

Stefan Slesazeck

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

108
papers

3,906
citations

33
h-index

60
g-index

117
ext. papers

5,158
ext. citations

5.7
avg, IF

6.05
L-index

#	Paper	IF	Citations
108	Negative capacitance devices: sensitivity analyses of the developed TCAD ferroelectric model for HZO. <i>Journal of Instrumentation</i> , 2022 , 17, C01048	1	1
107	Ferroelectric-based synapses and neurons for neuromorphic computing. <i>Neuromorphic Computing and Engineering</i> , 2022 , 2, 012002		4
106	A multi-pulse wakeup scheme for on-chip operation of devices based on ferroelectric doped HfO ₂ thin films. <i>Applied Physics Letters</i> , 2022 , 120, 022901	3.4	2
105	C-AND: Mixed Writing Scheme for Disturb Reduction in 1T Ferroelectric FET Memory. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2022 , 1-11	3.9	2
104	High-Performance Operation and Solder Reflow Compatibility in BEOL-Integrated 16-Kb HfO ₂ /Si-Based 1T-1C FeRAM Arrays. <i>IEEE Transactions on Electron Devices</i> , 2022 , 1-7	2.9	2
103	MOx in ferroelectric memories 2022 , 245-279		
102	Atomic layer etching of ferroelectric hafnium zirconium oxide thin films enables giant tunneling electroresistance. <i>Applied Physics Letters</i> , 2022 , 120, 122901	3.4	3
101	Antiferroelectric negative capacitance from a structural phase transition in zirconia.. <i>Nature Communications</i> , 2022 , 13, 1228	17.4	4
100	A FeFET-based hybrid memory accessible by content and by address. <i>IEEE Journal on Exploratory Solid-State Computational Devices and Circuits</i> , 2022 , 1-1	2.4	0
99	Graph Coloring via Locally-Active Memristor Oscillatory Networks. <i>Journal of Low Power Electronics and Applications</i> , 2022 , 12, 22	1.7	5
98	Versatile experimental setup for FTJ characterization. <i>Solid-State Electronics</i> , 2022 , 194, 108364	1.7	0
97	TCAD numerical modeling of negative capacitance ferroelectric devices for radiation detection applications. <i>Solid-State Electronics</i> , 2022 , 194, 108341	1.7	1
96	Polarization switching and interface charges in BEOL compatible Ferroelectric Tunnel Junctions 2021 ,		3
95	Demonstration of a p-Type Ferroelectric FET With Immediate Read-After-Write Capability. <i>IEEE Electron Device Letters</i> , 2021 , 42, 1774-1777	4.4	13
94	Reliability aspects of ferroelectric hafnium oxide for application in non-volatile memories 2021 ,		3
93	Next generation ferroelectric materials for semiconductor process integration and their applications. <i>Journal of Applied Physics</i> , 2021 , 129, 100901	2.5	57
92	On Local Activity and Edge of Chaos in a NaMLab Memristor. <i>Frontiers in Neuroscience</i> , 2021 , 15, 651452	5.1	28

91	Ferroelectric Tunneling Junctions for Edge Computing 2021 ,		3
90	FeFET based Logic-in-Memory: an overview 2021 ,		1
89	Perspective on ferroelectric, hafnium oxide based transistors for digital beyond von-Neumann computing. <i>Applied Physics Letters</i> , 2021 , 118, 050501	3-4	11
88	Progress and future prospects of negative capacitance electronics: A materials perspective. <i>APL Materials</i> , 2021 , 9, 020902	5-7	24
87	Impact of area scaling on the ferroelectric properties of back-end of line compatible Hf _{0.5} Zr _{0.5} O ₂ and Si:HfO ₂ -based MFM capacitors. <i>Applied Physics Letters</i> , 2021 , 118, 062904	3-4	9
86	Effect of the Si Doping Content in HfO ₂ Film on the Key Performance Metrics of Ferroelectric FETs. <i>IEEE Transactions on Electron Devices</i> , 2021 , 68, 4773-4779	2-9	3
85	Ferroelectric field-effect transistors based on HfO: a review. <i>Nanotechnology</i> , 2021 , 32,	3-4	29
84	Improved Vertex Coloring With NbO _x Memristor-Based Oscillatory Networks. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2021 , 1-14	3-9	8
83	Ferroelectric transistors with asymmetric double gate for memory window exceeding 12 V and disturb-free read. <i>Nanoscale</i> , 2021 , 13, 16258-16266	7-7	9
82	Memory technology-a primer for material scientists. <i>Reports on Progress in Physics</i> , 2020 , 83, 086501	14.4	32
81	Switching and Charge Trapping in HfO ₂ -based Ferroelectric FETs: An Overview and Potential Applications 2020 ,		3
80	FeFET: A versatile CMOS compatible device with game-changing potential 2020 ,		26
79	Thickness Scaling of AFE-RAM ZrO ₂ Capacitors with High Cycling Endurance and Low Process Temperature 2020 ,		2
78	The Past, the Present, and the Future of Ferroelectric Memories. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 1434-1443	2-9	109
77	A Silicon Nanowire Ferroelectric Field-Effect Transistor. <i>Advanced Electronic Materials</i> , 2020 , 6, 1901244	6.4	16
76	Interplay Between Switching and Retention in HfO ₂ -Based Ferroelectric FETs. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 3466-3471	2-9	22
75	Compact FeFET Circuit Building Blocks for Fast and Efficient Nonvolatile Logic-in-Memory. <i>IEEE Journal of the Electron Devices Society</i> , 2020 , 8, 748-756	2-3	19
74	Nonvolatile Field-Effect Transistors Using Ferroelectric-Doped HfO ₂ Films. <i>Topics in Applied Physics</i> , 2020 , 79-96	0.5	1

73	FeFETs for Neuromorphic Systems. <i>Topics in Applied Physics</i> , 2020 , 399-411	0.5	1
72	Switching in Nanoscale Hafnium Oxide-Based Ferroelectric Transistors. <i>Topics in Applied Physics</i> , 2020 , 97-108	0.5	1
71	Reconfigurable frequency multiplication with a ferroelectric transistor. <i>Nature Electronics</i> , 2020 , 3, 391-394	18	18
70	Built-in bias fields for retention stabilisation in hafnia-based ferroelectric tunnel junctions. <i>Electronics Letters</i> , 2020 , 56, 1108-1110	1.1	8
69	Flexible Memory, Bit-Passing and Mixed Logic/Memory Operation of two Intercoupled FeFET Arrays 2020 ,		1
68	Impact of Read Operation on the Performance of HfO ₂ -Based Ferroelectric FETs. <i>IEEE Electron Device Letters</i> , 2020 , 41, 1420-1423	4.4	24
67	Hafnia-Based Double-Layer Ferroelectric Tunnel Junctions as Artificial Synapses for Neuromorphic Computing. <i>ACS Applied Electronic Materials</i> , 2020 , 2, 4023-4033	4	38
66	Frequency Mixing with HfO-Based Ferroelectric Transistors. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 44919-44925	9.5	1
65	Investigation of Accumulative Switching in Ferroelectric FETs: Enabling Universal Modeling of the Switching Behavior. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 5804-5809	2.9	17
64	Inherent Charge-Sharing-Free Dynamic Logic Gates Employing Transistors With Multiple Independent Inputs. <i>IEEE Journal of the Electron Devices Society</i> , 2020 , 8, 740-747	2.3	6
63	Nanoscale resistive switching memory devices: a review. <i>Nanotechnology</i> , 2019 , 30, 352003	3.4	101
62	Multiple slopes in the negative differential resistance region of NbO _x -based threshold switches. <i>Journal Physics D: Applied Physics</i> , 2019 , 52, 325104	3	10
61	Improvement of NbO _x -based threshold switching devices by implementing multilayer stacks. <i>Semiconductor Science and Technology</i> , 2019 , 34, 075005	1.8	4
60	Negative Capacitance in HfO ₂ - and ZrO ₂ -Based Ferroelectrics 2019 , 473-493		3
59	Pattern Formation With Locally Active S-Type NbO _x Memristors. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2019 , 66, 2627-2638	3.9	22
58	Ferroelectric FETs With 20-nm-Thick HfO ₂ Layer for Large Memory Window and High Performance. <i>IEEE Transactions on Electron Devices</i> , 2019 , 66, 3828-3833	2.9	71
57	Uniting The Trinity of Ferroelectric HfO ₂ Memory Devices in a Single Memory Cell 2019 ,		12
56	Direct Correlation of Ferroelectric Properties and Memory Characteristics in Ferroelectric Tunnel Junctions. <i>IEEE Journal of the Electron Devices Society</i> , 2019 , 7, 1175-1181	2.3	46

55	2019,		17
54	Negative Capacitance for Electrostatic Supercapacitors. <i>Advanced Energy Materials</i> , 2019 , 9, 1901154	21.8	31
53	Ferroelectric Hf1-xZrxO2 memories: device reliability and depolarization fields 2019,		15
52	A 2TnC ferroelectric memory gain cell suitable for compute-in-memory and neuromorphic application 2019,		6
51	Dynamic modeling of hysteresis-free negative capacitance in ferroelectric/dielectric stacks under fast pulsed voltage operation 2019,		1
50	2019,		24
49	Ultra-dense co-integration of FeFETs and CMOS logic enabling very-fine grained Logic-in-Memory 2019,		6
48	Recovery of Cycling Endurance Failure in Ferroelectric FETs by Self-Heating. <i>IEEE Electron Device Letters</i> , 2019 , 40, 216-219	4.4	37
47	Unveiling the double-well energy landscape in a ferroelectric layer. <i>Nature</i> , 2019 , 565, 464-467	50.4	190
46	Random Number Generation Based on Ferroelectric Switching. <i>IEEE Electron Device Letters</i> , 2018 , 39, 135-138	4.4	43
45	Comparative Study of Reliability of Ferroelectric and Anti-Ferroelectric Memories. <i>IEEE Transactions on Device and Materials Reliability</i> , 2018 , 18, 154-162	1.6	42
44	Interplay between ferroelectric and resistive switching in doped crystalline HfO2. <i>Journal of Applied Physics</i> , 2018 , 123, 134102	2.5	33
43	Demonstration of versatile nonvolatile logic gates in 28nm HKMG FeFET technology 2018,		13
42	Built-In Bias Generation in Anti-Ferroelectric Stacks: Methods and Device Applications. <i>IEEE Journal of the Electron Devices Society</i> , 2018 , 6, 1019-1025	2.3	29
41	Embedding hafnium oxide based FeFETs in the memory landscape 2018,		11
40	Hafnium oxide based ferroelectric devices for memories and beyond 2018,		2
39	Prospects for energy-efficient edge computing with integrated HfO2-based ferroelectric devices 2018,		3
38	Mimicking biological neurons with a nanoscale ferroelectric transistor. <i>Nanoscale</i> , 2018 , 10, 21755-21763	37.7	117

37	Demonstration of High-speed Hysteresis-free Negative Capacitance in Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ 2018,		22
36	Ferroelectric Tunnel Junctions based on Ferroelectric-Dielectric Hf _{0.5} Zr _{0.5} O ₂ / Al ₂ O ₃ Capacitor Stacks 2018,		22
35	On the stabilization of ferroelectric negative capacitance in nanoscale devices. <i>Nanoscale</i> , 2018 , 10, 10891-10899		22
34	On the relationship between field cycling and imprint in ferroelectric Hf _{0.5} Zr _{0.5} O ₂ . <i>Journal of Applied Physics</i> , 2018 , 123, 204101	2.5	55
33	Ferroelectric negative capacitance domain dynamics. <i>Journal of Applied Physics</i> , 2018 , 123, 184101	2.5	50
32	Accumulative Polarization Reversal in Nanoscale Ferroelectric Transistors. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 23997-24002	9.5	58
31	Switching Kinetics in Nanoscale Hafnium Oxide Based Ferroelectric Field-Effect Transistors. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 3792-3798	9.5	179
30	Reliability Comparison of ZrO ₂ -Based DRAM High-k Dielectrics Under DC and AC Stress. <i>IEEE Transactions on Device and Materials Reliability</i> , 2017 , 17, 324-330	1.6	5
29	Novel ferroelectric FET based synapse for neuromorphic systems 2017,		121
28	A FeFET based super-low-power ultra-fast embedded NVM technology for 22nm FDSOI and beyond 2017,		121
27	Reconfigurable NAND/NOR logic gates in 28 nm HKMG and 22 nm FD-SOI FeFET technology 2017,		39
26	Direct Observation of Negative Capacitance in Polycrystalline Ferroelectric HfO ₂ . <i>Advanced Functional Materials</i> , 2016 , 26, 8643-8649	15.6	168
25	Physical Mechanisms behind the Field-Cycling Behavior of HfO ₂ -Based Ferroelectric Capacitors. <i>Advanced Functional Materials</i> , 2016 , 26, 4601-4612	15.6	397
24	Impact of charge trapping on the ferroelectric switching behavior of doped HfO ₂ . <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016 , 213, 270-273	1.6	21
23	Analysis of V _{th} variability in NbO _x -based threshold switches 2016,		4
22	2016,		48
21	A 28nm HKMG super low power embedded NVM technology based on ferroelectric FETs 2016,		129
20	Correlation between the macroscopic ferroelectric material properties of Si:HfO ₂ and the statistics of 28 nm FeFET memory arrays. <i>Ferroelectrics</i> , 2016 , 497, 42-51	0.6	19

19	Materials for DRAM Memory Cell Applications. <i>Materials and Energy</i> , 2016 , 369-401		2
18	Nonlinear Dynamics of a Locally-Active Memristor. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2015 , 62, 1165-1174	3.9	92
17	Physical model of threshold switching in NbO ₂ based memristors. <i>RSC Advances</i> , 2015 , 5, 102318-102323	3.7	100
16	Evidence of single domain switching in hafnium oxide based FeFETs: Enabler for multi-level FeFET memory cells 2015 ,		64
15	Integration of niobium oxide-based resistive switching cells with different select properties into nanostructured cross-bar arrays. <i>Semiconductor Science and Technology</i> , 2015 , 30, 115014	1.8	7
14	Local ion irradiation-induced resistive threshold and memory switching in Nb ₂ O ₅ /NbO(x) films. <i>ACS Applied Materials & Interfaces</i> , 2014 , 6, 17474-80	9.5	36
13	Origin of the endurance degradation in the novel HfO ₂ -based 1T ferroelectric non-volatile memories 2014 ,		24
12	Doped Hafnium Oxide [An Enabler for Ferroelectric Field Effect Transistors. <i>Advances in Science and Technology</i> , 2014 , 95, 136-145	0.1	51
11	Influence of nitrogen trap states on the electronic properties of high-k metal gate transistors 2014 ,		3
10	Bipolar electric-field enhanced trapping and detrapping of mobile donors in BiFeO ₃ memristors. <i>ACS Applied Materials & Interfaces</i> , 2014 , 6, 19758-65	9.5	52
9	Impact of Scaling on the Performance of HfO ₂ -Based Ferroelectric Field Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , 2014 , 61, 3699-3706	2.9	96
8	Unfolding the Threshold Switching Behavior of a Memristor. <i>Communications in Computer and Information Science</i> , 2014 , 156-164	0.3	5
7	Performance investigation and optimization of Si:HfO ₂ FeFETs on a 28 nm bulk technology 2013 ,		11
6	Room temperature fabricated NbO _x /Nb ₂ O ₅ memory switching device with threshold switching effect 2013 ,		10
5	Filamentary resistive switching in amorphous and polycrystalline Nb ₂ O ₅ thin films. <i>Solid-State Electronics</i> , 2012 , 72, 73-77	1.7	35
4	Reconfigurable silicon nanowire transistors. <i>Nano Letters</i> , 2012 , 12, 119-24	11.5	242
3	The influence of crystallinity on the resistive switching behavior of TiO ₂ . <i>Microelectronic Engineering</i> , 2011 , 88, 1148-1151	2.5	24
2	2022 roadmap on neuromorphic computing and engineering. <i>Neuromorphic Computing and Engineering</i> ,		24

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Ferroelectric/Dielectric Heterostructures. *Advanced Functional Materials*, 2108494

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