H J Barnaby

List of Publications by Year
in descending order

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100	2,451	236925 25	214800 47
papers	citations	h-index	g-index

102	102	102	1946
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Radiation Hardened Millimeter-Wave Receiver Implemented in 90-nm, SiGe HBT Technology. IEEE Transactions on Nuclear Science, 2022, 69, 2154-2161.	2.0	2
2	Single-Event Effects Induced by Heavy Ions in SONOS Charge Trapping Memory Arrays. IEEE Transactions on Nuclear Science, 2022, 69, 406-413.	2.0	3
3	Measuring and Modeling Single Event Transients in 12-nm Inverters. IEEE Transactions on Nuclear Science, 2022, 69, 414-421.	2.0	5
4	A Soft-Error Hardened by Design Microprocessor Implemented on Bulk 12-nm FinFET CMOS. IEEE Transactions on Nuclear Science, 2022, 69, 1602-1609.	2.0	1
5	Multiscale System Modeling of Single-Event-Induced Faults in Advanced Node Processors. IEEE Transactions on Nuclear Science, 2021, 68, 980-990.	2.0	3
6	Investigating Heavy-Ion Effects on 14-nm Process FinFETs: Displacement Damage Versus Total Ionizing Dose. IEEE Transactions on Nuclear Science, 2021, 68, 724-732.	2.0	8
7	Total Ionizing Dose Effects on Multistate HfOâ‚“-Based RRAM Synaptic Array. IEEE Transactions on Nuclear Science, 2021, 68, 756-761.	2.0	6
8	Editorial Conference Comments by the General Chair. IEEE Transactions on Nuclear Science, 2021, 68, 489-491.	2.0	1
9	Ionizing Radiation Effects in SONOS-Based Neuromorphic Inference Accelerators. IEEE Transactions on Nuclear Science, 2021, 68, 762-769.	2.0	2
10	Analysis of SEGR in Silicon Planar Gate Super-Junction Power MOSFETs. IEEE Transactions on Nuclear Science, 2021, 68, 611-616.	2.0	17
11	Evidence of Interface Trap Build-Up in Irradiated 14-nm Bulk FinFET Technologies. IEEE Transactions on Nuclear Science, 2021, 68, 671-676.	2.0	4
12	The viability of analog-based accelerators for neuromorphic computing: a survey. Neuromorphic Computing and Engineering, 2021, 1, 012001.	5.9	16
13	Single-Event Gate Rupture Hardened Structure for High-Voltage Super-Junction Power MOSFETs. IEEE Transactions on Electron Devices, 2021, 68, 4004-4009.	3.0	8
14	BJTs in Space: ELDRS Experiment on NASA Space Environment Testbed. , 2021, , .		3
15	Array-Level Programming of 3-Bit per Cell Resistive Memory and Its Application for Deep Neural Network Inference. IEEE Transactions on Electron Devices, 2020, 67, 4621-4625.	3.0	22
16	Total Dose Effects on Negative and Positive Low-Dropout Linear Regulators. IEEE Transactions on Nuclear Science, 2020, 67, 1332-1338.	2.0	6
17	Simulation of Transistor-Level Radiation Effects on System-Level Performance Parameters. IEEE Transactions on Nuclear Science, 2019, 66, 1634-1641.	2.0	5
18	TCAD Model for Ag-GeSe3-Ni CBRAM Devices. , 2019, , .		0

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19	Evaluation of Single Event Effects in SRAM and RRAM Based Neuromorphic Computing System for Inference. , 2019, , .		2
20	Monolithically Integrated RRAM- and CMOS-Based In-Memory Computing Optimizations for Efficient Deep Learning. IEEE Micro, 2019, 39, 54-63.	1.8	65
21	Evaluation of Radiation Effects in RRAM-Based Neuromorphic Computing System for Inference. IEEE Transactions on Nuclear Science, 2019, 66, 97-103.	2.0	14
22	Multiscale Modeling of Total Ionizing Dose Effects in Commercial-off-the-Shelf Parts in Bipolar Technologies. IEEE Transactions on Nuclear Science, 2019, 66, 190-198.	2.0	9
23	Failure Thresholds in CBRAM Due to Total Ionizing Dose and Displacement Damage Effects. IEEE Transactions on Nuclear Science, 2019, 66, 69-76.	2.0	2
24	Training a Neural Network on Analog TaO_{<italic>x</italic>} ReRAM Devices Irradiated With Heavy Ions: Effects on Classification Accuracy Demonstrated With CrossSim. IEEE Transactions on Nuclear Science, 2019, 66, 54-60.	2.0	8
25	The Sensitive Region of Displacement Damage in LPNP Induced by Various Charged Particles. , 2019, , .		0
26	Temperature Response on NPN and PNP Bipolar Junction Transistors after Total Ionizing Dose Irradiation Exposure. , 2019, , .		1
27	Proton Beam Effects on Geâ€“Se/Ag Thin Films. Physica Status Solidi (B): Basic Research, 2018, 255, 1700453.	1.5	4
28	Impact Ionization and Interface Trap Generation in 28-nm MOSFETs at Cryogenic Temperatures. IEEE Transactions on Device and Materials Reliability, 2018, 18, 456-462.	2.0	1
29	Hydrogen Soaking, Displacement Damage Effects, and Charge Yield in Gated Lateral Bipolar Junction Transistors. IEEE Transactions on Nuclear Science, 2018, 65, 1271-1276.	2.0	12
30	<italic>In Situ</italic> Synaptic Programming of CBRAM in an Ionizing Radiation Environment. IEEE Transactions on Nuclear Science, 2018, 65, 192-199.	2.0	5
31	Improved Model for Excess Base Current in Irradiated Lateral p-n-p Bipolar Junction Transistors. IEEE Transactions on Nuclear Science, 2018, 65, 1488-1495.	2.0	14
32	Bias temperature instability model using dynamic defect potential for predicting CMOS aging. Journal of Applied Physics, 2018, 123, .	2.5	1
33	Resistance State Locking in CBRAM Cells Due to Displacement Damage Effects. IEEE Transactions on Nuclear Science, 2017, , 1-1.	2.0	5
34	Dependence of Ideality Factor in Lateral PNP Transistors on Surface Carrier Concentration. IEEE Transactions on Nuclear Science, 2017, , 1-1.	2.0	12
35	Effects of Channel Implant Variation on Radiation-Induced Edge Leakage Currents in n-Channel MOSFETs. IEEE Transactions on Nuclear Science, 2017, , 1-1.	2.0	14
36	SiO2 based conductive bridging random access memory. Journal of Electroceramics, 2017, 39, 109-131.	2.0	32

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37	Total-Ionizing-Dose Effects on Resistance Stability of Programmable Metallization Cell Based Memory and Selectors. IEEE Transactions on Nuclear Science, 2017, 64, 269-276.	2.0	11
38	Low-Temperature Characterization of Cuâ€"Cu:Silica-Based Programmable Metallization Cell. IEEE Electron Device Letters, 2017, 38, 1244-1247.	3.9	15
39	Review of radiation effects on ReRAM devices and technology. Semiconductor Science and Technology, 2017, 32, 083002.	2.0	39
40	Displacement Damage in Bipolar Junction Transistors: Beyond Messenger-Spratt. IEEE Transactions on Nuclear Science, 2017, 64, 149-155.	2.0	26
41	A Comparative Study on TID Influenced Lateral Diffusion of Group 11 Metals into GexS_{1-x}and Ge_xSe_{1-x} Systems: A Flexible Radiation Sensor Development Perspective. IEEE Transactions on Nuclear Science, 2017, , 1-1.	2.0	0
42	Flexible Ag-ChG Radiation Sensors: Limit of Detection and Dynamic Range Optimization Through Physical Design Tuning. IEEE Transactions on Nuclear Science, 2016, 63, 2137-2144.	2.0	7
43	Demonstration of spike timing dependent plasticity in CBRAM devices with silicon neurons. , 2016, , .		12
44	Physically Based Predictive Model for Single Event Transients in CMOS Gates. IEEE Transactions on Electron Devices, 2016, 63, 2248-2254.	3.0	20
45	Impedance Spectroscopy of Programmable Metallization Cells With a Thin SiO₂Switching Layer. IEEE Electron Device Letters, 2016, 37, 576-579.	3.9	9
46	Conductive bridging random access memoryâ€"materials, devices and applications. Semiconductor Science and Technology, 2016, 31, 113001.	2.0	90
47	A 12-b, 650-MSps time-interleaved pipeline analog to digital converter with 1.5ÂGHz analog bandwidth for digital beam-forming systems. Analog Integrated Circuits and Signal Processing, 2016, 89, 213-222.	1.4	1
48	Surface-potential-based compact modeling of BTI. , 2016, , .		1
49	Effects of 14 MeV neutron irradiation on the DC characteristics of CBRAM cells. , 2016, , .		5
50	Radiation Hardening by Process of CBRAM Resistance Switching Cells. IEEE Transactions on Nuclear Science, 2016, 63, 2145-2151.	2.0	15
51	Xâ€ray radiation induced effects in selected chalcogenide glasses and CBRAM devices based on them. Physica Status Solidi (B): Basic Research, 2016, 253, 1060-1068.	1.5	5
52	A CMOS-compatible electronic synapse device based on Cu/SiO₂/W programmable metallization cells. Nanotechnology, 2016, 27, 255202.	2.6	66
53	Volatile and Non-Volatile Switching in Cu-SiO₂Programmable Metallization Cells. IEEE Electron Device Letters, 2016, 37, 580-583.	3.9	87
54	A Nonvolatile Sense Amplifier Flip-Flop Using Programmable Metallization Cells. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2015, 5, 205-213.	3.6	10

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55	A Study of Gamma-Ray Exposure of Cuâ€“SiO$_2$ Programmable Metallization Cells. IEEE Transactions on Nuclear Science, 2015, 62, 2404-2411.	2.0	24
56	Hydrogen Limits for Total Dose and Dose Rate Response in Linear Bipolar Circuits. IEEE Transactions on Nuclear Science, 2015, 62, 2476-2481.	2.0	14
57	Single Event Susceptibility Analysis in CBRAM Resistive Memory Arrays. IEEE Transactions on Nuclear Science, 2015, 62, 2606-2612.	2.0	10
58	Compact Modeling of Total Ionizing Dose and Aging Effects in MOS Technologies. IEEE Transactions on Nuclear Science, 2015, 62, 1501-1515.	2.0	94
59	Reconfigurable Memristive Device Technologies. Proceedings of the IEEE, 2015, 103, 1004-1033.	21.3	69
60	Investigation of Single-Bit and Multiple-Bit Upsets in Oxide RRAM-Based 1T1R and Crossbar Memory Arrays. IEEE Transactions on Nuclear Science, 2015, 62, 2294-2301.	2.0	37
61	Improved Model for Increased Surface Recombination Current in Irradiated Bipolar Junction Transistors. IEEE Transactions on Nuclear Science, 2015, 62, 1658-1664.	2.0	28
62	Flexible Sensors Based on Radiation-Induced Diffusion of Ag in Chalcogenide Glass. IEEE Transactions on Nuclear Science, 2014, 61, 3432-3437.	2.0	11
63	Investigation of Single Event Induced Soft Errors in Programmable Metallization Cell Memory. IEEE Transactions on Nuclear Science, 2014, 61, 3557-3563.	2.0	15
64	Ionizing Radiation Effects on Nonvolatile Memory Properties of Programmable Metallization Cells. IEEE Transactions on Nuclear Science, 2014, 61, 2985-2990.	2.0	29
65	Structural and Material Changes in Thin Film Chalcogenide Glasses Under Ar-Ion Irradiation. IEEE Transactions on Nuclear Science, 2014, 61, 2855-2861.	2.0	4
66	Impedance Measurement and Characterization of Ag-Ge₃₀Se₇₀-Based Programmable Metallization Cells. IEEE Transactions on Electron Devices, 2014, 61, 3723-3730.	3.0	12
67	Transient response exploration of SRAM cell metastable states caused by ionizing radiation with 3D mixed mode simulation. , 2014, , .		0
68	Total ionizing dose effect of Î³-ray radiation on the switching characteristics and filament stability of HfOx resistive random access memory. Applied Physics Letters, 2014, 104, .	3.3	57
69	Thin Ge-Se films as a sensing material for radiation doses. Physica Status Solidi (B): Basic Research, 2014, 251, 1347-1353.	1.5	5
70	Gamma radiation induced effects in floppy and rigid Ge-containing chalcogenide thin films. Journal of Applied Physics, 2014, 115, 043502.	2.5	16
71	Total Ionizing Dose Retention Capability of Conductive Bridging Random Access Memory. IEEE Electron Device Letters, 2014, 35, 205-207.	3.9	33
72	New functionality of chalcogenide glasses for radiation sensing of nuclear wastes. Journal of Hazardous Materials, 2014, 269, 68-73.	12.4	15

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73	Sensors Based on Radiation-Induced Diffusion of Silver in Germanium Selenide Glasses. IEEE Transactions on Nuclear Science, 2013, 60, 4257-4264.	2.0	19
74	Total-Ionizing-Dose Effects on the Resistance Switching Characteristics of Chalcogenide Programmable Metallization Cells. IEEE Transactions on Nuclear Science, 2013, 60, 4563-4569.	2.0	34
75	Simulation of TID Effects in a High Voltage Ring Oscillator. IEEE Transactions on Nuclear Science, 2013, 60, 4547-4554.	2.0	6
76	Total ionizing dose tolerance of the resistance switching of Ag-Ge4oSeo based Programmable Metallization Cells. , 2013, , .		5
77	Modeling the Effects of Hydrogen on the Mechanisms of Dose Rate Sensitivity. IEEE Transactions on Nuclear Science, 2012, 59, 701-706.	2.0	24
78	Modeling the Non-Uniform Distribution of Radiation-Induced Interface Traps. IEEE Transactions on Nuclear Science, 2012, 59, 723-727.	2.0	76
79	Effects of Cobalt-60 Gamma-Rays on Ge-Se Chalcogenide Glasses and Ag/Ge-Se Test Structures. IEEE Transactions on Nuclear Science, 2012, 59, 3093-3100.	2.0	19
80	Modeling Inter-Device Leakage in 90 nm Bulk CMOS Devices. IEEE Transactions on Nuclear Science, 2011, 58, 793-799.	2.0	83
81	Modeling the non-uniform distribution of interface traps. , 2011, , .		1
82	Modeling the effects of hydrogen on the mechanisms of dose rate sensitivity. , 2011, , .		6
83	Wide-temperature high-resolution integrated data acquisition for spectroscopy in space. , 2011, , .		2
84	Modeling of Ionizing Radiation-Induced Degradation in Multiple Gate Field Effect Transistors. IEEE Transactions on Nuclear Science, 2011, 58, 499-505.	2.0	88
85	Characterization and Modeling of Parasitic Field-Oxide Transistors for Use in Radiation Hardening by Design. IEEE Transactions on Nuclear Science, 2011, 58, 2863-2870.	2.0	5
86	Modeling Low Dose Rate Effects in Shallow Trench Isolation Oxides. IEEE Transactions on Nuclear Science, 2011, 58, 2945-2952.	2.0	23
87	Structural study of Ag-Ge-S solid electrolyte glass system for resistive radiation sensing. , 2011, , .		4
88	The sensitivity of radiation-induced leakage to STI topology and sidewall doping. Microelectronics Reliability, 2011, 51, 889-894.	1.7	27
89	Impact of Alpha Particles on the Electrical Characteristics of TiO$_{2}$ Memristors. IEEE Transactions on Nuclear Science, 2011, 58, 2838-2844.	2.0	45
90	Film Bulk Acoustic-Wave Resonator based radiation sensor. , 2010, , .		2

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91	Failure Analysis and Radiation-Enabled Circuit Simulation of a Dual Charge Pump Circuit. IEEE Transactions on Nuclear Science, 2010, , .	2.0	4
92	Modeling the Dose Rate Response and the Effects of Hydrogen in Bipolar Technologies. IEEE Transactions on Nuclear Science, 2009, 56, 3196-3202.	2.0	29
93	Irradiation With Molecular Hydrogen as an Accelerated Total Dose Hardness Assurance Test Method for Bipolar Linear Circuits. IEEE Transactions on Nuclear Science, 2009, 56, 3326-3333.	2.0	29
94	Modeling of ionizing radiation-induced degradation in multiple gate field effect transistors. , 2009, , .		3
95	Reliability of high performance standard two-edge and radiation hardened by design enclosed geometry transistors. Reliability Physics Symposium, 2009 IEEE International, 2009, , .	0.0	17
96	The Effects of Hydrogen on the Enhanced Low Dose Rate Sensitivity (ELDRS) of Bipolar Linear Circuits. IEEE Transactions on Nuclear Science, 2008, 55, 3169-3173.	2.0	72
97	Impact of hydrogen contamination on the total dose response of linear bipolar microcircuits. , 2007, , .		12
98	Mechanisms of Enhanced Radiation-Induced Degradation Due to Excess Molecular Hydrogen in Bipolar Oxides. IEEE Transactions on Nuclear Science, 2007, 54, 1913-1919.	2.0	75
99	Total-Ionizing-Dose Effects in Modern CMOS Technologies. IEEE Transactions on Nuclear Science, 2006, 53, 3103-3121.	2.0	511
100	Total dose effects on gate controlled lateral PNP bipolar junction transistors. IEEE Transactions on Nuclear Science, 1998, 45, 2577-2583.	2.0	23