Andrew Armstrong

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

79 papers	1,492 citations	22 h-index	35 g-index
82 ext. papers	1,717 ext. citations	2.9 avg, IF	4.68 L-index

#	Paper	IF	Citations
79	Role of self-trapped holes in the photoconductive gain of gallium oxide Schottky diodes. *Journal of Applied Physics*, **2016**, 119, 103102	2.5	118
78	An AlN/Al0.85Ga0.15N high electron mobility transistor. *Applied Physics Letters*, **2016**, 109, 033509	3.4	89
77	Review: Ultra-Wide-Bandgap AlGaN Power Electronic Devices. *ECS Journal of Solid State Science and Technology*, **2017**, 6, Q3061-Q3066	2	70
76	Vertical GaN Power Diodes With a Bilayer Edge Termination. *IEEE Transactions on Electron Devices*, **2016**, 63, 419-425	2.9	69
75	Interband tunneling for hole injection in III-nitride ultraviolet emitters. *Applied Physics Letters*, **2015**, 106, 141103	3.4	67
74	High voltage and high current density vertical GaN power diodes. *Electronics Letters*, **2016**, 52, 1170-1171	1.1	56
73	Defect-reduction mechanism for improving radiative efficiency in InGaN/GaN light-emitting diodes using InGaN underlayers. *Journal of Applied Physics*, **2015**, 117, 134501	2.5	54
72	Tunnel-injected sub-260 nm ultraviolet light emitting diodes. *Applied Physics Letters*, **2017**, 110, 201102	3.4	48
71	Tunnel-injected sub 290 nm ultra-violet light emitting diodes with 2.8% external quantum efficiency. *Applied Physics Letters*, **2018**, 112, 071107	3.4	45
70	Design and demonstration of ultra-wide bandgap AlGaN tunnel junctions. *Applied Physics Letters*, **2016**, 109, 121102	3.4	43
69	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	4.4	40
68	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	40
67	. *IEEE Transactions on Electron Devices*, **2012**, 59, 2115-2122	2.9	32
66	Al0.85Ga0.15N/Al0.70Ga0.30N 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	2	29
65	Detection and modeling of leakage current in AlGaN-based deep ultraviolet light-emitting diodes. *Journal of Applied Physics*, **2015**, 117, 095301	2.5	28
64	Design of p-type cladding layers for tunnel-injected UV-A light emitting diodes. *Applied Physics Letters*, **2016**, 109, 191105	3.4	28
63	Operation Up to 500 °C of Al0.85Ga0.15N/Al0.7Ga0.3N High Electron Mobility Transistors. *IEEE Journal of the Electron Devices Society*, **2019**, 7, 444-452	2.3	27

62	Reflective metal/semiconductor tunnel junctions for hole injection in AlGaN UV LEDs. *Applied Physics Letters*, **2017**, 111, 051104	3.4	26
61	Ohmic contacts to Al-rich AlGaN heterostructures. *Physica Status Solidi (A) Applications and Materials Science*, **2017**, 214, 1600842	1.6	25
60	Planar Ohmic Contacts to Al0.45Ga0.55N/Al0.3Ga0.7N High Electron Mobility Transistors. *ECS Journal of Solid State Science and Technology*, **2017**, 6, S3067-S3071	2	24
59	High Temperature Operation of Al0.45Ga0.55N/Al0.30Ga0.70N High Electron Mobility Transistors. *ECS Journal of Solid State Science and Technology*, **2017**, 6, S3010-S3013	2	23
58	Enhanced light extraction in tunnel junction-enabled top emitting UV LEDs. *Applied Physics Express*, **2016**, 9, 052102	2.4	23
57	Simulations of Junction Termination Extensions in Vertical GaN Power Diodes. *IEEE Transactions on Electron Devices*, **2017**, 64, 2291-2297	2.9	21
56	Multidimensional thermal analysis of an ultrawide bandgap AlGaN channel high electron mobility transistor. *Applied Physics Letters*, **2019**, 115, 153503	3.4	21
55	. *IEEE Transactions on Nuclear Science*, **2015**, 62, 2912-2918	1.7	20
54	High-Voltage Regrown Nonpolar ${m}$ -Plane Vertical p-n Diodes: A Step Toward Future Selective-Area-Doped Power Switches. *IEEE Electron Device Letters*, **2019**, 40, 387-390	4.4	20
53	Depletion-Mode Photoconductivity Study of Deep Levels in GaN Nanowires. *Journal of Electronic Materials*, **2009**, 38, 484-489	1.9	19
52	Al-rich AlGaN based transistors. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2020**, 38, 020803	2.9	18
51	Laser diodes with 353 nm wavelength enabled by reduced-dislocation-density AlGaN templates. *Applied Physics Express*, **2015**, 8, 112702	2.4	18
50	Enhancement-mode Al0.85Ga0.15N/Al0.7Ga0.3N high electron mobility transistor with fluorine treatment. *Applied Physics Letters*, **2019**, 114, 112104	3.4	15
49	Growth temperature dependence of Si doping efficiency and compensating deep level defect incorporation in Al0.7Ga0.3N. *Journal of Applied Physics*, **2015**, 117, 185704	2.5	15
48	AlGaN polarization-doped field effect transistor with compositionally graded channel from Al0.6Ga0.4N to AlN. *Applied Physics Letters*, **2019**, 114, 052103	3.4	15
47	RF Performance of Al0.85Ga0.15N/Al0.70Ga0.30N High Electron Mobility Transistors With 80-nm Gates. *IEEE Electron Device Letters*, **2018**, 1-1	4.4	15
46	Visible-blind and solar-blind detection induced by defects in AlGaN high electron mobility transistors. *Journal of Applied Physics*, **2018**, 123, 114502	2.5	14
45	X-ray topography characterization of gallium nitride substrates for power device development. *Journal of Crystal Growth*, **2020**, 544, 125709	1.6	14

44	Ultra-wide band gap AlGaN polarization-doped field effect transistor. *Japanese Journal of Applied Physics*, **2018**, 57, 074103	1.4	14
43	Extreme Temperature Operation of Ultra-Wide Bandgap AlGaN High Electron Mobility Transistors. *IEEE Transactions on Semiconductor Manufacturing*, **2019**, 32, 473-477	2.6	13
42	Investigation of dry-etch-induced defects in >600 V regrown, vertical, GaN, p-n diodes using deep-level optical spectroscopy. *Journal of Applied Physics*, **2019**, 126, 145703	2.5	13
41	Polarization-induced electrical conductivity in ultra-wide band gap AlGaN alloys. *Applied Physics Letters*, **2016**, 109, 222101	3.4	13
40	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, 021208	1.3	12
39	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	3.8	12
38	Proton irradiation effects on minority carrier diffusion length and defect introduction in homoepitaxial and heteroepitaxial n-GaN. *Journal of Applied Physics*, **2017**, 122, 235705	2.5	12
37	High-frequency, high-power performance of AlGaN-channel high-electron-mobility transistors: an RF simulation study. *Japanese Journal of Applied Physics*, **2019**, 58, SCCD04	1.4	11
36	Influence of growth temperature and temperature ramps on deep level defect incorporation in m-plane GaN. *Applied Physics Letters*, **2013**, 103, 232108	3.4	11
35	Synchrotron X-ray topography characterization of high quality ammonothermal-grown gallium nitride substrates. *Journal of Crystal Growth*, **2020**, 551, 125903	1.6	11
34	Regrown Vertical GaN p-i-n Diodes with Low Reverse Leakage Current. *Journal of Electronic Materials*, **2019**, 48, 3311-3316	1.9	10
33	Spectroscopic investigations of band offsets of MgO|AlxGa1-xN epitaxial heterostructures with varying AlN content. *Applied Physics Letters*, **2015**, 107, 102101	3.4	9
32	Interfacial Impurities and Their Electronic Signatures in High-Voltage Regrown Nonpolar m-Plane GaN Vertical p-i-n Diodes. *Physica Status Solidi (A) Applications and Materials Science*, **2020**, 217, 1900757	1.6	9
31	Identification of the primary compensating defect level responsible for determining blocking voltage of vertical GaN power diodes. *Applied Physics Letters*, **2016**, 109, 183503	3.4	9
30	Highly nonlinear defect-induced carrier recombination rates in semiconductors. *Journal of Applied Physics*, **2013**, 114, 144502	2.5	8
29	Visible- and solar-blind photodetectors using AlGaN high electron mobility transistors with a nanodot-based floating gate. *Photonics Research*, **2019**, 7, B24	6	8
28	Device-Level Multidimensional Thermal Dynamics With Implications for Current and Future Wide Bandgap Electronics. *Journal of Electronic Packaging, Transactions of the ASME*, **2020**, 142,	2	8
27	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	1.8	7

26	Saturation Velocity Measurement of Al0.7Ga0.3N-Channel High Electron Mobility Transistors. *Journal of Electronic Materials*, **2019**, 48, 5581-5585	1.9	6
25	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	3.4	6
24	In situ scanning electron microscope electrical characterization of GaN nanowire nanodiodes using tungsten and tungsten/gallium nanoprobes. *Solid State Communications*, **2009**, 149, 1608-1610	1.6	6
23	Selective area regrowth and doping for vertical gallium nitride power devices: Materials challenges and recent progress. *Materials Today*, **2021**, 49, 296-296	21.8	6
22	Imaging the Impact of Proton Irradiation on Edge Terminations in Vertical GaN PIN Diodes. *IEEE Electron Device Letters*, **2017**, 38, 945-948	4.4	5
21	Quantitative and Depth-Resolved Investigation of Deep-Level Defects in InGaN/GaN Heterostructures. *Journal of Electronic Materials*, **2011**, 40, 369-376	1.9	5
20	Sub 300 nm wavelength III-Nitride tunnel-injected ultraviolet LEDs **2015**,		4
19	Low voltage drop tunnel junctions grown monolithically by MOCVD. *Applied Physics Letters*, **2021**, 118, 053503	3.4	4
18	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	2.9	4
17	III-Nitride ultra-wide-bandgap electronic devices. *Semiconductors and Semimetals*, **2019**, 102, 397-416	0.6	3
16	Fully transparent GaN homojunction tunnel junction-enabled cascaded blue LEDs. *Applied Physics Letters*, **2020**, 117, 051103	3.4	3
15	Ultra-Wide Bandgap AlxGa1-xN Channel Transistors. *International Journal of High Speed Electronics and Systems*, **2019**, 28, 1940009	0.5	3
14	All-MOCVD-grown gallium nitride diodes with ultra-low resistance tunnel junctions. *Journal Physics D: Applied Physics*, **2021**, 54, 155103	3	3
13	Ohmic Contact-Free Mobility Measurement in Ultra-Wide Bandgap AlGaN/AlGaN Devices. *IEEE Electron Device Letters*, **2018**, 39, 55-58	4.4	2
12	In-Operando Spatial Imaging of Edge Termination Electric Fields in GaN Vertical p-n Junction Diodes. *IEEE Electron Device Letters*, **2016**, 1-1	4.4	2
11	III-nitride nanowires: novel materials for solid-state lighting **2011**,		2
10	Development of High-Voltage Vertical GaN PN Diodes **2020**,		2
9	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	2

8	Al0.7Ga0.3N MESFET With All-Refractory Metal Process for High Temperature Operation. *IEEE Transactions on Electron Devices*, **2021**, 68, 4278-4282	2.9	2
7	Sub-bandgap light-induced carrier generation at room temperature in 4H-SiC metal oxide semiconductor capacitors. *Applied Physics Letters*, **2011**, 99, 173502	3.4	1
6	High temperature operation to 500 ℃ of AlGaN graded polarization-doped field-effect transistors. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2020**, 38, 033202	1.3	1
5	Etched-and-Regrown GaN pn-Diodes With 1600 V Blocking Voltage. *IEEE Journal of the Electron Devices Society*, **2021**, 9, 318-323	2.3	1
4	Measuring the minority carrier diffusion length in n-GaN using bulk STEM EBIC. *Microscopy and Microanalysis*, **2018**, 24, 1842-1843	0.5	0
3	Deep-Level Characterization: Electrical and Optical Methods. *Power Electronics and Power Systems*, **2017**, 145-163	0.3	
2	Carrier Diffusion Lengths in Continuously Grown and Etched-and-Regrown GaN Pin Diodes. *IEEE Electron Device Letters*, **2021**, 42, 1041-1044	4.4	
1	High-resolution planar electron beam induced current in bulk diodes using high-energy electrons. *Applied Physics Letters*, **2021**, 119, 014103	3.4	