Andrew Armstrong

List of Publications by Year
in descending order

82 papers	1,975 citations	236925 25 h-index	276875 41 g-index
82 all docs	82 docs citations	82 times ranked	1792 citing authors

#	Article	IF	Citations
1	Demonstration of >6.0-kV Breakdown Voltage in Large Area Vertical GaN p-n Diodes With Step-Etched Junction Termination Extensions. IEEE Transactions on Electron Devices, 2022, 69, 1931-1937.	3.0	26
2	Etched-and-Regrown GaN pn-Diodes With 1600 V Blocking Voltage. IEEE Journal of the Electron Devices Society, 2021, 9, 318-323.	2.1	3
3	Low voltage drop tunnel junctions grown monolithically by MOCVD. Applied Physics Letters, 2021, 118, .	3.3	11
4	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
5	Carrier Diffusion Lengths in Continuously Grown and Etched-and-Regrown GaN Pin Diodes. IEEE Electron Device Letters, 2021, 42, 1041-1044.	3.9	3
6	High-resolution planar electron beam induced current in bulk diodes using high-energy electrons. Applied Physics Letters, 2021, 119, 014103.	3.3	0
7	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
8	All-MOCVD-grown gallium nitride diodes with ultra-low resistance tunnel junctions. Journal Physics D: Applied Physics, 2021, 54, 155103.	2.8	5
9	Etched-And-Regrown GaN Pâ€“N Diodes with Low-Defect Interfaces Prepared by In Situ TBCl Etching. ACS Applied Materials & Interfaces, 2021, 13, 53220-53226.	8.0	3
10	Etched and Regrown Vertical GaN Junction Barrier Schottky Diodes. , 2021, , .		1
11	Interfacial Impurities and Their Electronic Signatures in Highâ€Voltage Regrown Nonpolar mâ€Plane GaN Vertical pâ€“n Diodes. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900757.	1.8	14
12	Synchrotron X-ray topography characterization of high quality ammonothermal-grown gallium nitride substrates. Journal of Crystal Growth, 2020, 551, 125903.	1.5	17
13	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
14	Fully transparent GaN homojunction tunnel junction-enabled cascaded blue LEDs. Applied Physics Letters, 2020, 117, .	3.3	9
15	Al-rich AlGaN based transistors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, .	2.1	33
16	High temperature operation to 500â€‰Â°C of AlGaN graded polarization-doped field-effect transistors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, .	1.2	2
17	X-ray topography characterization of gallium nitride substrates for power device development. Journal of Crystal Growth, 2020, 544, 125709.	1.5	20
18	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

#	Article	IF	Citations
19	Development of High-Voltage Vertical GaN PN Diodes. , 2020, , .		5
20	Extreme Temperature Operation of Ultra-Wide Bandgap AlGaN High Electron Mobility Transistors. IEEE Transactions on Semiconductor Manufacturing, 2019, 32, 473-477.	1.7	19
21	Saturation Velocity Measurement of Al0.7Ga0.3N-Channel High Electron Mobility Transistors. Journal of Electronic Materials, 2019, 48, 5581-5585.	2.2	7
22	Investigation of dry-etch-induced defects in >600â€‰V regrown, vertical, GaN, p-n diodes using deep-level optical spectroscopy. Journal of Applied Physics, 2019, 126, .	2.5	18
23	Multidimensional thermal analysis of an ultrawide bandgap AlGaN channel high electron mobility transistor. Applied Physics Letters, 2019, 115, .	3.3	30
24	III-Nitride ultra-wide-bandgap electronic devices. Semiconductors and Semimetals, 2019, 102, 397-416.	0.7	3
25	High-frequency, high-power performance of AlGaN-channel high-electron-mobility transistors: an RF simulation study. Japanese Journal of Applied Physics, 2019, 58, SCCD04.	1.5	11
26	Operation Up to 500 Â°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
27	Enhancement-mode AlGaN channel high electron mobility transistor enabled by p-AlGaN gate. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2019, 37, .	1.2	16
28	Regrown Vertical GaN pâ€“n Diodes with Low Reverse Leakage Current. Journal of Electronic Materials, 2019, 48, 3311-3316.	2.2	11
29	Enhancement-mode Al0.85Ga0.15N/Al0.7Ga0.3N high electron mobility transistor with fluorine treatment. Applied Physics Letters, 2019, 114, .	3.3	17
30	AlGaN polarization-doped field effect transistor with compositionally graded channel from Al0.6Ga0.4N to AlN. Applied Physics Letters, 2019, 114, .	3.3	22
31	Ultra-Wide Bandgap Al_xGa_{1-x}N Channel Transistors. International Journal of High Speed Electronics and Systems, 2019, 28, 1940009.	0.7	4
32	High-Voltage Regrown Nonpolar <inline-formula> <tex-math notation="LaTeX">${m}$ </tex-math> </inline-formula>-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
33	Visible- and solar-blind photodetectors using AlGaN high electron mobility transistors with a nanodot-based floating gate. Photonics Research, 2019, 7, B24.	7.0	13
34	Tunnel-injected sub 290â€‰nm ultra-violet light emitting diodes with 2.8% external quantum efficiency. Applied Physics Letters, 2018, 112, .	3.3	58
35	High Al-Content AlGaN 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
36	Visible-blind and solar-blind detection induced by defects in AlGaN high electron mobility transistors. Journal of Applied Physics, 2018, 123, 114502.	2.5	22

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37	Ohmic Contact-Free Mobility Measurement in Ultra-Wide Bandgap AlGaN/AlGaN Devices. IEEE Electron Device Letters, 2018, 39, 55-58.	3.9	3
38	RF Performance of Al0.85Ga0.15N/Al0.70Ga0.30N High Electron Mobility Transistors with 80 nm Gates. IEEE Electron Device Letters, 2018, , 1-1.	3.9	27
39	Ultra-wide band gap AlGaN polarization-doped field effect transistor. Japanese Journal of Applied Physics, 2018, 57, 074103.	1.5	17
40	Measuring the minority carrier diffusion length in n-GaN using bulk STEM EBIC. Microscopy and Microanalysis, 2018, 24, 1842-1843.	0.4	1
41	Reviewâ€"Ultra-Wide-Bandgap AlGaN Power Electronic Devices. ECS Journal of Solid State Science and Technology, 2017, 6, Q3061-Q3066.	1.8	104
42	Tunnel-injected sub-260â€‰nm ultraviolet light emitting diodes. Applied Physics Letters, 2017, 110, .	3.3	55
43	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
44	Ohmic contacts to Alâ€rich AlGaN heterostructures. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600842.	1.8	36
45	Simulations of Junction Termination Extensions in Vertical GaN Power Diodes. IEEE Transactions on Electron Devices, 2017, 64, 2291-2297.	3.0	28
46	Evolution of AlGaN 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
47	Reflective metal/semiconductor tunnel junctions for hole injection in AlGaN UV LEDs. Applied Physics Letters, 2017, 111, .	3.3	32
48	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
49	Deep-Level Characterization: Electrical and Optical Methods. Power Electronics and Power Systems, 2017, , 145-163.	0.6	1
50	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
51	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
52	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
53	High voltage and high current density vertical GaN power diodes. Electronics Letters, 2016, 52, 1170-1171.	1.0	64
54	Design of p-type cladding layers for tunnel-injected UV-A light emitting diodes. Applied Physics Letters, 2016, 109, .	3.3	32

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55	An AlN/Al0.85Ga0.15N high electron mobility transistor. Applied Physics Letters, 2016, 109, .	3.3	108
56	Design and demonstration of ultra-wide bandgap AlGaN tunnel junctions. Applied Physics Letters, 2016, 109, .	3.3	59
57	Polarization-induced electrical conductivity in ultra-wide band gap AlGaN alloys. Applied Physics Letters, 2016, 109, .	3.3	17
58	Role of self-trapped holes in the photoconductive gain of Î²-gallium oxide Schottky diodes. Journal of Applied Physics, 2016, 119, .	2.5	141
59	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
60	Enhanced light extraction in tunnel junction-enabled top emitting UV LEDs. Applied Physics Express, 2016, 9, 052102.	2.4	27
61	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
62	Vertical GaN Power Diodes With a Bilayer Edge Termination. IEEE Transactions on Electron Devices, 2016, 63, 419-425.	3.0	91
63	Spectroscopic investigations of band offsets of MgO|AlxGa1-xN epitaxial heterostructures with varying AlN content. Applied Physics Letters, 2015, 107, .	3.3	12
64	Laser diodes with 353 nm wavelength enabled by reduced-dislocation-density AlGaN templates. Applied Physics Express, 2015, 8, 112702.	2.4	21
65	Interband tunneling for hole injection in III-nitride ultraviolet emitters. Applied Physics Letters, 2015, 106, .	3.3	79
66	Performance and Breakdown Characteristics of Irradiated Vertical Power GaN P-i-N Diodes. IEEE Transactions on Nuclear Science, 2015, 62, 2912-2918.	2.0	27
67	Detection and modeling of leakage current in AlGaN-based deep ultraviolet light-emitting diodes. Journal of Applied Physics, 2015, 117, .	2.5	34
68	Defect-reduction mechanism for improving radiative efficiency in InGaN/GaN light-emitting diodes using InGaN underlayers. Journal of Applied Physics, 2015, 117, .	2.5	76
69	Growth temperature dependence of Si doping efficiency and compensating deep level defect incorporation in Al0.7Ga0.3N. Journal of Applied Physics, 2015, 117, .	2.5	22
70	Sub 300 nm wavelength III-Nitride tunnel-injected ultraviolet LEDs. , 2015, , .		4
71	Contribution of deep-level defects to decreasing radiative efficiency of InGaN/GaN quantum wells with increasing emission wavelength. Applied Physics Express, 2014, 7, 032101.	2.4	51
72	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

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73	Sensitivity of on-resistance and threshold voltage to buffer-related deep level defects in AlGaN/GaN high electron mobility transistors. Semiconductor Science and Technology, 2013, 28, 074020.	2.0	8
74	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
75	Highly nonlinear defect-induced carrier recombination rates in semiconductors. Journal of Applied Physics, 2013, 114, .	2.5	10
76	Slow Detrapping Transients due to Gate and Drain Bias Stress in High Breakdown Voltage AlGaN/GaN HEMTs. IEEE Transactions on Electron Devices, 2012, 59, 2115-2122.	3.0	42
77	III-nitride nanowires: novel materials for solid-state lighting. , 2011, , .		4
78	Quantitative and Depth-Resolved Investigation of Deep-Level Defects in InGaN/GaN Heterostructures. Journal of Electronic Materials, 2011, 40, 369-376.	2.2	7
79	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
80	III-nitride nanowires: growth, properties, and applications. , 2010, , .		0
81	Depletion-Mode Photoconductivity Study of Deep Levels in GaN Nanowires. Journal of Electronic Materials, 2009, 38, 484-489.	2.2	20
82	In situ scanning electron microscope electrical characterization of GaN nanowire nanodiodes using tungsten and tungsten/gallium nanoprobes. Solid State Communications, 2009, 149, 1608-1610.	1.9	7