

# Tsung-Ming Tsai

## List of Publications by Year in descending order

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81  
papers

1,996  
citations

279798

23  
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254184

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81  
docs citations

81  
times ranked

1700  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	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
3	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
4	Improved diffusion and storage of lithium ions via recrystallization induced conducting pathways in a Li:Ta <sub>2</sub> O <sub>5</sub> -based electrolyte for all-solid-state electrochromic devices with enhanced performance. Nanotechnology, 2022, 33, 275711.	2.6	2
5	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
6	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
7	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
8	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
9	Advanced supercritical fluid technique to reduce amorphous silicon defects in heterojunction solar cells. Semiconductor Science and Technology, 2022, 37, 085011.	2.0	2
10	Analysis of Abnormal Current Rise Mechanism in GaN-MIS HEMT With Al <sub>2</sub> O <sub>3</sub> /Si <sub>3</sub> N <sub>4</sub> Gate Insulator Under Hot Switching. IEEE Transactions on Electron Devices, 2022, 69, 4218-4223.	3.0	1
11	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
12	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
13	Analysis of Edge Effect Occurring in Non-Volatile Ferroelectric Transistors. IEEE Electron Device Letters, 2021, 42, 315-318.	3.9	7
14	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
15	Impact of oxygen flow rate on performance of indium-tin-oxide-based RRAMs. Journal Physics D: Applied Physics, 2021, 54, 295103.	2.8	4
16	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
17	Enhancing gate turn-off thyristor blocking characteristics by low temperature defect passivation technology. Semiconductor Science and Technology, 2021, 36, 085005.	2.0	2
18	Performance Improvement by Modifying Deposition Temperature in HfZrO <sub>x</sub> Ferroelectric Memory. IEEE Transactions on Electron Devices, 2021, 68, 3838-3842.	3.0	7

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19	Performance and Reliability Optimization of Supercritical-Nitridation-Treated AlGaIn/GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2021, 68, 4317-4321.	3.0	1
20	Vertical Electric Field-Induced Abnormal Capacitance-Voltage Electrical Characteristics in a-InGaZnO TFTs. IEEE Transactions on Electron Devices, 2021, 68, 4431-4436.	3.0	0
21	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
22	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
23	Interface Defect Shielding of Electron Trapping in a-InGaZnO Thin Film Transistors. IEEE Transactions on Electron Devices, 2020, 67, 3645-3649.	3.0	1
24	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
25	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
26	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
27	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
28	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
29	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
30	Investigation on the current conduction mechanism of HfZrO <sub>x</sub> ferroelectric memory. Journal Physics D: Applied Physics, 2020, 53, 445110.	2.8	9
31	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
32	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
33	A Dual-Gate InGaZnO <sub>4</sub> -Based Thin-Film Transistor for High-Sensitivity UV Detection. Advanced Materials Technologies, 2019, 4, 1900106.	5.8	10
34	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
35	The influence of temperature on set voltage for different high resistance state in 1T1R devices. Applied Physics Express, 2019, 12, 024004.	2.4	6
36	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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37	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
38	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
39	Enhancement of Surface Chemical and Physical Properties of Germanium-Sulfur Thin Film Using a Water-Supplemented Carbon Dioxide Supercritical Fluid Treatment Technique. Advanced Materials Interfaces, 2018, 5, 1801105.	3.7	12
40	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
41	Resistance Switching Characteristics Induced by $O_2$ 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
42	Influence of Ammonia on Amorphous Carbon Resistive Random Access Memory. IEEE Electron Device Letters, 2017, 38, 453-456.	3.9	10
43	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
44	Role of $H_2O$ Molecules in Passivation Layer of a-InGaZnO Thin Film Transistors. IEEE Electron Device Letters, 2017, 38, 469-472.	3.9	23
45	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
46	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
47	Functionally Complete Boolean Logic in 1T1R Resistive Random Access Memory. IEEE Electron Device Letters, 2017, 38, 179-182.	3.9	95
48	Solving the Scaling Issue of Increasing Forming Voltage in Resistive Random Access Memory Using High-k Spacer Structure. Advanced Electronic Materials, 2017, 3, 1700171.	5.1	19
49	A universal model for interface-type threshold switching phenomena by comprehensive study of Vanadium oxide-based selector. , 2017, , .		1
50	Super Critical Fluid Technique to Enhance Current Output on Amorphous Silicon-Based Photovoltaic. IEEE Electron Device Letters, 2017, 38, 1401-1404.	3.9	11
51	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
52	Improving Performance by Doping Gadolinium Into the Indium-Tin-Oxide Electrode in $HfO_2$ -Based Resistive Random Access Memory. IEEE Electron Device Letters, 2016, 37, 584-587.	3.9	28
53	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
54	Obtaining Lower Forming Voltage and Self-Compliance Current by Using a Nitride Gas/Indium-Tin Oxide Insulator in Resistive Random Access Memory. IEEE Transactions on Electron Devices, 2016, 63, 4769-4775.	3.0	9

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55	Reducing operation voltages by introducing a low-kswitching layer in indium-tin-oxide-based resistance random access memory. Applied Physics Express, 2016, 9, 061501.	2.4	5
56	Resistive Switching Mechanism of Oxygen-Rich Indium Tin Oxide Resistance Random Access Memory. IEEE Electron Device Letters, 2016, 37, 408-411.	3.9	31
57	Bulk Oxygen Ion Storage in Indium-Tin-Oxide Electrode for Improved Performance of HfO <sub>2</sub> -Based Resistive Random Access Memory. IEEE Electron Device Letters, 2016, 37, 280-283.	3.9	50
58	Communication 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
59	Resistance random access memory. Materials Today, 2016, 19, 254-264.	14.2	391
60	Complementary resistive switching behavior induced by varying forming current compliance in resistance random access memory. Applied Physics Letters, 2015, 106, .	3.3	45
61	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
62	Nitrogen Buffering Effect on Oxygen in Indium-Tin-Oxide-Capped Resistive Random Access Memory With NH <sub>3</sub> Treatment. IEEE Electron Device Letters, 2015, 36, 1138-1141.	3.9	13
63	Physical and chemical mechanisms in oxide-based resistance random access memory. Nanoscale Research Letters, 2015, 10, 120.	5.7	130
64	Improvement of Resistive Switching Characteristic in Silicon Oxide-Based RRAM Through Hydride-Oxidation on Indium Tin Oxide Electrode by Supercritical CO <sub>2</sub> Fluid. IEEE Electron Device Letters, 2015, 36, 558-560.	3.9	25
65	Mechanism of Triple Ions Effect in GeSO Resistance Random Access Memory. IEEE Electron Device Letters, 2015, 36, 552-554.	3.9	19
66	Ultra-violet light enhanced super critical fluid treatment in In-Ga-Zn-O thin film transistor. Applied Physics Letters, 2014, 104, .	3.3	26
67	Controllable Set Voltage in Bilayer ZnO:SiO <sub>2</sub> /ZnO Resistance Random Access Memory by Oxygen Concentration Gradient Manipulation. IEEE Electron Device Letters, 2014, 35, 1227-1229.	3.9	12
68	Temperature-Dependent Instability of Bias Stress in InGaZnO Thin-Film Transistors. IEEE Transactions on Electron Devices, 2014, 61, 2119-2124.	3.0	32
69	Tri-Resistive Switching Behavior of Hydrogen Induced Resistance Random Access Memory. IEEE Electron Device Letters, 2014, 35, 217-219.	3.9	23
70	Characterization of Oxygen Accumulation in Indium-Tin-Oxide for Resistance Random Access Memory. IEEE Electron Device Letters, 2014, 35, 630-632.	3.9	55
71	Low-power bipolar resistive switching TiN/HfO <sub>2</sub> /ITO memory with self-compliance current phenomenon. Applied Physics Express, 2014, 7, 034101.	2.4	70
72	Atomic-level quantized reaction of HfO <sub>x</sub> memristor. Applied Physics Letters, 2013, 102, 172903.	3.3	100

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73	Characteristics of hafnium oxide resistance random access memory with different setting compliance current. Applied Physics Letters, 2013, 103, .	3.3	44
74	Suppress temperature instability of InGaZnO thin film transistors by N <sub>2</sub> O plasma treatment, including thermal-induced hole trapping phenomenon under gate bias stress. Applied Physics Letters, 2012, 100, .	3.3	38
75	Silicon introduced effect on resistive switching characteristics of WOX thin films. Applied Physics Letters, 2012, 100, 022904.	3.3	39
76	Origin of Hopping Conduction in Sn-Doped Silicon Oxide RRAM With Supercritical $\text{CO}_2$ Fluid Treatment. IEEE Electron Device Letters, 2012, 33, 1693-1695.	3.9	45
77	Asymmetric Carrier Conduction Mechanism by Tip Electric Field in $\text{WSiO}_x$ Resistance Switching Device. IEEE Electron Device Letters, 2012, 33, 342-344.	3.9	33
78	Abnormal Subthreshold Leakage Current at High Temperature in InGaZnO Thin-Film Transistors. IEEE Electron Device Letters, 2012, 33, 540-542.	3.9	10
79	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
80	Reducing operation current of Ni-doped silicon oxide resistance random access memory by supercritical CO <sub>2</sub> fluid treatment. Applied Physics Letters, 2011, 99, .	3.3	53
81	Redox Reaction Switching Mechanism in RRAM Device With $\text{Pt/CoSiO}_x/\text{TiN}$ Structure. IEEE Electron Device Letters, 2011, 32, 545-547.	3.9	120