

# Matt Hardy

## List of Publications by Year in Descending Order

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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.

54  
papers

2,082  
citations

20  
h-index

45  
g-index

62  
ext. papers

2,308  
ext. citations

3.3  
avg. IF

4.19  
L-index

#	Paper	IF	Citations
54	Passivation Schemes for ScAlN-Barrier mm-Wave High Electron Mobility Transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2022</b> , 1-6	2.9	4
53	Electrical properties of high permittivity epitaxial SrCaTiO <sub>3</sub> grown on AlGa <sub>x</sub> N/GaN heterostructures. <i>APL Materials</i> , <b>2021</b> , 9, 111101	5.7	0
52	Crystalline Phase Control in Sc <sub>x</sub> Al <sub>1-x</sub> N Grown by Molecular Beam Epitaxy. <i>Microscopy and Microanalysis</i> , <b>2021</b> , 27, 2880-2881	0.5	
51	Band Alignment of ScAlN/GaN Heterojunctions. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 52192-52200	5.3	2009
50	Growth-induced temperature changes during transition metal nitride epitaxy on transparent SiC substrates. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2020</b> , 38, 032204	1.3	2
49	Control of phase purity in high scandium fraction heteroepitaxial ScAlN grown by molecular beam epitaxy. <i>Applied Physics Express</i> , <b>2020</b> , 13, 065509	2.4	20
48	Epitaxial growth of SrCaTiO <sub>3</sub> films on GaN by molecular beam epitaxy with a TiO <sub>2</sub> buffer layer. <i>Journal of Applied Physics</i> , <b>2020</b> , 127, 214104	2.5	1
47	Dependence of growth temperature on the electrical properties and microstructure of MBE-grown AlN/GaN resonant tunneling diodes on sapphire. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2020</b> , 38, 032214	1.3	2
46	Epitaxial Single-Crystal ScAlN on 4H-SiC for High-Velocity, Low-Loss SAW Devices <b>2020</b> ,		9
45	Long-wavelength dielectric properties and infrared active optical phonon modes of molecular beam epitaxy Sc <sub>x</sub> Al <sub>1-x</sub> N determined by infrared spectroscopic ellipsometry. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 232107	3.4	6
44	Molecular Beam Epitaxy of Transition Metal Nitrides for Superconducting Device Applications. <i>Physica Status Solidi (A) Applications and Materials Science</i> , <b>2020</b> , 217, 1900675	1.6	11
43	Engineering Efficient Acoustic Power Transfer in HBARs and Other Composite Resonators. <i>Journal of Microelectromechanical Systems</i> , <b>2020</b> , 29, 1014-1019	2.5	5
42	Heteroepitaxial growth of EGa <sub>2</sub> O <sub>3</sub> films on SiC via molecular beam epitaxy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2020</b> , 38, 063406	2.9	13
41	High Power Density ScAlN-Based Heterostructure FETs for mm-Wave Applications <b>2019</b> ,		11
40	RF-plasma MBE growth of epitaxial metallic Ta <sub>x</sub> N transition metal nitride films on SiC. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2019</b> , 37, 031211	1.3	4
39	Emerging materials, processing and device concepts. <i>Semiconductors and Semimetals</i> , <b>2019</b> , 102, 435-465	6.6	
38	Scandium Aluminum Nitride as an Emerging Material for High Power Transistors <b>2018</b> ,		2

37	Surface preparation of freestanding GaN substrates for homoepitaxial GaN growth by rf-plasma MBE. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , <b>2017</b> , 35, 02B109	1.3	19
36	Epitaxial ScAlN grown by molecular beam epitaxy on GaN and SiC substrates. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 162104	3.4	57
35	AlN/GaN/AlN resonant tunneling diodes grown by rf-plasma assisted molecular beam epitaxy on freestanding GaN. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , <b>2017</b> , 35, 02B110	1.3	9
34	XeF <sub>2</sub> etching of epitaxial Nb <sub>2</sub> N for lift-off or micromachining of III-N materials and devices. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2017</b> , 35, 05C312	2.9	3
33	(Invited) ScAlN: A Novel Barrier Material for High Power GaN-Based RF Transistors. <i>ECS Transactions</i> , <b>2017</b> , 80, 161-168	1	7
32	Epitaxial ScAlN Etch-Stop Layers Grown by Molecular Beam Epitaxy for Selective Etching of AlN and GaN. <i>IEEE Transactions on Semiconductor Manufacturing</i> , <b>2017</b> , 30, 475-479	2.6	16
31	Critical issues for homoepitaxial GaN growth by molecular beam epitaxy on hydride vapor-phase epitaxy-grown GaN substrates. <i>Journal of Crystal Growth</i> , <b>2016</b> , 456, 121-132	1.6	24
30	Epitaxial Lift-Off and Transfer of III-N Materials and Devices from SiC Substrates. <i>IEEE Transactions on Semiconductor Manufacturing</i> , <b>2016</b> , 29, 384-389	2.6	34
29	Morphological and microstructural stability of N-polar InAlN thin films grown on free-standing GaN substrates by molecular beam epitaxy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2016</b> , 34, 021512	2.9	1
28	Metallic $\text{InNb}_2\text{N}$ Films Epitaxially Grown by MBE on Hexagonal SiC Substrates. <i>MRS Advances</i> , <b>2016</b> , 1, 127-132	0.7	2
27	Characterization of molecular beam epitaxy grown $\text{InNb}_2\text{N}$ films and AlN/ $\text{InNb}_2\text{N}$ heterojunctions on 6H-SiC substrates. <i>Applied Physics Express</i> , <b>2016</b> , 9, 021003	2.4	13
26	Epitaxial metallic $\text{InNb}_2\text{N}$ films grown by MBE on hexagonal SiC substrates. <i>Applied Physics Express</i> , <b>2015</b> , 8, 085501	2.4	30
25	Charge control in N-polar InAlN high-electron-mobility transistors grown by plasma-assisted molecular beam epitaxy. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , <b>2015</b> , 33, 061207	1.3	10
24	Onset of plastic relaxation in semipolar (. <i>Journal of Crystal Growth</i> , <b>2014</b> , 388, 48-53	1.6	12
23	Impact of p-GaN Thermal Damage and Barrier Composition on Semipolar Green Laser Diodes. <i>IEEE Photonics Technology Letters</i> , <b>2014</b> , 26, 43-46	2.2	16
22	Pulsed high-power AlGaIn-cladding-free blue laser diodes on semipolar (202111) GaN substrates. <i>Applied Physics Letters</i> , <b>2013</b> , 103, 151112	3.4	38
21	Indium-tin-oxide clad blue and true green semipolar InGaIn/GaN laser diodes. <i>Applied Physics Letters</i> , <b>2013</b> , 103, 081103	3.4	40
20	True green semipolar InGaIn-based laser diodes beyond critical thickness limits using limited area epitaxy. <i>Journal of Applied Physics</i> , <b>2013</b> , 114, 183101	2.5	20

19	Suppression of relaxation in (202̄1) InGaN/GaN laser diodes using limited area epitaxy. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 241112	3-4	8
18	444.9 nm semipolar (112̄2) laser diode grown on an intentionally stress relaxed InGaN waveguiding layer. <i>Applied Physics Letters</i> , <b>2012</b> , 100, 021104	3-4	55
17	Performance and polarization effects in (112̄2) long wavelength light emitting diodes grown on stress relaxed InGaN buffer layers. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 121106	3-4	51
16	Stress relaxation and critical thickness for misfit dislocation formation in (101̄0) and (3031̄) InGaN/GaN heteroepitaxy. <i>Applied Physics Letters</i> , <b>2012</b> , 100, 171917	3-4	31
15	Suppression of m-plane and c-plane slip through Si and Mg doping in partially relaxed (202̄1) InGaN/GaN heterostructures. <i>Applied Physics Letters</i> , <b>2012</b> , 101, 132102	3-4	11
14	Trace analysis of non-basal plane misfit stress relaxation in (202̄1) and (3031̄) semipolar InGaN/GaN heterostructures. <i>Applied Physics Letters</i> , <b>2012</b> , 100, 202103	3-4	40
13	Observation of non-basal slip in semipolar In <sub>x</sub> Ga <sub>1-x</sub> N/GaN heterostructures. <i>Applied Physics Letters</i> , <b>2011</b> , 99, 251909	3-4	29
12	Group III-nitride lasers: a materials perspective. <i>Materials Today</i> , <b>2011</b> , 14, 408-415	21.8	108
11	Effect of n-AlGaN cleave assistance layers on the morphology of c-plane cleaved facets for m-plane InGaN/GaN laser diodes. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , <b>2011</b> , 8, 2226-2228		2
10	Demonstration of 505 nm laser diodes using wavelength-stable semipolar (202̄1) InGaN/GaN quantum wells. <i>Applied Physics Letters</i> , <b>2011</b> , 99, 241115	3-4	30
9	AlGa <sub>N</sub> -Cladding-Free m-Plane InGa <sub>N</sub> /Ga <sub>N</sub> Laser Diodes with p-Type AlGa <sub>N</sub> Etch Stop Layers. <i>Applied Physics Express</i> , <b>2011</b> , 4, 092105	2-4	4
8	AlGa <sub>N</sub> -Cladding Free Green Semipolar Ga <sub>N</sub> Based Laser Diode with a Lasing Wavelength of 506.4 nm. <i>Applied Physics Express</i> , <b>2010</b> , 3, 011002	2-4	76
7	Propagation of Spontaneous Emission in Birefringent m-Axis Oriented Semipolar (11̄2̄2) (Al,In,Ga) <sub>N</sub> Waveguide Structures. <i>Japanese Journal of Applied Physics</i> , <b>2010</b> , 49, 010207	1-4	7
6	Continuous-Wave Operation of Pure Blue AlGa <sub>N</sub> -Cladding-Free Nonpolar InGa <sub>N</sub> /Ga <sub>N</sub> Laser Diodes. <i>Applied Physics Express</i> , <b>2010</b> , 3, 092103	2-4	25
5	m-plane pure blue laser diodes with p-Ga <sub>N</sub> /n-AlGa <sub>N</sub> -based asymmetric cladding and InGa <sub>N</sub> -based wave-guiding layers. <i>Applied Physics Letters</i> , <b>2009</b> , 95, 081110	3-4	19
4	m-Plane Ga <sub>N</sub> -Based Blue Superluminescent Diodes Fabricated Using Selective Chemical Wet Etching. <i>Applied Physics Express</i> , <b>2009</b> , 2, 121004	2-4	36
3	Blue-Green InGa <sub>N</sub> /Ga <sub>N</sub> Laser Diodes on Miscut m-Plane Ga <sub>N</sub> Substrate. <i>Applied Physics Express</i> , <b>2009</b> , 2, 082102	2-4	51
2	Nonpolar AlGa <sub>N</sub> -Cladding-Free Blue Laser Diodes with InGa <sub>N</sub> Waveguiding. <i>Applied Physics Express</i> , <b>2009</b> , 2, 071003	2-4	37

1 High-resolution electrohydrodynamic jet printing. *Nature Materials*, **2007**, 6, 782-9

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