

Daniel J Lichtenwalner

List of Publications by Year in descending order

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108
papers

2,599
citations

218592

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all docs

108
docs citations

108
times ranked

2080
citing authors

#	ARTICLE	IF	CITATIONS
1	Silicon carbide power MOSFETs: Breakthrough performance from 900 V up to 15 kV. , 2014, , .		205
2	Polycrystalline La _{0.5} Sr _{0.5} CoO ₃ /PbZr _{0.53} Ti _{0.47} O ₃ / La _{0.5} Sr _{0.5} CoO ₃ ferroelectric capacitors on platinized silicon with no polarization fatigue. Applied Physics Letters, 1994, 64, 2673-2675.	1.5	183
3	Dipole model explaining high-k/metal gate field effect transistor threshold voltage tuning. Applied Physics Letters, 2008, 92, .	1.5	161
4	Growth and characterization of cubic boron nitride thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1994, 12, 3074-3081.	0.9	133
5	Work function engineering using lanthanum oxide interfacial layers. Applied Physics Letters, 2006, 89, 232103.	1.5	100
6	Investigation of the ablated flux characteristics during pulsed laser ablation deposition of multicomponent oxides. Journal of Applied Physics, 1993, 74, 7497-7505.	1.1	86
7	Flexible thin film temperature and strain sensor array utilizing a novel sensing concept. Sensors and Actuators A: Physical, 2007, 135, 593-597.	2.0	81
8	Lanthanum silicate gate dielectric stacks with subnanometer equivalent oxide thickness utilizing an interfacial silica consumption reaction. Journal of Applied Physics, 2005, 98, 024314.	1.1	69
9	High mobility 4H-SiC (0001) transistors using alkali and alkaline earth interface layers. Applied Physics Letters, 2014, 105, .	1.5	67
10	Energy-band alignment of Al ₂ O ₃ and HfAlO gate dielectrics deposited by atomic layer deposition on 4H-SiC. Applied Physics Letters, 2010, 96, .	1.5	66
11	Comparison of Au and Au-Ni Alloys as Contact Materials for MEMS Switches. Journal of Microelectromechanical Systems, 2009, 18, 287-295.	1.7	64
12	Single-Event Burnout of SiC Junction Barrier Schottky Diode High-Voltage Power Devices. IEEE Transactions on Nuclear Science, 2018, 65, 256-261.	1.2	63
13	Interfacial self cleaning during atomic layer deposition and annealing of HfO ₂ films on native (100)-GaAs substrates. Applied Physics Letters, 2010, 96, .	1.5	52
14	Light emission from thermally oxidized silicon nanoparticles. Applied Physics Letters, 1994, 65, 2684-2686.	1.5	46
15	Reliability studies of SiC vertical power MOSFETs. , 2018, , .		43
16	Dipole Moment Model Explaining nFET V _{th} Tuning Utilizing La, Sc, Er, and Sr Doped HfSiON Dielectrics. , 2007, , .		41
17	Effect of electrodes on the ferroelectric properties of pulsed-laser ablation-deposited PbZr _x Ti _{1-x} O ₃ thin film capacitors. Ferroelectrics, 1994, 152, 97-102.	0.3	39
18	High-mobility enhancement-mode 4H-SiC lateral field-effect transistors utilizing atomic layer deposited Al ₂ O ₃ gate dielectric. Applied Physics Letters, 2009, 95, .	1.5	39

#	ARTICLE	IF	CITATIONS
19	High Permittivity Gate Dielectric Materials. Springer Series in Advanced Microelectronics, 2013, , .	0.3	39
20	Terrestrial Neutron-Induced Failures in Silicon Carbide Power MOSFETs and Diodes. IEEE Transactions on Nuclear Science, 2018, 65, 1248-1254.	1.2	39
21	Epitaxial KNbO ₃ thin films on KTaO ₃ , MgAl ₂ O ₄ , and MgO substrates. Applied Physics Letters, 1994, 65, 1073-1075.	1.5	38
22	A new test facility for efficient evaluation of MEMS contact materials. Journal of Micromechanics and Microengineering, 2007, 17, 1788-1795.	1.5	35
23	Contact degradation in hot/cold operation of direct contact micro-switches. Journal of Micromechanics and Microengineering, 2010, 20, 105028.	1.5	35
24	Ultra high voltage MOS controlled 4H-SiC power switching devices. Semiconductor Science and Technology, 2015, 30, 084001.	1.0	35
25	Structure and chemistry of passivated SiC/SiO ₂ interfaces. Applied Physics Letters, 2016, 108, 201607.	1.5	34
26	SiC power device reliability. , 2016, , .		33
27	In situ deposition of superconducting YBa ₂ Cu ₃ O _{7-δ} and DyBa ₂ Cu ₃ O _{7-δ} thin films by organometallic molecular beam epitaxy. Applied Physics Letters, 1991, 59, 3045-3047.	1.5	32
28	Thermally Stable N-Metal Gate MOSFETs Using La-Incorporated HfSiO Dielectric. , 2006, , .		32
29	Light emission from crystalline silicon and amorphous silicon oxide (SiO _x) nanoparticles. Journal of Electronic Materials, 1994, 23, 57-62.	1.0	28
30	Reliability of SiC Power Devices against Cosmic Ray Neutron Single-Event Burnout. Materials Science Forum, 0, 924, 559-562.	0.3	28
31	Uniform deposition of YBa ₂ Cu ₃ O _{7-δ} films over large areas using ion beam sputtering. Journal of Applied Physics, 1991, 70, 6952-6957.	1.1	27
32	Performance and Reliability Impacts of Extended Epitaxial Defects on 4H-SiC Power Devices. Materials Science Forum, 0, 924, 137-142.	0.3	27
33	Analysis of the oxidation kinetics and barrier layer properties of ZrN and Pt/Ru thin films for DRAM applications. Thin Solid Films, 1996, 280, 265-270.	0.8	26
34	Electrical characteristics of metal-oxide-semiconductor capacitors on p-GaAs using atomic layer deposition of ultrathin HfAlO gate dielectric. Applied Physics Letters, 2008, 93, 193504.	1.5	26
35	High temperature stability of lanthanum silicate dielectric on Si (001). Applied Physics Letters, 2007, 90, 102908.	1.5	24
36	Band-Engineered Low PMOS V _T with High-K/Metal Gates Featured in a Dual Channel CMOS Integration Scheme. , 2007, , .		24

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37	Impact of elemental arsenic on electrical characteristics of metal-oxide-semiconductor capacitors on GaAs using atomic-layer deposited HfO ₂ gate dielectric. Applied Physics Letters, 2008, 92, .	1.5	24
38	High-Mobility SiC MOSFETs with Alkaline Earth Interface Passivation. Materials Science Forum, 2016, 858, 671-676.	0.3	22
39	Predicting Cosmic Ray-Induced Failures in Silicon Carbide Power Devices. IEEE Transactions on Nuclear Science, 2019, 66, 1828-1832.	1.2	21
40	Analysis of Interface States in LaSi _x O _y Metal-Insulator-Semiconductor Structures. Japanese Journal of Applied Physics, 2007, 46, 6480.	0.8	20
41	A review of composition-structure-property relationships for PZT-based heterostructure capacitors. Integrated Ferroelectrics, 1995, 6, 173-187.	0.3	19
42	Investigation of the Origin of V_{T}/V_{mFB} Modulation by $\text{La}_{2}\text{O}_{3}$ Capping Layer Approaches for NMOS Application: Role of La Diffusion, Effect of Host High- k Layer, and Interface Properties. IEEE Transactions on Electron Devices, 2011, 58, 3106-3115.	1.6	19
43	Epitaxial growth of lanthanide oxides La ₂ O ₃ and Sc ₂ O ₃ on GaN. Applied Physics Letters, 2011, 98, 042902.	1.5	19
44	High-Mobility SiC MOSFETs with Chemically Modified Interfaces. Materials Science Forum, 0, 821-823, 749-752.	0.3	19
45	Imprint testing of ferroelectric capacitors used for non-volatile memories. Integrated Ferroelectrics, 1994, 5, 275-286.	0.3	18
46	Band Edge n-MOSFETs with High- k /Metal Gate Stacks Scaled to EOT=0.9nm with Excellent Carrier Mobility and High Temperature Stability. , 2006, , .		18
47	Reliability assessment of a large population of 3.3 kV, 45 A 4H-SiC MOSFETs. , 2017, , .		17
48	Overview of Materials Processing and Properties of Lanthanum-Based High- k Dielectrics. ECS Transactions, 2007, 11, 319-332.	0.3	15
49	Resolution of the transfer direction of field-evaporated gold atoms for nanofabrication and microelectromechanical system applications. Applied Physics Letters, 2011, 98, 044102.	1.5	15
50	Technique to improve performance of Al ₂ O ₃ interpoly dielectric using a La ₂ O ₃ interface scavenging layer for floating gate memory structures. Applied Physics Letters, 2010, 96, 092905.	1.5	14
51	Process control for the low temperature deposition of niobium-nitride thin films. IEEE Transactions on Magnetics, 1989, 25, 2084-2088.	1.2	12
52	15 kV n-GTOs in 4H-SiC. Materials Science Forum, 0, 963, 651-654.	0.3	12
53	Pulsed laser ablation-deposition of La _{0.5} Sr _{0.5} CoO ₃ for use as electrodes in nonvolatile ferroelectric memories. Journal of Materials Research, 1996, 11, 1514-1519.	1.2	11
54	High temperature stability of Hf-based gate dielectric stacks with rare-earth oxide layers for threshold voltage control. Applied Physics Letters, 2008, 92, 112912.	1.5	10

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55	Next Generation Planar 1700 V, 20 mÅ© 4H-SiC DMOSFETs with Low Specific On-Resistance and High Switching Speed. Materials Science Forum, 0, 897, 521-524.	0.3	10
56	Electrical Properties and Interface Structure of SiC MOSFETs with Barium Interface Passivation. Materials Science Forum, 0, 897, 163-166.	0.3	10
57	The effects of radiation on the terrestrial operation of SiC MOSFETs. , 2018, , .		10
58	Second harmonic generation in potassium niobate thin films. Journal of Applied Physics, 1995, 78, 435-438.	1.1	9
59	900V silicon carbide MOSFETs for breakthrough power supply design. , 2015, , .		9
60	Impact of Carrier Lifetime Enhancement Using High Temperature Oxidation on 15 kV 4H-SiC P-GTO Thyristor. Materials Science Forum, 2017, 897, 587-590.	0.3	9
61	Gate Oxide Reliability of SiC MOSFETs and Capacitors Fabricated on 150mm Wafers. Materials Science Forum, 0, 963, 745-748.	0.3	9
62	Study of the surface morphology and growth mode of in situ ionâ€beam sputterâ€deposited YBa2Cu3O7â€ thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 1537-1543.	0.9	8
63	Origin of multiplexing capabilities of multifrequency magnetic ratchets. Physical Review E, 2012, 85, 041407.	0.8	8
64	Electrically detected magnetic resonance study of barium and nitric oxide treatments of 4H-SiC metal-oxide-semiconductor field-effect transistors. Journal of Applied Physics, 2019, 126, 145702.	1.1	7
65	Multiband analysis of photoluminescence spectra from electronically excited gas-phase species produced during laser ablation of lead oxide, zirconium oxide, titanium oxide, and lead zirconate titanate targets. Chemistry of Materials, 1995, 7, 477-485.	3.2	6
66	Blocking Performance Improvements for 4H-SiC P-GTO Thyristors with Carrier Lifetime Enhancement Processes. Materials Science Forum, 0, 924, 633-636.	0.3	6
67	Accelerated Testing of SiC Power Devices. , 2020, , .		6
68	Processing thin films of KNbO3 for optical waveguides. Integrated Ferroelectrics, 1995, 6, 363-373.	0.3	5
69	Lead zirconate titanate ferroelectric capacitors produced on sapphire and gallium arsenide substrates. Integrated Ferroelectrics, 1995, 8, 309-316.	0.3	5
70	Reliability and Stability Issues for Lanthanum Silicate as a High-K Dielectric. ECS Transactions, 2006, 3, 245-252.	0.3	5
71	High-Temperature Stability of Lanthanum Silicate Gate Dielectric MIS Devices with Ta and TaN Electrodes. Journal of the Electrochemical Society, 2006, 153, F210.	1.3	5
72	Comparison of channel mobility and oxide properties of MOSFET devices on Si-face (0001) and A-face (11-20) 4H-SiC. Materials Research Society Symposia Proceedings, 2014, 1693, 25.	0.1	5

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73	Performance and Reliability of SiC Power MOSFETs. MRS Advances, 2016, 1, 81-89.	0.5	5
74	Effect of noble gases on the properties of ion beam sputtered niobium films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1989, 7, 102-104.	0.9	4
75	Aggressively Scaled High-k Gate Dielectric with Excellent Performance and High Temperature Stability for 32nm and Beyond. , 2007, , .		4
76	Performance and reliability characteristics of the band edge high-k/metal gate nMOSFETs with La-doped Hf-silicate gate dielectrics. , 2008, , .		4
77	New Insight into Single-Event Radiation Failure Mechanisms in Silicon Carbide Power Schottky Diodes and MOSFETs. Materials Science Forum, 0, 1004, 1066-1073.	0.3	4
78	Role of nitrogen ions in ion-beam reactive sputtering of NbN. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1990, 8, 1283-1287.	0.9	3
79	Synthesis and characterization of epitaxial YBa ₂ Cu ₃ O _{7-x} /KNbO ₃ film heterostructures. Applied Physics Letters, 1992, 61, 1844-1846.	1.5	3
80	Towards the Fabrication of Ultra-Thin SOI on Si (001) using Epitaxial Oxide and Epitaxial Semiconductor Growth Processes. ECS Transactions, 2006, 3, 449-460.	0.3	3
81	Investigation of VT Shift Mechanism of High-K Dielectrics caused by Lanthanum Capping for NMOS and Tantalum Capping for PMOS Devices. ECS Transactions, 2008, 13, 123-130.	0.3	3
82	Investigation of Nitrated Atomic-Layer-Deposited Oxides in 4H-SiC Capacitors and MOSFETs. Materials Science Forum, 2013, 740-742, 707-710.	0.3	3
83	Accelerated Testing of SiC Power Devices under High-Field Operating Conditions. Materials Science Forum, 0, 1004, 992-997.	0.3	3
84	Scanning Tunneling Microscopy and Spectroscopy of Y-Ba-Cu-O Thin Films Produced by Ion Beam Sputter-Deposition. Materials Research Society Symposia Proceedings, 1992, 275, 119.	0.1	2
85	Effects of Process Parameters on the Ablated Flux Characteristics During Pulsed-Laser Ablation of Lead Zirconate Titanate (PZT). Materials Research Society Symposia Proceedings, 1993, 310, 481.	0.1	2
86	Materials and Processes for High k Gate Stacks: Results from the FEP Transition Center. ECS Transactions, 2006, 3, 389-415.	0.3	2
87	Investigation of Conducting Oxide and Metal Electrode Work Functions on Lanthanum Silicate High-k Dielectric. ECS Transactions, 2007, 11, 607-612.	0.3	2
88	Effect of GaAs Surface Treatments on Lanthanum Silicate High-K Dielectric Gate Stack Properties. Materials Research Society Symposia Proceedings, 2008, 1073, 1.	0.1	2
89	Epitaxial Growth of High-k Dielectrics for GaN MOSFETs. Materials Research Society Symposia Proceedings, 2008, 1068, 1.	0.1	2
90	Lanthanide-Based High-k Gate Dielectric Materials. Springer Series in Advanced Microelectronics, 2013, , 343-369.	0.3	2

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91	Negative Gate Bias TDDDB evaluation of n-Channel SiC Vertical Power MOSFETs. , 2022, , .		2
92	Improvements to the Analytical Model to Describe UIS Events. IEEE Transactions on Electron Devices, 2022, 69, 3848-3853.	1.6	2
93	Gate Bias Effects on SiC MOSFET Terrestrial-Neutron Single-Event Burnout. Materials Science Forum, 0, 1062, 463-467.	0.3	2
94	Processing Impact on Electrical Properties of Lanthanum Silicate Thin Films. Materials Research Society Symposia Proceedings, 2006, 917, 1.	0.1	1
95	Impact of AlTaO Dielectric Capping on Device Performance and Reliability for Advanced Metal Gate/High- k PMOS Application. IEEE Transactions on Electron Devices, 2011, 58, 2928-2935.	1.6	1
96	Reliability and Performance Issues in SiC MOSFETs: Insight Provided by Spin Dependent Recombination. , 2019, , .		1
97	Plasma-Activated Ion Beam Reactive Sputtering of NbN Thin Films. Materials Research Society Symposia Proceedings, 1988, 128, 67.	0.1	0
98	Ion-Beam Reactive Sputter Deposition of MgO Thin Films on Silicon and Sapphire Substrates. Materials Research Society Symposia Proceedings, 1992, 268, 253.	0.1	0
99	TfX2: A critical review of vapour phase deposition methods for ferroelectric thin films. Ferroelectrics, 1992, 133, 3-3.	0.3	0
100	Microstructural and optical properties of potassium niobate thin films. , 0, , .		0
101	Origin of light emission from silicon nanoparticles. , 0, , .		0
102	High-Temperature Processing Effects on Lanthanum Silicate Gate Dielectric MIS Devices. ECS Transactions, 2006, 1, 227-238.	0.3	0
103	Investigations of Work Function Shift in Lanthanum Silicate High-K Dielectric MIS Capacitors. ECS Transactions, 2007, 6, 149-156.	0.3	0
104	High-mobility enhancement-mode 4H SiC lateral nMOSFETs with atomic layer deposited Al ₂ O ₃ gate dielectric. , 2009, , .		0
105	Gate Stack Reliability of High-Mobility 4H SiC Lateral MOSFETs with Deposited Al ₂ O ₃ Gate Dielectric. Materials Research Society Symposia Proceedings, 2009, 1195, 155.	0.1	0
106	Interface and Electrical Properties of Atomic-layer-deposited HfAlO Gate Dielectric for N-channel GaAs MOSFETs. Materials Research Society Symposia Proceedings, 2009, 1155, 1.	0.1	0
107	Gate leakage effects of annealing Lanthanum Oxide on Gallium Nitride. , 2009, , .		0
108	Resolving Atomic Scale Chemistry and Structure at NO and Ba Passivated SiC/SiO ₂ Interfaces. Microscopy and Microanalysis, 2016, 22, 1658-1659.	0.2	0