

Thomas Kämpfe

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4632638/publications.pdf>

Version: 2024-02-01

103
papers

2,023
citations

361413

20
h-index

315739

38
g-index

106
all docs

106
docs citations

106
times ranked

1281
citing authors

#	ARTICLE	IF	CITATIONS
1	High Endurance Ferroelectric Hafnium Oxide-Based FeFET Memory Without Retention Penalty. IEEE Transactions on Electron Devices, 2018, 65, 3769-3774.	3.0	191
2	Silicon doped hafnium oxide (HSO) and hafnium zirconium oxide (HZO) based FeFET: A material relation to device physics. Applied Physics Letters, 2018, 112, .	3.3	101
3	Enhancing the Domain Wall Conductivity in Lithium Niobate Single Crystals. ACS Nano, 2017, 11, 4816-4824.	14.6	99
4	Optical three-dimensional profiling of charged domain walls in ferroelectrics by Cherenkov second-harmonic generation. Physical Review B, 2014, 89, .	3.2	95
5	Local crystallographic phase detection and texture mapping in ferroelectric Zr doped HfO ₂ films by transmission-EBSD. Applied Physics Letters, 2019, 115, .	3.3	84
6	Back-End-of-Line Compatible Low-Temperature Furnace Anneal for Ferroelectric Hafnium Zirconium Oxide Formation. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900840.	1.8	76
7	FeFET: A versatile CMOS compatible device with game-changing potential. , 2020, , .		72
8	A Multilevel FeFET Memory Device based on Laminated HSO and HZO Ferroelectric Layers for High-Density Storage. , 2019, , .		65
9	Layer thickness scaling and wake-up effect of pyroelectric response in Si-doped HfO ₂ . Applied Physics Letters, 2018, 112, .	3.3	59
10	Ferroelectric Field Effect Transistors as a Synapse for Neuromorphic Application. IEEE Transactions on Electron Devices, 2021, 68, 2295-2300.	3.0	55
11	On the Origin of Wake-Up and Antiferroelectric-Like Behavior in Ferroelectric Hafnium Oxide. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100086.	2.4	54
12	Ferroelectric and pyroelectric properties of polycrystalline La-doped HfO ₂ thin films. Applied Physics Letters, 2019, 114, .	3.3	52
13	Structural and Electrical Comparison of Si and Zr Doped Hafnium Oxide Thin Films and Integrated FeFETs Utilizing Transmission Kikuchi Diffraction. Nanomaterials, 2020, 10, 384.	4.1	50
14	Ultra-Low Power Flexible Precision FeFET Based Analog In-Memory Computing. , 2020, , .		44
15	Real-time three-dimensional profiling of ferroelectric domain walls. Applied Physics Letters, 2015, 107, .	3.3	37
16	A Scalable Design of Multi-Bit Ferroelectric Content Addressable Memory for Data-Centric Computing. , 2020, , .		36
17	Piezoelectric Response of Polycrystalline Silicon-Doped Hafnium Oxide Thin Films Determined by Rapid Temperature Cycles. Advanced Electronic Materials, 2020, 6, 1901015.	5.1	32
18	A Fully Integrated Ferroelectric Thin-Film Transistor â€“ Influence of Device Scaling on Threshold Voltage Compensation in Displays. Advanced Electronic Materials, 2021, 7, 2100082.	5.1	27

#	ARTICLE	IF	CITATIONS
19	In-Memory Nearest Neighbor Search with FeFET Multi-Bit Content-Addressable Memories. , 2021, , .		26
20	In Situ 3D Observation of the Domain Wall Dynamics in a Triglycine Sulfate Single Crystal upon Ferroelectric Phase Transition. Physica Status Solidi - Rapid Research Letters, 2017, 11, 1700267.	2.4	25
21	Impact of the SiO ₂ interface layer on the crystallographic texture of ferroelectric hafnium oxide. Applied Physics Letters, 2021, 118, .	3.3	25
22	Influence of Annealing Temperature on the Structural and Electrical Properties of Si-Doped Ferroelectric Hafnium Oxide. ACS Applied Electronic Materials, 2021, 3, 4115-4120.	4.3	23
23	Theory and Experiment of Antiferroelectric (AFE) Si-Doped Hafnium Oxide (HSO) Enhanced Floating-Gate Memory. IEEE Transactions on Electron Devices, 2019, 66, 3356-3364.	3.0	22
24	Doping Ferroelectric Hafnium Oxide by in-Situ Precursor Mixing. ACS Applied Electronic Materials, 2019, 1, 2612-2618.	4.3	22
25	Pyroelectric Energy Conversion in Doped Hafnium Oxide (HfO ₂) Thin Films on Area-Enhanced Substrates. Energy Technology, 2019, 7, 1900515.	3.8	21
26	Multiphoton photoluminescence contrast in switched Mg:LiNbO ₃ and Mg:LiTaO ₃ single crystals. Applied Physics Letters, 2014, 105, .	3.3	20
27	Random and Systematic Variation in Nanoscale Hf _{0.5} Zr _{0.5} O ₂ Ferroelectric FinFETs: Physical Origin and Neuromorphic Circuit Implications. Frontiers in Nanotechnology, 2022, 3, .	4.8	20
28	Frequency domain analysis of pyroelectric response in silicon-doped hafnium oxide (HfO ₂) thin films. Applied Physics Letters, 2018, 113, .	3.3	19
29	Tunable Non-Volatile Memory by Conductive Ferroelectric Domain Walls in Lithium Niobate Thin Films. Crystals, 2020, 10, 804.	2.2	19
30	Electric field-induced crystallization of ferroelectric hafnium zirconium oxide. Scientific Reports, 2021, 11, 22266.	3.3	19
31	Optimizing Ferroelectric and Interface Layers in HZO-Based FTJs for Neuromorphic Applications. IEEE Transactions on Electron Devices, 2022, 69, 808-815.	3.0	19
32	Integration of Hafnium Oxide on Epitaxial SiGe for p-type Ferroelectric FET Application. IEEE Electron Device Letters, 2020, 41, 1762-1765.	3.9	18
33	Enhanced pyroelectric response at morphotropic and field-induced phase transitions in ferroelectric hafnium oxide thin films. APL Materials, 2021, 9, .	5.1	17
34	Multiphoton-induced luminescence contrast between antiparallel ferroelectric domains in Mg-doped LiNbO ₃ . Journal of Applied Physics, 2014, 115, .	2.5	16
35	Polarization driven conductance variations at charged ferroelectric domain walls. Nanoscale, 2017, 9, 10933-10939.	5.6	16
36	FeFET Multi-Bit Content-Addressable Memories for In-Memory Nearest Neighbor Search. IEEE Transactions on Computers, 2022, 71, 2565-2576.	3.4	16

#	ARTICLE	IF	CITATIONS
37	Dipole-Tunneling Model from Asymmetric Domain-Wall Conductivity in LiNbO_3 Single Crystals. <i>Physical Review Applied</i> , 2018, 10, .	3.8	14
38	Quantifying non-centrosymmetric orthorhombic phase fraction in 10-nm ferroelectric $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ films. <i>Applied Physics Letters</i> , 2020, 117, .	3.3	14
39	A Study on the Temperature-Dependent Operation of Fluorite-Structure-Based Ferroelectric HfO_2 Memory FeFET: A Temperature-Modulated Operation. <i>IEEE Transactions on Electron Devices</i> , 2020, 67, 2793-2799.	3.0	13
40	A FeFET with a novel MFMFIS gate stack: towards energy-efficient and ultrafast NVMs for neuromorphic computing. <i>Nanotechnology</i> , 2021, 32, 425201.	2.6	13
41	Energy Harvesting in the Back-End of Line with CMOS Compatible Ferroelectric Hafnium Oxide. , 2020, , .		13
42	Anti-ferroelectric $\text{ZrO}_2/\text{HfO}_2$, an enabler for low power non-volatile 1T-1C and 1T random access memories. , 2017, , .		12
43	Barrier breakdown mechanism in nano-scale perpendicular magnetic tunnel junctions with ultrathin MgO barrier. <i>AIP Advances</i> , 2018, 8, .	1.3	12
44	Polaron-Mediated Luminescence in Lithium Niobate and Lithium Tantalate and Its Domain Contrast. <i>Crystals</i> , 2018, 8, 214.	2.2	12
45	A Study on the Temperature-Dependent Operation of Fluorite-Structure-Based Ferroelectric HfO_2 Memory FeFET: Pyroelectricity and Reliability. <i>IEEE Transactions on Electron Devices</i> , 2020, 67, 2981-2987.	3.0	12
46	Assessment of conduction mechanisms through MgO ultrathin barriers in $\text{CoFeB}/\text{MgO}/\text{CoFeB}$ perpendicular magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2019, 114, .	3.3	11
47	Furnace annealed HfO_2 -Films for the Integration of Ferroelectric Functionalities into the BEoL. , 2020, , .		11
48	Substrate-dependent differences in ferroelectric behavior and phase diagram of Si-doped hafnium oxide. <i>Journal of Materials Research</i> , 2021, 36, 4370.	2.6	11
49	Tuning Hybrid Ferroelectric and Antiferroelectric Stacks for Low Power FeFET and FeRAM Applications by Using Laminated HSO and HZO films. <i>Advanced Electronic Materials</i> , 2022, 8, 2100837.	5.1	11
50	Principles and Challenges for Binary Oxide Based Ferroelectric Memory FeFET. , 2019, , .		10
51	240-GHz Four-Channel Power-Tuning Heterodyne Sensing Readout System With Reflection and Transmission Measurements in a 130-nm SiGe BiCMOS Technology. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2019, 67, 5296-5306.	4.6	10
52	The electrocaloric effect in doped hafnium oxide: Comparison of direct and indirect measurements. <i>Applied Physics Letters</i> , 2020, 117, .	3.3	10
53	Empirical Large-Signal Modeling of mm-Wave FDSOI CMOS Based on Angelov Model. <i>IEEE Transactions on Electron Devices</i> , 2021, 68, 1446-1453.	3.0	10
54	Tunability of Ferroelectric Hafnium Zirconium Oxide for Varactor Applications. <i>IEEE Transactions on Electron Devices</i> , 2021, 68, 5269-5276.	3.0	10

#	ARTICLE	IF	CITATIONS
55	FELIX: A Ferroelectric FET Based Low Power Mixed-Signal In-Memory Architecture for DNN Acceleration. Transactions on Embedded Computing Systems, 2022, 21, 1-25. Time-resolved photoluminescence spectroscopy of NbO_x	2.9	10
56	NbO_x polarons in NbO_x . Physical Review B, 2016, 93, .	3.2	9
57	Integration of BEoL Compatible 1T1C FeFET Memory Into an Established CMOS Technology. , 2022, , .		9
58	Bending Resistant Multibit Memristor for Flexible Precision Inference Engine Application. IEEE Transactions on Electron Devices, 2022, 69, 4737-4743.	3.0	9
59	A Tunable mmWave Band-Pass Filter Based on Ferroelectric Hafnium Zirconium Oxide Varactors. , 2019, , .		8
60	A Novel Hybrid High-Speed and Low Power Antiferroelectric HSO Boosted Charge Trap Memory for High-Density Storage. , 2020, , .		8
61	Charge Pumping and Flicker Noise-based Defect Characterization in Ferroelectric FETs. , 2020, , .		8
62	Endurance improvements and defect characterization in ferroelectric FETs through interface fluorination. , 2022, , .		8
63	A Local Superlens. ACS Photonics, 2016, 3, 20-26.	6.6	7
64	Bottom-Up Assembly of Molecular Nanostructures by Means of Ferroelectric Lithography. Langmuir, 2017, 33, 475-484.	3.5	7
65	Measurement of surface acoustic wave resonances in ferroelectric domains by microwave microscopy. Journal of Applied Physics, 2017, 122, 074101.	2.5	7
66	DC-110 GHz Characterization of $22\text{FDX}\hat{\text{A}}^\circ$ FDSOI Transistors for 5G Transmitter Front-End. , 2019, , .		7
67	Impact of Ferroelectric Wakeup on Reliability of Laminate based Si-doped Hafnium Oxide (HSO) FeFET Memory Cells. , 2020, , .		7
68	Impact of the Ferroelectric Stack Lamination in Si Doped Hafnium Oxide (HSO) and Hafnium Zirconium Oxide (HZO) Based FeFETs: Toward High-Density Multi-Level Cell and Synaptic Storage. Electronic Materials, 2021, 2, 344-369.	1.9	7
69	Study of Nanosecond Laser Annealing on Silicon Doped Hafnium Oxide Film Crystallization and Capacitor Reliability. , 2022, , .		7
70	The annealing effect on memory state stability and interlayer coupling in perpendicular magnetic tunnel junctions with ultrathin MgO barrier. Journal of Magnetism and Magnetic Materials, 2019, 477, 142-146.	2.3	6
71	W-Band Noise Characterization with Back-Gate Effects for Advanced 22nm FDSOI mm-Wave MOSFETs. , 2020, , .		6
72	240-GHz Reflectometer-Based Dielectric Sensor With Integrated Transducers in a 130-nm SiGe BiCMOS Technology. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 1027-1035.	4.6	6

#	ARTICLE	IF	CITATIONS
73	Multi-Level Switching and Reversible Current Driven Domain-Wall Motion in Single CoFeB/MgO/CoFeB-Based Perpendicular Magnetic Tunnel Junctions. <i>Advanced Electronic Materials</i> , 2021, 7, 2000976.	5.1	6
74	A Ferroelectric FET Based In-memory Architecture for Multi-Precision Neural Networks. , 2020, , .		6
75	Assessment of a Thick-Oxide Transistor from the 22FDX [®] Platform for 5G NR sub-6 GHz FEMs. , 2019, , .		5
76	Efficient FeFET Crossbar Accelerator for Binary Neural Networks. , 2020, , .		5
77	Impact of the interface layer on the cycling behaviour and retention of ferroelectric hafnium oxide. <i>MRS Advances</i> , 2021, 6, 525-529.	0.9	5
78	Enabling Ferroelectric Memories in BEoL - towards advanced neuromorphic computing architectures. , 2021, , .		5
79	RF-Characterization of HZO Thin Film Varactors. <i>Crystals</i> , 2021, 11, 980.	2.2	5
80	Impact of Stack Structure Control and Ferroelectric Material Optimization in Novel Laminate HSO and HZO MFMIS FeFET. , 2022, , .		5
81	Small-Signal Modeling of mm-Wave MOSFET up to 110 GHz in 22nm FDSOI Technology. , 2019, , .		4
82	480-GHz Sensor With Subharmonic Mixer and Integrated Transducer in a 130-nm SiGe BiCMOS Technology. <i>IEEE Microwave and Wireless Components Letters</i> , 2020, 30, 908-911.	3.2	4
83	Influence of antiferroelectric-like behavior on tuning properties of ferroelectric HZO-based varactors. <i>MRS Advances</i> , 2021, 6, 530-534.	0.9	4
84	Impact of the Nonlinear Dielectric Hysteresis Properties of a Charge Trap Layer in a Novel Hybrid High-Speed and Low-Power Ferroelectric or Antiferroelectric HSO/HZO Boosted Charge Trap Memory. <i>IEEE Transactions on Electron Devices</i> , 2021, 68, 2098-2106.	3.0	3
85	Process influences on the microstructure of BEoL integrated ferroelectric hafnium zirconium oxide. , 2021, , .		3
86	On the Origin of Wake-Up and Antiferroelectric-Like Behavior in Ferroelectric Hafnium Oxide. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021, 15, 2170022.	2.4	3
87	Heavy Ion Irradiation Effects on Structural and Ferroelectric Properties of HfO ₂ Films. , 2020, , .		3
88	207-257 GHz Integrated Sensing Readout System with Transducer in a 130-nm SiGe BiCMOS Technology. , 2019, , .		2
89	Microstructural implications for neuromorphic synapses based on ferroelectric hafnium oxide. , 2021, , .		2
90	The effect of temperature on the ferroelectric properties of Hafnium Zirconium Oxide MFM thin-film varactors. , 2021, , .		2

#	ARTICLE	IF	CITATIONS
91	Impact of Channel Implant Variation on RTN and Flicker Noise. , 2020, , .		2
92	A highly linear 79 GHz Low-Noise Amplifier for Civil-Automotive Radars in 22 nm FD-SOI CMOS with -6 dBm iP_{1dB} and 5 dB NF. , 2022, , .		2
93	Upconversion photoluminescence of epitaxial Yb ³⁺ /Er ³⁺ codoped ferroelectric Pb(Zr,Ti)O ₃ films on silicon substrates. Thin Solid Films, 2016, 607, 32-35.	1.8	1
94	240-GHz Reflectometer with Integrated Transducer for Dielectric Spectroscopy in a 130-nm SiGe BiCMOS Technology. , 2020, , .		1
95	Ferroelectric and Antiferroelectric Hf/Zr oxide films: past, present and future. , 2021, , .		1
96	Large-Signal Modeling for Nonlinear Analysis of Experimental Devices in 22nm FDSOI Technology. , 2022, , .		1
97	Analysis of RF Stress Influence on Large-Signal Performance of 22nm FDSOI CMOS Transistors utilizing Waveform Measurement. , 2022, , .		1
98	Tuning Domain Wall Conductance in Lithium Niobate Thin-Films. , 2020, , .		0
99	6. Optical antennae for near-field induced nonlinear photochemical reactions of photolabile azo- and amine groups. , 2015, , 267-282.		0
100	Investigation of Switching Characteristics for Silicon Doped Hafnium Oxide FeFET. , 2018, , .		0
101	Exploiting FeFET Switching Stochasticity for Low-Power Reconfigurable Physical Unclonable Function. , 2021, , .		0
102	Exploiting FeFET Switching Stochasticity for Low-Power Reconfigurable Physical Unclonable Function. , 2021, , .		0
103	Seebeck effect and Joule heating in CoFeB/MgO/CoFeB-based perpendicular magnetic tunnel junctions with low resistance area product. Journal Physics D: Applied Physics, 2022, 55, 265302.	2.8	0