

Debbie G Senesky

List of Publications by Year in descending order

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108
papers

2,278
citations

257101

24
h-index

243296

44
g-index

117
all docs

117
docs citations

117
times ranked

2399
citing authors

#	ARTICLE	IF	CITATIONS
1	Cluster-based acoustic emission signal processing and loading rate effects study of nanoindentation on thin film stack structures. <i>Mechanical Systems and Signal Processing</i> , 2022, 165, 108301.	4.4	7
2	Hall-Effect Sensor Technique for No Induced Voltage in AC Magnetic Field Measurements Without Current Spinning. <i>IEEE Sensors Journal</i> , 2022, 22, 1245-1251.	2.4	1
3	High Temperature Degradation Modes Observed in Gallium Nitride-Based Hall-Effect Sensors. <i>Journal of Electronic Packaging</i> , Transactions of the ASME, 2022, , .	1.2	3
4	Effect of proton irradiation temperature on persistent photoconductivity in zinc oxide metal-semiconductor-metal ultraviolet photodetectors. <i>Journal of Applied Physics</i> , 2022, 131, 155701.	1.1	3
5	Nanoindentation characterization of thin film stack structures by finite element analysis and experiments using acoustic emission testing. <i>Materials Science in Semiconductor Processing</i> , 2022, 147, 106737.	1.9	1
6	Extended Exposure of Gallium Nitride Heterostructure Devices to a Simulated Venus Environment. , 2021, , .		7
7	Selective aqueous ammonia sensors using electrochemical stripping and capacitive detection. <i>AIChE Journal</i> , 2021, 67, e17465.	1.8	4
8	Electron beam irradiation of gallium nitride-on-silicon betavoltaics fabricated with a triple mesa etch. <i>Journal of Applied Physics</i> , 2021, 130, 174503.	1.1	4
9	A Laterally Vibrating Lithium Niobate MEMS Resonator Array Operating at 500 Å°C in Air. <i>Sensors</i> , 2021, 21, 149.	2.1	7
10	Nanoarchitectonics for Wide Bandgap Semiconductor Nanowires: Toward the Next Generation of Nanoelectromechanical Systems for Environmental Monitoring. <i>Advanced Science</i> , 2020, 7, 2001294.	5.6	48
11	Closed-form orthotropic constitutive model for aligned square array mesostructure. <i>Additive Manufacturing</i> , 2020, 36, 101463.	1.7	2
12	Low Offset and Noise in High Biased GaN 2DEG Hall-Effect Plates Investigated With Infrared Microscopy. <i>Journal of Microelectromechanical Systems</i> , 2020, 29, 669-676.	1.7	9
13	Correction to "Stable Operation of AlGaIn/GaN HEMTs for 25 Hours at 400Å°C in Air". <i>IEEE Journal of the Electron Devices Society</i> , 2020, 8, 716-716.	1.2	0
14	Ultra-High-Q Gallium Nitride SAW Resonators for Applications With Extreme Temperature Swings. <i>Journal of Microelectromechanical Systems</i> , 2020, 29, 900-905.	1.7	13
15	Self-powered monolithic accelerometer using a photonic gate. <i>Nano Energy</i> , 2020, 76, 104950.	8.2	18
16	Sensitivity of 2DEG-based Hall-effect sensors at high temperatures. <i>Review of Scientific Instruments</i> , 2020, 91, 025003.	0.6	23
17	Extreme Temperature Modeling of AlGaIn/GaN HEMTs. <i>IEEE Transactions on Electron Devices</i> , 2020, 67, 430-437.	1.6	21
18	Monolithic tesla-level magnetic induction by self-rolled-up membrane technology. <i>Science Advances</i> , 2020, 6, eaay4508.	4.7	35

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19	Lithography and Etching-Free Microfabrication of Silicon Carbide on Insulator Using Direct UV Laser Ablation. <i>Advanced Engineering Materials</i> , 2020, 22, 1901173.	1.6	7
20	High-Temperature Electronics Packaging for Simulated Venus Condition. <i>Journal of Microelectronics and Electronic Packaging</i> , 2020, 17, 59-66.	0.8	5
21	Deployment of InAlN/GaN Hall-effect Sensors for Bucket Transformer Monitoring and Forecasting. , 2020, , .		0
22	500Å ² SiC PWM Integrated Circuit. <i>IEEE Transactions on Power Electronics</i> , 2019, 34, 1997-2001.	5.4	9
23	Gallium Nitride Photodetector Measurements of UV Emission from a Gaseous CH ₄ /O ₂ Hybrid Rocket Igniter Plume. , 2019, , .		3
24	Stable Operation of AlGaIn/GaN HEMTs for 25 h at 400Å°C in air. <i>IEEE Journal of the Electron Devices Society</i> , 2019, 7, 931-935.	1.2	22
25	Process-induced anomalous current transport in graphene/InAlN/GaN heterostructured diodes. , 2019, , .		1
26	Modeling of radiation-induced defect recovery in 3C-SiC under high field bias conditions. <i>Computational Materials Science</i> , 2019, 161, 10-15.	1.4	4
27	Significant Phonon Drag Enables High Power Factor in the AlGaIn/GaN Two-Dimensional Electron Gas. <i>Nano Letters</i> , 2019, 19, 3770-3776.	4.5	13
28	Micro-Tesla Offset in Thermally Stable AlGaIn/GaN 2DEG Hall Plates Using Current Spinning. , 2019, 3, 1-4.		16
29	Effect of Geometry on Sensitivity and Offset of AlGaIn/GaN and InAlN/GaN Hall-Effect Sensors. <i>IEEE Sensors Journal</i> , 2019, 19, 3640-3646.	2.4	24
30	Tuning Electrical and Thermal Transport in AlGaIn/GaN Heterostructures via Buffer Layer Engineering. <i>Advanced Functional Materials</i> , 2018, 28, 1705823.	7.8	19
31	Strain Effect in Highly-Doped n-Type 3C-SiC on Glass Substrate for Mechanical Sensors and Mobility Enhancement. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2018, 215, 1800288.	0.8	5
32	High Responsivity, Low Dark Current Ultraviolet Photodetectors Based on Two-Dimensional Electron Gas Interdigitated Transducers. <i>ACS Photonics</i> , 2018, 5, 4277-4282.	3.2	65
33	A Single Input Multiple Output (SIMO) Variation-Tolerant Nanosensor. <i>ACS Sensors</i> , 2018, 3, 1782-1788.	4.0	8
34	Thermoelectrics: Tuning Electrical and Thermal Transport in AlGaIn/GaN Heterostructures via Buffer Layer Engineering (<i>Adv. Funct. Mater.</i> 22/2018). <i>Advanced Functional Materials</i> , 2018, 28, 1870152.	7.8	3
35	Highly sensitive 4H-SiC pressure sensor at cryogenic and elevated temperatures. <i>Materials and Design</i> , 2018, 156, 441-445.	3.3	60
36	Characterization of the piezoresistance in highly doped p-type 3C-SiC at cryogenic temperatures. <i>RSC Advances</i> , 2018, 8, 29976-29979.	1.7	9

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37	Highly sensitive pressure sensors employing 3C-SiC nanowires fabricated on a free standing structure. <i>Materials and Design</i> , 2018, 156, 16-21.	3.3	49
38	Highly antireflective AlGaIn/GaN ultraviolet photodetectors using ZnO nanorod arrays on inverted pyramidal surfaces. <i>Applied Surface Science</i> , 2017, 409, 91-96.	3.1	26
39	High-throughput pulsed laser manufacturing etch process for complex and released structures from bulk 4H-SiC. , 2017, , .		4
40	Suppression of Persistent Photoconductivity in AlGaIn/GaN Ultraviolet Photodetectors Using <i>In Situ</i> Heating. <i>IEEE Electron Device Letters</i> , 2017, 38, 56-59.	2.2	68
41	InAlN/GaN high electron mobility micro-pressure sensors for high-temperature environments. <i>Sensors and Actuators A: Physical</i> , 2017, 263, 216-223.	2.0	31
42	Effect of Frost Formation on Operation of GaN Ultraviolet Photodetectors at Low Temperatures. <i>IEEE Sensors Journal</i> , 2017, 17, 4752-4756.	2.4	15
43	Monolithically Integrated Microheater for On-Chip Annealing of Oxide Defects. <i>IEEE Electron Device Letters</i> , 2017, 38, 831-834.	2.2	16
44	Lithography-free microfabrication of AlGaIn/GaN 2DEG strain sensors using laser ablation and direct wire bonding. <i>Microelectronic Engineering</i> , 2017, 173, 54-57.	1.1	5
45	Enhancement of thermoelectric characteristics in AlGaIn/GaN films deposited on inverted pyramidal Si surfaces. <i>Applied Physics Letters</i> , 2017, 111, 021902.	1.5	0
46	Graphene-enhanced gallium nitride ultraviolet photodetectors under 2 MeV proton irradiation. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	5
47	Degradation of 2DEG transport properties in GaN-capped AlGaIn/GaN heterostructures at 600 °C in oxidizing and inert environments. <i>Journal of Applied Physics</i> , 2017, 122, .	1.1	9
48	In situ ultraviolet shock radiance measurements using GaN-on-sapphire photodetectors. <i>Review of Scientific Instruments</i> , 2017, 88, 115004.	0.6	3
49	Thickness engineering of atomic layer deposited Al ₂ O ₃ films to suppress interfacial reaction and diffusion of Ni/Au gate metal in AlGaIn/GaN HEMTs up to 600 °C in air. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	12
50	Profile Evolution of High Aspect Ratio Silicon Carbide Trenches by Inductive Coupled Plasma Etching. <i>Journal of Microelectromechanical Systems</i> , 2017, 26, 135-142.	1.7	47
51	Low-temperature and pressure response of InAlN/GaN ring-shaped high electron mobility transistors. , 2017, , .		0
52	Gallium Nitride Microelectronics for High-Temperature Environments. , 2016, , 395-433.		0
53	ZnO nanorod arrays and direct wire bonding on GaN surfaces for rapid fabrication of antireflective, high-temperature ultraviolet sensors. <i>Applied Surface Science</i> , 2016, 387, 280-284.	3.1	31
54	Low-resistance gateless high electron mobility transistors using three-dimensional inverted pyramidal AlGaIn/GaN surfaces. <i>Applied Physics Letters</i> , 2016, 108, .	1.5	18

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55	DC characteristics of ALD-grown Al ₂ O ₃ /AlGaIn/GaN MIS-HEMTs and HEMTs at 600 Å°C in air. Semiconductor Science and Technology, 2016, 31, 115017.	1.0	22
56	A microfabricated sun sensor using GaN-on-sapphire ultraviolet photodetector arrays. Review of Scientific Instruments, 2016, 87, 095003.	0.6	16
57	Wafer-level MOCVD growth of AlGaIn/GaN-on-Si HEMT structures with ultra-high room temperature 2DEG mobility. AIP Advances, 2016, 6, .	0.6	13
58	Rapid fabrication and packaging of AlGaIn/GaN high-temperature ultraviolet photodetectors using direct wire bonding. Journal Physics D: Applied Physics, 2016, 49, 285109.	1.3	30
59	Continuous V-Grooved AlGaIn/GaN Surfaces for High-Temperature Ultraviolet Photodetectors. IEEE Sensors Journal, 2016, 16, 3633-3639.	2.4	44
60	Interdigitated Pt-GaN Schottky interfaces for high-temperature soot-particulate sensing. Applied Surface Science, 2016, 368, 104-109.	3.1	13
61	Strain- and temperature-induced effects in AlGaIn/GaN high electron mobility transistors. Semiconductor Science and Technology, 2016, 31, 035024.	1.0	26
62	Irradiation Response of Graphene Enhanced Gallium Nitride Metal-Semiconductor-Metal Ultraviolet Photodetectors. Materials Research Society Symposia Proceedings, 2015, 1746, 13.	0.1	1
63	Inductive Coupled Plasma Etching of High Aspect Ratio Silicon Carbide Microchannels for Localized Cooling. , 2015, , .		7
64	4th International Symposium on Sensor Science (I3S2015): Conference Report. Sensors, 2015, 15, 24458-24465.	2.1	0
65	Multilayer etch masks for 3-dimensional fabrication of robust silicon carbide microstructures. , 2015, , .		9
66	Irradiation effects of graphene-enhanced gallium nitride (GaN) metal-semiconductor-metal (MSM) ultraviolet photodetectors. Proceedings of SPIE, 2015, , .	0.8	4
67	Impact of gamma irradiation on GaN/sapphire surface acoustic wave resonators. , 2014, , .		3
68	Temperature sensor based on 4H-silicon carbide pn diode operational from 20â€‰°C to 600â€‰°C. Applied Physics Letters, 2014, 104, .	1.5	82
69	Effects of radiation and temperature on gallium nitride (GaN) metal-semiconductor-metal ultraviolet photodetectors. , 2014, , .		5
70	Characterization of gallium nitride microsystems within radiation and high-temperature environments. Proceedings of SPIE, 2014, , .	0.8	3
71	Emerging GaN-based HEMTs for mechanical sensing within harsh environments. Proceedings of SPIE, 2014, , .	0.8	6
72	4H-SiC PN diode for extreme environment temperature sensing applications. , 2014, , .		0

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73	Operation of ohmic Ti/Al/Pt/Au multilayer contacts to GaN at 600°C in air. Applied Physics Letters, 2014, 105, 081905.	1.5	17
74	Anchor loss reduction in ALN Lamb wave resonators using phononic crystal strip tethers. , 2014, , .		39
75	Finite element thermal analysis of localized heating in AlGaIn/GaN HEMT based sensors. , 2014, , .		3
76	High temperature energy harvesters utilizing ALN/3C-SiC composite diaphragms. , 2014, , .		0
77	Characterization of irradiated and temperature-compensated gallium nitride surface acoustic wave resonators. , 2014, , .		0
78	4H-SiC N-Channel JFET for Operation in High-Temperature Environments. IEEE Journal of the Electron Devices Society, 2014, 2, 164-167.	1.2	26
79	Two-port filters and resonators on AlN/3C-SiC plates utilizing high-order Lamb wave modes. , 2013, , .		14
80	Advances in silicon carbide science and technology at the micro- and nanoscales. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	0.9	127
81	Surface acoustic wave devices on AlN/3C-SiC/Si multilayer structures. Journal of Micromechanics and Microengineering, 2013, 23, 025019.	1.5	61
82	Acoustic characteristics of the third-order quasi-symmetric Lamb wave mode in an AlN/3C-SiC plate. , 2013, , .		1
83	Thermally stable SiO ₂ /AlN/SiO ₂ Lamb wave resonators utilizing the lowest-order symmetric mode at high temperatures. , 2013, , .		5
84	Wide Bandgap Semiconductors for Sensing Within Extreme Harsh Environments. ECS Transactions, 2013, 50, 233-238.	0.3	21
85	High-endurance solar-blind photodetectors using AlN on Si substrates for extreme harsh environment applications. , 2013, , .		0
86	Solar-Blind Photodetectors for Harsh Electronics. Scientific Reports, 2013, 3, 2628.	1.6	113
87	Dispersion characteristics of high-order lamb wave modes in an AlN/3C-SiC layered plate. , 2012, , .		4
88	4H-SiC Metal-Semiconductor-Metal Ultraviolet Photodetectors in Operation of 450 nm. IEEE Electron Device Letters, 2012, 33, 1586-1588.	2.2	76
89	Extreme temperature 4H-SiC metal-semiconductor-metal ultraviolet photodetectors. , 2012, , .		1
90	Geothermal environmental exposure testing of encapsulant and device materials for harsh environment MEMS sensors. , 2012, , .		4

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91	Micromachined aluminum nitride acoustic resonators with an epitaxial silicon carbide layer utilizing high-order Lamb wave modes. , 2012, , .		13
92	AlN/3C-SiC Composite Plate Enabling High-Frequency and High-Q Micromechanical Resonators. Advanced Materials, 2012, 24, 2722-2727.	11.1	143
93	Micromechanical Resonators: AlN/3C-SiC Composite Plate Enabling High-Frequency and High-Q Micromechanical Resonators (Adv. Mater. 20/2012). Advanced Materials, 2012, 24, 2721-2721.	11.1	1
94	Low-Temperature, Ion Beam-Assisted SiC Thin Films With Antireflective ZnO Nanorod Arrays for High-Temperature Photodetection. IEEE Electron Device Letters, 2011, 32, 1564-1566.	2.2	31
95	Epitaxial Graphene Growth on 3C-SiC(111)/AlN(0001)/Si(100). Electrochemical and Solid-State Letters, 2011, 14, K13.	2.2	20
96	MEMS Sensors for Down-Hole Monitoring of Geothermal Energy Systems. , 2011, , .		3
97	Nanocrystalline SiC metal-semiconductor-metal photodetector with ZnO nanorod arrays for high-temperature applications. , 2011, , .		2
98	High-Q aluminum nitride Lamb wave resonators with biconvex edges. Applied Physics Letters, 2011, 99, .	1.5	136
99	Quality factor enhancement in lamb wave resonators utilizing AlN plates with convex edges. , 2011, , .		8
100	MEMS Strain Sensors for Intelligent Structural Systems. Lecture Notes in Electrical Engineering, 2011, , 63-74.	0.3	3
101	AlN thin films grown on epitaxial 3C-SiC (100) for piezoelectric resonant devices. Applied Physics Letters, 2010, 97, 141907.	1.5	73
102	Surface acoustic wave propagation properties in AlN/3C-SiC/Si composite structure. , 2010, , .		3
103	Growth of 3C-SiC Thin Film on AlN/Si(100) with Atomically Abrupt Interface via Tailored Precursor Feeding Procedure. Electrochemical and Solid-State Letters, 2010, 13, D53.	2.2	5
104	Aluminum nitride as a masking material for the plasma etching of silicon carbide structures. , 2010, , .		12
105	Characterization of aluminum nitride lamb wave resonators operating at 600°C for harsh environment RF applications. , 2010, , .		20
106	Synthesis of narrowband AlN Lamb wave ladder-type filters based on overhang adjustment. , 2010, , .		7
107	Electrodeposition of Permalloy in Deep Silicon Trenches Without Edge-Overgrowth Utilizing Dry Film Photoresist. , 2009, , .		2
108	Harsh Environment Silicon Carbide Sensors for Health and Performance Monitoring of Aerospace Systems: A Review. IEEE Sensors Journal, 2009, 9, 1472-1478.	2.4	181