	12

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37	Hydrogen as a Cause of Abnormal Subchannel Formation Under Positive Bias Temperature Stress in a-InGaZnO Thin-Film Transistors. IEEE Transactions on Electron Devices, 2019, 66, 2954-2959.	3.0	12
38	Confirmation of filament dissolution behavior by analyzing electrical field effect during reset process in oxide-based RRAM. Applied Physics Letters, 2016, 109, .	3.3	11
39	Super Critical Fluid Technique to Enhance Current Output on Amorphous Silicon-Based Photovoltaic. IEEE Electron Device Letters, 2017, 38, 1401-1404.	3.9	11
40	Abnormal Subthreshold Leakage Current at High Temperature in InGaZnO Thin-Film Transistors. IEEE Electron Device Letters, 2012, 33, 540-542.	3.9	10
41	Influence of Ammonia on Amorphous Carbon Resistive Random Access Memory. IEEE Electron Device Letters, 2017, 38, 453-456.	3.9	10
42	A Dualâ€Gate InGaZnO₄â€Based Thinâ€Film Transistor for Highâ€Sensitivity UV Detection. Advanced Materials Technologies, 2019, 4, 1900106.	5.8	10
43	Obtaining Lower Forming Voltage and Self-Compliance Current by Using a Nitride Gas/Indiumâ€"Tin Oxide Insulator in Resistive Random Access Memory. IEEE Transactions on Electron Devices, 2016, 63, 4769-4775.	3.0	9
44	Controlling the Degree of Forming Soft-Breakdown and Producing Superior Endurance Performance by Inserting BN-Based Layers in Resistive Random Access Memory. IEEE Electron Device Letters, 2017, 38, 445-448.	3.9	9
45	Effects of Redundant Electrode Width on Stability of a-InGaZnO Thin-Film Transistors Under Hot-Carrier Stress. IEEE Transactions on Electron Devices, 2020, 67, 2372-2375.	3.0	9
46	Investigation on the current conduction mechanism of HfZrO_x ferroelectric memory. Journal Physics D: Applied Physics, 2020, 53, 445110.	2.8	9
47	Enhancement of Mechanical Bending Stress Endurance Using an Organic Trench Structure in Foldable Polycrystalline Silicon TFTs. IEEE Electron Device Letters, 2020, 41, 721-724.	3.9	8
48	Degradation Behavior of Etch-Stopper-Layer Structured a-InGaZnO Thin-Film Transistors Under Hot-Carrier Stress and Illumination. IEEE Transactions on Electron Devices, 2021, 68, 556-559.	3.0	8
49	Analysis of Edge Effect Occurring in Non-Volatile Ferroelectric Transistors. IEEE Electron Device Letters, 2021, 42, 315-318.	3.9	7
50	Performance Improvement by Modifying Deposition Temperature in HfZrO_{<i>x</i>} Ferroelectric Memory. IEEE Transactions on Electron Devices, 2021, 68, 3838-3842.	3.0	7
51	Communicationâ€"Effects of Oxygen Concentration Gradient on Resistive Switching Behavior in Oxygen Vacancy-Rich Electrodes. ECS Journal of Solid State Science and Technology, 2016, 5, Q115-Q118.	1.8	6
52	Investigating Material Changes at Different Gadolinium Doping Power Levels in Indium-Tin Oxide Intended for Use as an Insulator in Resistive Switching Memory. IEEE Transactions on Electron Devices, 2019, 66, 2595-2599.	3.0	6
53	The influence of temperature on set voltage for different high resistance state in 1T1R devices. Applied Physics Express, 2019, 12, 024004.	2.4	6
54	Reducing Interface Traps with High Density Hydrogen Treatment to Increase Passivated Emitter Rear Contact Cell Efficiency. Nanoscale Research Letters, 2019, 14, 375.	5.7	6

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55	Modifying Indium-Tin-Oxide by Gas Cosputtering for Use as an Insulator in Resistive Random Access Memory. IEEE Transactions on Electron Devices, 2016, 63, 4288-4294.	3.0	5
56	Reducing operation voltages by introducing a low-kswitching layer in indiumâ€“tin-oxide-based resistance random access memory. Applied Physics Express, 2016, 9, 061501.	2.4	5
57	Investigating the Back-Channel Effect and Asymmetric Degradation Under Self-Heating Stress in Large Size a-InGaZnO TFTs. IEEE Electron Device Letters, 2020, 41, 58-61.	3.9	5
58	Abnormal Two-Stage Degradation on P-Type Low-Temperature Polycrystalline-Silicon Thin-Film Transistor Under Hot Carrier Conditions. IEEE Electron Device Letters, 2022, 43, 721-724.	3.9	5
59	Abnormal hysteresis formation in hump region after positive gate bias stress in low-temperature poly-silicon thin film transistors. Journal Physics D: Applied Physics, 2020, 53, 405104.	2.8	4
60	Improvement of Hafnium Oxide Resistive Memory Performance Through Low-Temperature Supercritical Oxidation Treatments. IEEE Transactions on Electron Devices, 2021, 68, 541-544.	3.0	4
61	Impact of oxygen flow rate on performance of indium-tin-oxide-based RRAMs. Journal Physics D: Applied Physics, 2021, 54, 295103.	2.8	4
62	Impact of AC Stress in Low Temperature Polycrystalline Silicon Thin Film Transistors Produced With Different Excimer Laser Annealing Energies. IEEE Electron Device Letters, 2021, 42, 847-850.	3.9	4
63	Influence of Hot Carriers and Illumination Stress on a-InGaZnO TFTs With Asymmetrical Geometry. IEEE Electron Device Letters, 2020, 41, 745-748.	3.9	3
64	On the Optimization of Performance and Reliability in a-InGaZnO Thin-Film Transistors by Versatile Light Shielding Design. IEEE Transactions on Electron Devices, 2021, 68, 1654-1658.	3.0	3
65	Performance Enhancement of InGaZnO Top-Gate Thin Film Transistor With Low-Temperature High-Pressure Fluorine Treatment. IEEE Electron Device Letters, 2021, 42, 1611-1614.	3.9	3
66	Effect of Lateral Body Terminal on Siliconâ€“Oxideâ€“Nitrideâ€“Oxideâ€“Silicon Thin-Film Transistors. IEEE Electron Device Letters, 2011, 32, 1394-1396.	3.9	2
67	Integrating a Charge Trapping Layer in Passivated Emitter Rear Contact Cell to Enhance Efficiency. IEEE Electron Device Letters, 2018, 39, 983-986.	3.9	2
68	Enhancing gate turn-off thyristor blocking characteristics by low temperature defect passivation technology. Semiconductor Science and Technology, 2021, 36, 085005.	2.0	2
69	Enhancing Reliability and 2 mm-Axial Mechanical Bending Endurance by Gate Insulator Improvements in Flexible Polycrystalline Silicon TFTs. IEEE Transactions on Electron Devices, 2022, 69, 2423-2429.	3.0	2
70	Improved diffusion and storage of lithium ions via recrystallization induced conducting pathways in a Li:Ta₂O₅-based electrolyte for all-solid-state electrochromic devices with enhanced performance. Nanotechnology, 2022, 33, 275711.	2.6	2
71	Thermal Field Effect in Resistive Random Access Memory With Sidewall Structures of Different Thermal Conductivity. IEEE Transactions on Electron Devices, 2022, 69, 3147-3150.	3.0	2
72	Physical Mechanism of the Mechanical Bending of High-Performance Organic TFTs and the Effect of Atmospheric Factors. ACS Applied Electronic Materials, 2022, 4, 3000-3009.	4.3	2

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73	Investigation of the Self-Heating Effect in High Performance Organic TFTs With Multi-Finger Structure. IEEE Electron Device Letters, 2022, 43, 1243-1246.	3.9	2
74	Advanced supercritical fluid technique to reduce amorphous silicon defects in heterojunction solar cells. Semiconductor Science and Technology, 2022, 37, 085011.	2.0	2
75	A universal model for interface-type threshold switching phenomena by comprehensive study of Vanadium oxide-based selector. , 2017, , .		1
76	Interface Defect Shielding of Electron Trapping in a-InGaZnO Thin Film Transistors. IEEE Transactions on Electron Devices, 2020, 67, 3645-3649.	3.0	1
77	Performance and Reliability Optimization of Supercritical-Nitridation-Treated AlGaN/GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2021, 68, 4317-4321.	3.0	1
78	Increasing Controllable Oxygen Ions to Improve Device Performance Using Supercritical Fluid Technique in ZnO-Based Resistive Random Access Memory. IEEE Transactions on Electron Devices, 2022, 69, 127-132.	3.0	1
79	Analysis of Abnormal Current Rise Mechanism in GaN-MIS HEMT With Al₂O₃/Si₃N₄ Gate Insulator Under Hot Switching. IEEE Transactions on Electron Devices, 2022, 69, 4218-4223.	3.0	1
80	Vertical Electric Field-Induced Abnormal Capacitanceâ€“Voltage Electrical Characteristics in a-InGaZnO TFTs. IEEE Transactions on Electron Devices, 2021, 68, 4431-4436.	3.0	0
81	A Method to Measure Polarization Signal of Nanoscale One-Transistor-One-Capacitor Ferroelectric Memory. IEEE Electron Device Letters, 2022, 43, 862-865.	3.9	0