

Andrew Armstrong

List of Publications by Year in descending order

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82
papers

1,975
citations

236925

25
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276875

41
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82
all docs

82
docs citations

82
times ranked

1792
citing authors

#	ARTICLE	IF	CITATIONS
1	Role of self-trapped holes in the photoconductive gain of In^2 -gallium oxide Schottky diodes. Journal of Applied Physics, 2016, 119, .	2.5	141
2	An AlN/Al _{0.85} Ga _{0.15} N high electron mobility transistor. Applied Physics Letters, 2016, 109, .	3.3	108
3	Review "Ultra-Wide-Bandgap AlGa _N Power Electronic Devices. ECS Journal of Solid State Science and Technology, 2017, 6, Q3061-Q3066.	1.8	104
4	Vertical GaN Power Diodes With a Bilayer Edge Termination. IEEE Transactions on Electron Devices, 2016, 63, 419-425.	3.0	91
5	Interband tunneling for hole injection in III-nitride ultraviolet emitters. Applied Physics Letters, 2015, 106, .	3.3	79
6	Defect-reduction mechanism for improving radiative efficiency in InGa _N /Ga _N light-emitting diodes using InGa _N underlayers. Journal of Applied Physics, 2015, 117, .	2.5	76
7	High voltage and high current density vertical GaN power diodes. Electronics Letters, 2016, 52, 1170-1171.	1.0	64
8	Design and demonstration of ultra-wide bandgap AlGa _N tunnel junctions. Applied Physics Letters, 2016, 109, .	3.3	59
9	Tunnel-injected sub-290-nm ultra-violet light emitting diodes with 2.8% external quantum efficiency. Applied Physics Letters, 2018, 112, .	3.3	58
10	Tunnel-injected sub-260-nm ultraviolet light emitting diodes. Applied Physics Letters, 2017, 110, .	3.3	55
11	Contribution of deep-level defects to decreasing radiative efficiency of InGa _N /Ga _N quantum wells with increasing emission wavelength. Applied Physics Express, 2014, 7, 032101.	2.4	51
12	High Al-Content AlGa _N Transistor With 0.5 A/mm Current Density and Lateral Breakdown Field Exceeding 3.6 MV/cm. IEEE Electron Device Letters, 2018, 39, 256-259.	3.9	46
13	Slow Detrapping Transients due to Gate and Drain Bias Stress in High Breakdown Voltage AlGa _N /Ga _N HEMTs. IEEE Transactions on Electron Devices, 2012, 59, 2115-2122.	3.0	42
14	Ohmic contacts to Al-rich AlGa _N heterostructures. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600842.	1.8	36
15	Al _{0.85} Ga _{0.15} N/Al _{0.70} Ga _{0.30} N High Electron Mobility Transistors with Schottky Gates and Large On/Off Current Ratio over Temperature. ECS Journal of Solid State Science and Technology, 2017, 6, Q161-Q165.	1.8	36
16	Operation Up to 500 °C of Al _{0.85} Ga _{0.15} N/Al _{0.7} Ga _{0.3} N High Electron Mobility Transistors. IEEE Journal of the Electron Devices Society, 2019, 7, 444-452.	2.1	36
17	Detection and modeling of leakage current in AlGa _N -based deep ultraviolet light-emitting diodes. Journal of Applied Physics, 2015, 117, .	2.5	34
18	Al-rich AlGa _N based transistors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	33

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19	Design of p-type cladding layers for tunnel-injected UV-A light emitting diodes. Applied Physics Letters, 2016, 109, .	3.3	32
20	Reflective metal/semiconductor tunnel junctions for hole injection in AlGa _N UV LEDs. Applied Physics Letters, 2017, 111, .	3.3	32
21	Multidimensional thermal analysis of an ultrawide bandgap AlGa _N channel high electron mobility transistor. Applied Physics Letters, 2019, 115, .	3.3	30
22	Simulations of Junction Termination Extensions in Vertical Ga _N Power Diodes. IEEE Transactions on Electron Devices, 2017, 64, 2291-2297.	3.0	28
23	Performance and Breakdown Characteristics of Irradiated Vertical Power Ga _N P-i-N Diodes. IEEE Transactions on Nuclear Science, 2015, 62, 2912-2918.	2.0	27
24	Enhanced light extraction in tunnel junction-enabled top emitting UV LEDs. Applied Physics Express, 2016, 9, 052102.	2.4	27
25	Planar Ohmic Contacts to Al _{0.45} Ga _{0.55} N/Al _{0.3} Ga _{0.7} N High Electron Mobility Transistors. ECS Journal of Solid State Science and Technology, 2017, 6, S3067-S3071.	1.8	27
26	RF Performance of Al _{0.85} Ga _{0.15} N/Al _{0.70} Ga _{0.30} N High Electron Mobility Transistors with 80 nm Gates. IEEE Electron Device Letters, 2018, , 1-1.	3.9	27
27	High Temperature Operation of Al _{0.45} Ga _{0.55} N/Al _{0.30} Ga _{0.70} N High Electron Mobility Transistors. ECS Journal of Solid State Science and Technology, 2017, 6, S3010-S3013.	1.8	26
28	Demonstration of >6.0-kV Breakdown Voltage in Large Area Vertical Ga _N p-n Diodes With Step-Etched Junction Termination Extensions. IEEE Transactions on Electron Devices, 2022, 69, 1931-1937.	3.0	26
29	High-Voltage Regrown Nonpolar $\text{Al}_{0.45}\text{Ga}_{0.55}\text{N}/\text{Al}_{0.3}\text{Ga}_{0.7}\text{N}$ Plane Vertical p-n Diodes: A Step Toward Future Selective-Area-Doped Power Switches. IEEE Electron Device Letters, 2019, 40, 387-390.	3.9	23
30	Growth temperature dependence of Si doping efficiency and compensating deep level defect incorporation in Al _{0.7} Ga _{0.3} N. Journal of Applied Physics, 2015, 117, .	2.5	22
31	Visible-blind and solar-blind detection induced by defects in AlGa _N high electron mobility transistors. Journal of Applied Physics, 2018, 123, 114502.	2.5	22
32	AlGa _N polarization-doped field effect transistor with compositionally graded channel from Al _{0.6} Ga _{0.4} N to AlN. Applied Physics Letters, 2019, 114, .	3.3	22
33	Laser diodes with 353 nm wavelength enabled by reduced-dislocation-density AlGa _N templates. Applied Physics Express, 2015, 8, 112702.	2.4	21
34	Selective area regrowth and doping for vertical gallium nitride power devices: Materials challenges and recent progress. Materials Today, 2021, 49, 296-323.	14.2	21
35	Depletion-Mode Photoconductivity Study of Deep Levels in Ga _N Nanowires. Journal of Electronic Materials, 2009, 38, 484-489.	2.2	20
36	X-ray topography characterization of gallium nitride substrates for power device development. Journal of Crystal Growth, 2020, 544, 125709.	1.5	20

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37	Extreme Temperature Operation of Ultra-Wide Bandgap AlGa _N High Electron Mobility Transistors. IEEE Transactions on Semiconductor Manufacturing, 2019, 32, 473-477.	1.7	19
38	Investigation of dry-etch-induced defects in 600\AA regrown, vertical, GaN, p-n diodes using deep-level optical spectroscopy. Journal of Applied Physics, 2019, 126, .	2.5	18
39	Polarization-induced electrical conductivity in ultra-wide band gap AlGa _N alloys. Applied Physics Letters, 2016, 109, .	3.3	17
40	Proton irradiation effects on minority carrier diffusion length and defect introduction in homoepitaxial and heteroepitaxial n-GaN. Journal of Applied Physics, 2017, 122, .	2.5	17
41	Ultra-wide band gap AlGa _N polarization-doped field effect transistor. Japanese Journal of Applied Physics, 2018, 57, 074103.	1.5	17
42	Enhancement-mode Al _{0.85} Ga _{0.15} N/Al _{0.7} Ga _{0.3} N high electron mobility transistor with fluorine treatment. Applied Physics Letters, 2019, 114, .	3.3	17
43	Synchrotron X-ray topography characterization of high quality ammonothermal-grown gallium nitride substrates. Journal of Crystal Growth, 2020, 551, 125903.	1.5	17
44	Enhancement-mode AlGa _N channel high electron mobility transistor enabled by p-AlGa _N gate. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2019, 37, .	1.2	16
45	Interfacial Impurities and Their Electronic Signatures in High-Voltage Regrown Nonpolar n-Plane GaN Vertical n-Diodes. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900757.	1.8	14
46	Device-Level Multidimensional Thermal Dynamics With Implications for Current and Future Wide Bandgap Electronics. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.8	14
47	Visible- and solar-blind photodetectors using AlGa _N high electron mobility transistors with a nanodot-based floating gate. Photonics Research, 2019, 7, B24.	7.0	13
48	Energy Frontier Research Center for Solid-State Lighting Science: Exploring New Materials Architectures and Light Emission Phenomena. Journal of Physical Chemistry C, 2014, 118, 13330-13345.	3.1	12
49	Spectroscopic investigations of band offsets of MgO AlxGa$1-x$N epitaxial heterostructures with varying AlN content. Applied Physics Letters, 2015, 107, .	3.3	12
50	Influence of growth temperature and temperature ramps on deep level defect incorporation in m-plane GaN. Applied Physics Letters, 2013, 103, 232108.	3.3	11
51	High-frequency, high-power performance of AlGa _N -channel high-electron-mobility transistors: an RF simulation study. Japanese Journal of Applied Physics, 2019, 58, SCCD04.	1.5	11
52	Regrown Vertical GaN n-Diodes with Low Reverse Leakage Current. Journal of Electronic Materials, 2019, 48, 3311-3316.	2.2	11
53	Low voltage drop tunnel junctions grown monolithically by MOCVD. Applied Physics Letters, 2021, 118, .	3.3	11
54	Highly nonlinear defect-induced carrier recombination rates in semiconductors. Journal of Applied Physics, 2013, 114, .	2.5	10

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55	Identification of the primary compensating defect level responsible for determining blocking voltage of vertical GaN power diodes. Applied Physics Letters, 2016, 109, .	3.3	9
56	Fully transparent GaN homojunction tunnel junction-enabled cascaded blue LEDs. Applied Physics Letters, 2020, 117, .	3.3	9
57	Sensitivity of on-resistance and threshold voltage to buffer-related deep level defects in AlGaIn/GaN high electron mobility transistors. Semiconductor Science and Technology, 2013, 28, 074020.	2.0	8
58	In situ scanning electron microscope electrical characterization of GaN nanowire nanodiodes using tungsten and tungsten/gallium nanoprobe. Solid State Communications, 2009, 149, 1608-1610.	1.9	7
59	Quantitative and Depth-Resolved Investigation of Deep-Level Defects in InGaIn/GaN Heterostructures. Journal of Electronic Materials, 2011, 40, 369-376.	2.2	7
60	Imaging the Impact of Proton Irradiation on Edge Terminations in Vertical GaN PIN Diodes. IEEE Electron Device Letters, 2017, 38, 945-948.	3.9	7
61	Evolution of AlGaIn deep level defects as a function of alloying and compositional grading and resultant impact on electrical conductivity. Applied Physics Letters, 2017, 111, 042103.	3.3	7
62	Saturation Velocity Measurement of Al _{0.7} Ga _{0.3} N-Channel High Electron Mobility Transistors. Journal of Electronic Materials, 2019, 48, 5581-5585.	2.2	7
63	Al _{0.7} Ga _{0.3} N MESFET With All-Refractory Metal Process for High Temperature Operation. IEEE Transactions on Electron Devices, 2021, 68, 4278-4282.	3.0	5
64	All-MOCVD-grown gallium nitride diodes with ultra-low resistance tunnel junctions. Journal Physics D: Applied Physics, 2021, 54, 155103.	2.8	5
65	Development of High-Voltage Vertical GaN PN Diodes. , 2020, , .		5
66	III-nitride nanowires: novel materials for solid-state lighting. , 2011, , .		4
67	Sub 300 nm wavelength III-Nitride tunnel-injected ultraviolet LEDs. , 2015, , .		4
68	Ultra-Wide Bandgap Al _x Ga _{1-x} N Channel Transistors. International Journal of High Speed Electronics and Systems, 2019, 28, 1940009.	0.7	4
69	In-Operando Spatial Imaging of Edge Termination Electric Fields in GaN Vertical p-n Junction Diodes. IEEE Electron Device Letters, 2016, , 1-1.	3.9	3
70	Ohmic Contact-Free Mobility Measurement in Ultra-Wide Bandgap AlGaIn/AlGaIn Devices. IEEE Electron Device Letters, 2018, 39, 55-58.	3.9	3
71	III-Nitride ultra-wide-bandgap electronic devices. Semiconductors and Semimetals, 2019, 102, 397-416.	0.7	3
72	Defect suppression in wet-treated etched-and-regrown nonpolar m-plane GaN vertical Schottky diodes: A deep-level optical spectroscopy analysis. Journal of Applied Physics, 2020, 128, 185703.	2.5	3

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73	Etched-and-Regrown GaN <i>pn</i> -Diodes With 1600 V Blocking Voltage. IEEE Journal of the Electron Devices Society, 2021, 9, 318-323.	2.1	3
74	Carrier Diffusion Lengths in Continuously Grown and Etched-and-Regrown GaN Pin Diodes. IEEE Electron Device Letters, 2021, 42, 1041-1044.	3.9	3
75	Etched-And-Regrown GaN <i>pn</i> Diodes with Low-Defect Interfaces Prepared by In Situ TBCl Etching. ACS Applied Materials & Interfaces, 2021, 13, 53220-53226.	8.0	3
76	Sub-bandgap light-induced carrier generation at room temperature in 4H-SiC metal oxide semiconductor capacitors. Applied Physics Letters, 2011, 99, 173502.	3.3	2
77	High temperature operation to 500°C of AlGaIn graded polarization-doped field-effect transistors. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2020, 38, .	1.2	2
78	Deep-Level Characterization: Electrical and Optical Methods. Power Electronics and Power Systems, 2017, , 145-163.	0.6	1
79	Measuring the minority carrier diffusion length in n-GaN using bulk STEM EBIC. Microscopy and Microanalysis, 2018, 24, 1842-1843.	0.4	1
80	Etched and Regrown Vertical GaN Junction Barrier Schottky Diodes. , 2021, , .		1
81	III-nitride nanowires: growth, properties, and applications. , 2010, , .		0
82	High-resolution planar electron beam induced current in bulk diodes using high-energy electrons. Applied Physics Letters, 2021, 119, 014103.	3.3	0