

Ramón Collazo

List of Publications by Year in descending order

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118
papers

2,427
citations

201385

27
h-index

233125

45
g-index

119
all docs

119
docs citations

119
times ranked

1963
citing authors

#	ARTICLE	IF	CITATIONS
1	GaN lateral polar junction arrays with 3D control of doping by supersaturation modulated growth: A path toward III-nitride superjunctions. <i>Journal of Applied Physics</i> , 2022, 131, 015703.	1.1	8
2	Large-Area, Solar-Blind, Sub-250 nm Detection AlGaN Avalanche Photodiodes Grown on AlN Substrates. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, .	1.2	9
3	Schottky contacts to N-polar GaN with SiN interlayer for elevated temperature operation. <i>Applied Physics Letters</i> , 2022, 120, .	1.5	0
4	(Invited, Digital Presentation) Exploring Interfaces and Polarity to Realize Vertical III-Nitride Superjunction Devices. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 1313-1313.	0.0	0
5	Self-compensation in heavily Ge doped AlGaIn: A comparison to Si doping. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	14
6	Weak localization and dimensional crossover in compositionally graded Al _x Ga _{1-x} N. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	6
7	On the characteristics of N-polar GaN Schottky barrier contacts with LPCVD SiN interlayers. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	3
8	Native oxide reconstructions on AlN and GaN (0001) surfaces. <i>Journal of Applied Physics</i> , 2021, 129, .	1.1	4
9	Tuning Microbial Activity via Programmatic Alteration of Cell/Substrate Interfaces. <i>Advanced Materials</i> , 2021, 33, e2004655.	11.1	6
10	Temperature dependence of electronic bands in Al/GaN by utilization of invariant deep defect transition energies. <i>Applied Physics Letters</i> , 2021, 119, 022101.	1.5	0
11	On the Ge shallow-to-deep level transition in Al-rich AlGaIn. <i>Journal of Applied Physics</i> , 2021, 130, .	1.1	5
12	Substrate Modification during Chemical Vapor Deposition of hBN on Sapphire. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 54516-54526.	4.0	15
13	(Invited) Ion Implantation and Polarity Control: Paths Toward a III-Nitride Superjunction. <i>ECS Meeting Abstracts</i> , 2021, MA2021-02, 983-983.	0.0	0
14	Status of the growth and fabrication of AlGaIn-based UV laser diodes for near and mid-UV wavelength. <i>Journal of Materials Research</i> , 2021, 36, 4638-4664.	1.2	25
15	Study of Dislocations in Homoepitaxially and Heteroepitaxially Grown AlN Layers. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2020, 217, 2000465.	0.8	3
16	Chemical treatment effects on Schottky contacts to metalorganic chemical vapor deposited n-type N-polar GaN. <i>Journal of Applied Physics</i> , 2020, 128, 064501.	1.1	9
17	Cathodoluminescence of silicon doped aluminum nitride with scanning transmission electron microscopy. <i>APL Materials</i> , 2020, 8, .	2.2	1
18	Modulating the Stress Response of <i>E. coli</i> at GaN Interfaces Using Surface Charge, Surface Chemistry, and Genetic Mutations. <i>ACS Applied Bio Materials</i> , 2020, 3, 7211-7218.	2.3	2

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19	Impact of impurity-based phonon resonant scattering on thermal conductivity of single crystalline GaN. Applied Physics Letters, 2020, 117, 082101.	1.5	7
20	Observation of carrier concentration dependent spintronic terahertz emission from In-GaN/NiFe heterostructures. Applied Physics Letters, 2020, 117, .	1.5	14
21	Complexes and compensation in degenerately donor doped GaN. Applied Physics Letters, 2020, 117, .	1.5	15
22	The nature of the DX state in Ge-doped AlGaIn. Applied Physics Letters, 2020, 116, .	1.5	14
23	Recovery kinetics in high temperature annealed AlN heteroepitaxial films. Journal of Applied Physics, 2020, 127, .	1.1	27
24	The role of chemical potential in compensation control in Si:AlGaIn. Journal of Applied Physics, 2020, 127, .	1.1	34
25	High gain, large area, and solar blind avalanche photodiodes based on Al-rich AlGaIn grown on AlN substrates. Applied Physics Letters, 2020, 116, .	1.5	33
26	Pinning of energy transitions of defects, complexes, and surface states in AlGaIn alloys. Applied Physics Letters, 2020, 116, .	1.5	9
27	(Invited) A Path Toward Vertical GaN Superjunction Devices. ECS Transactions, 2020, 98, 69-79.	0.3	6
28	Oxidative Stress Transcriptional Responses of Escherichia coli at GaN Interfaces. ACS Applied Bio Materials, 2020, 3, 9073-9081.	2.3	1
29	Behavior of E. coli with Variable Surface Morphology Changes on Charged Semiconductor Interfaces. ACS Applied Bio Materials, 2019, 2, 4044-4051.	2.3	5
30	The role of transient surface morphology on composition control in AlGaIn layers and wells. Applied Physics Letters, 2019, 114, .	1.5	14
31	Quasi-phase-matched second harmonic generation of UV light using AlN waveguides. Applied Physics Letters, 2019, 114, .	1.5	25
32	Quantum Well-Width Dependence Study on AlGaIn Based UVC Laser. , 2019, , .		0
33	Al Rich AlGaIn Based APDs on Single Crystal AlN with Solar Blindness and Room Temperature Operation. , 2019, , .		3
34	Design of AlGaIn-based quantum structures for low threshold UVC lasers. Journal of Applied Physics, 2019, 126, 223101.	1.1	19
35	Probing collective oscillation of d-orbital electrons at the nanoscale. Applied Physics Letters, 2018, 112, 061102.	1.5	1
36	On compensation in Si-doped AlN. Applied Physics Letters, 2018, 112, .	1.5	97

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37	Improvement in detection limit for time-of-flight SIMS analysis of dopants in GaN structures. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2018, 36, 03F102.	0.6	7
38	Doping and compensation in Al-rich AlGaIn grown on single crystal AlN and sapphire by MOCVD. Applied Physics Letters, 2018, 112, .	1.5	107
39	Noninvasive Stimulation of Neurotypic Cells Using Persistent Photoconductivity of Gallium Nitride. ACS Omega, 2018, 3, 615-621.	1.6	20
40	Structure of Ultrathin Native Oxides on III-V Nitride Surfaces. ACS Applied Materials & Interfaces, 2018, 10, 10607-10611.	4.0	34
41	On Ni/Au Alloyed Contacts to Mg-Doped GaN. Journal of Electronic Materials, 2018, 47, 305-311.	1.0	17
42	Variably doped nanostructured gallium nitride surfaces can serve as biointerfaces for neurotypic PC12 cells and alter their behavior. RSC Advances, 2018, 8, 36722-36730.	1.7	7
43	Plasma enhanced chemical vapor deposition of SiO ₂ and SiN _x on AlGaIn: Band offsets and interface studies as a function of Al composition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, 061101.	0.9	6
44	Design Challenges for Mid-UV Laser Diodes. , 2018, , .		2
45	Au:Ga Alloyed Clusters to Enhance Al Contacts to P-type GaN. , 2018, , .		0
46	Second-Harmonic Generation of Blue Light in GaN Waveguides. Applied Sciences (Switzerland), 2018, 8, 1218.	1.3	10
47	A thermodynamic supersaturation model for the growth of aluminum gallium nitride by metalorganic chemical vapor deposition. Journal of Applied Physics, 2018, 124, .	1.1	21
48	Thermal conductivity of GaN single crystals: Influence of impurities incorporated in different growth processes. Journal of Applied Physics, 2018, 124, .	1.1	25
49	The influence of point defects on the thermal conductivity of AlN crystals. Journal of Applied Physics, 2018, 123, 185107.	1.1	26
50	On contacts to III-nitride deep-UV emitters. , 2018, , .		0
51	Bulk and Surface Electronic Properties of Inorganic Materials: Tools to Guide Cellular Behavior. Small Methods, 2018, 2, 1800016.	4.6	5
52	Characterization of Pseudomonas aeruginosa Films on Different Inorganic Surfaces before and after UV Light Exposure. Langmuir, 2018, 34, 10806-10815.	1.6	5
53	Defect-free Ni/GaN Schottky barrier behavior with high temperature stability. Applied Physics Letters, 2017, 110, .	1.5	38
54	Persistent Photoconductivity, Nanoscale Topography, and Chemical Functionalization Can Collectively Influence the Behavior of PC12 Cells on Wide Bandgap Semiconductor Surfaces. Small, 2017, 13, 1700481.	5.2	29

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55	Optical signatures of silicon and oxygen related DX centers in AlN. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600749.	0.8	10
56	High free carrier concentration in p-GaN grown on AlN substrates. Applied Physics Letters, 2017, 111, .	1.5	22
57	Defect quasi Fermi level control-based CN reduction in GaN: Evidence for the role of minority carriers. Applied Physics Letters, 2017, 111, 152101.	1.5	14
58	Point defect reduction in MOCVD (Al)GaN by chemical potential control and a comprehensive model of C incorporation in GaN. Journal of Applied Physics, 2017, 122, .	1.1	47
59	Structure and Chemistry of Oxide Surface Reconstructions in III-Nitrides Observed using STEM EELS. Microscopy and Microanalysis, 2017, 23, 1444-1445.	0.2	0
60	HgNO ₃ sensitivity of AlGa _x /Ga _{1-x} N field effect transistors functionalized with phytochelating peptides. AIP Advances, 2016, 6, 065105.	0.6	1
61	The effect of illumination power density on carbon defect configuration in silicon doped GaN. Journal of Applied Physics, 2016, 120, .	1.1	17
62	Selective area epitaxy of magnesium oxide thin films on gallium nitride surfaces. Journal of Materials Research, 2016, 31, 36-45.	1.2	3
63	Atomically Thin MoS ₂ Narrowband and Broadband Light Superabsorbers. ACS Nano, 2016, 10, 7493-7499.	7.3	82
64	Nanoscale topography, semiconductor polarity and surface functionalization: additive and cooperative effects on PC12 cell behavior. RSC Advances, 2016, 6, 97873-97881.	1.7	15
65	Stability and Reliability of III-Nitride Based Biosensors. , 2016, , 149-196.		1
66	Status and challenges in deep UV semiconductor lasers. , 2015, , .		3
67	A conduction model for contacts to Si-doped AlGa _x grown on sapphire and single-crystalline AlN. Journal of Applied Physics, 2015, 117, .	1.1	9
68	Long-term stability assessment of AlGa _x /Ga _{1-x} N field effect transistors modified with peptides: Device characteristics vs. surface properties. AIP Advances, 2015, 5, 097102.	0.6	7
69	Growth and characterization of Al _x Ga _{1-x} N lateral polarity structures. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 1039-1042.	0.8	15
70	Advantages and limitations of UV optoelectronics on AlN substrates. , 2015, , .		0
71	Fermi level control of compensating point defects during metalorganic chemical vapor deposition growth of Si-doped AlGa _x . Applied Physics Letters, 2014, 105, 222101.	1.5	47
72	Schottky contact formation on polar and non-polar AlN. Journal of Applied Physics, 2014, 116, .	1.1	32

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73	The role of the carbon-silicon complex in eliminating deep ultraviolet absorption in AlN. Applied Physics Letters, 2014, 104, .	1.5	59
74	Exciton transitions and oxygen as a donor in <i>m</i> -plane AlN homoepitaxial films. Journal of Applied Physics, 2014, 115, .	1.1	20
75	Polarity characterization by anomalous x-ray dispersion of ZnO films and GaN lateral polar structures. Journal of Applied Physics, 2014, 115, 044912.	1.1	6
76	Homoepitaxial AlN thin films deposited on <i>m</i> -plane (11 $\bar{2}$ 00) AlN substrates by metalorganic chemical vapor deposition. Journal of Applied Physics, 2014, 116, 133517.	1.1	30
77	Stimulated emission and optical gain in AlGaIn heterostructures grown on bulk AlN substrates. Journal of Applied Physics, 2014, 115, .	1.1	56
78	Surface topography and chemistry shape cellular behavior on wide band-gap semiconductors. Acta Biomaterialia, 2014, 10, 2455-2462.	4.1	24
79	Sapphire decomposition and inversion domains in N-polar aluminum nitride. Applied Physics Letters, 2014, 104, .	1.5	29
80	The effect of polarity and surface states on the Fermi level at III-nitride surfaces. Journal of Applied Physics, 2014, 116, .	1.1	75
81	Properties of AlN based lateral polarity structures. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 261-264.	0.8	11
82	Vacancy defects in UV-transparent HVPE-grown AlN. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 405-407.	0.8	4
83	Surface preparation of non-polar single-crystalline AlN substrates. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 454-457.	0.8	9
84	Smooth cubic commensurate oxides on gallium nitride. Journal of Applied Physics, 2014, 115, .	1.1	9
85	Direct Observation of the Polarity Control Mechanism in Aluminum Nitride Grown on Sapphire by Aberration Corrected Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2014, 20, 162-163.	0.2	2
86	Fermi Level Control of Point Defects During Growth of Mg-Doped GaN. Journal of Electronic Materials, 2013, 42, 815-819.	1.0	25
87	Ge doped GaN with controllable high carrier concentration for plasmonic applications. Applied Physics Letters, 2013, 103, .	1.5	45
88	Lasing and longitudinal cavity modes in photo-pumped deep ultraviolet AlGaIn heterostructures. Applied Physics Letters, 2013, 102, .	1.5	104
89	Vacancy compensation and related donor-acceptor pair recombination in bulk AlN. Applied Physics Letters, 2013, 103, .	1.5	80
90	Polarity control and growth of lateral polarity structures in AlN. Applied Physics Letters, 2013, 102, .	1.5	60

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91	Lateral epitaxial overgrowth of nitrogen polar GaN on smooth nitrogen polar GaN templates by metalorganic chemical vapor deposition. Journal of Applied Physics, 2012, 112, .	1.1	3
92	On the origin of the 265-nm absorption band in AlN bulk crystals. Applied Physics Letters, 2012, 100, .	1.5	137
93	Optical identification of silicon as a shallow donor in MOVPE grown homoepitaxial AlN. Physica Status Solidi (B): Basic Research, 2012, 249, 511-515.	0.7	34
94	Sharp bound and free exciton lines from homoepitaxial AlN. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 1520-1522.	0.8	24
95	Characterization of dislocation arrays in AlN single crystals grown by PVT. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 1545-1547.	0.8	37
96	Progress on n-type doping of AlGaIn alloys on AlN single crystal substrates for UV optoelectronic applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2031-2033.	0.8	153
97	Ni/Au Schottky diodes on Al _x Ga _{1-x} N (0.7<x<1) grown on AlN single crystal substrates. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2407-2409.	0.8	37
98	Impact of gallium supersaturation on the growth of n-polar GaN. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 2078-2080.	0.8	24
99	Temperature dependent photoluminescence of lateral polarity junctions of metal organic chemical vapor deposition grown GaN. Journal of Applied Physics, 2011, 110, .	1.1	45
100	Strain in Si doped GaN and the Fermi level effect. Applied Physics Letters, 2011, 98, 202101.	1.5	51
101	Implementation of the GaN lateral polarity junction in a MESFET utilizing polar doping selectivity. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 45-48.	0.8	19
102	Optical properties of InN grown on templates with controlled surface polarities. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 2351-2354.	0.8	7
103	Critical examination of growth rate for magnesium oxide (MgO) thin films deposited by molecular beam epitaxy with a molecular oxygen flux. Journal of Materials Research, 2010, 25, 670-679.	1.2	11
104	X-ray characterization of composition and relaxation of Al _x Ga _{1-x} N (0<x<1) layers grown on GaN/sapphire templates by low pressure organometallic vapor phase epitaxy. Journal of Applied Physics, 2010, 108, .	1.1	30
105	Defect chemistry of nano-grained barium titanate films. Journal of Materials Science, 2008, 43, 38-42.	1.7	9
106	Fabrication of a GaN p/n lateral polarity junction by polar doping selectivity. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 1977-1979.	0.8	8
107	Epitaxial calcium oxide films deposited on gallium nitride surfaces. Journal of Vacuum Science & Technology B, 2007, 25, 1029.	1.3	13
108	Growth of highly resistive Ga-polar GaN by LP-MOVPE. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 2260-2263.	0.8	8

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109	Highly Oriented Diamond Films Grown at High Growth Rate. Materials Research Society Symposia Proceedings, 2006, 956, 1.	0.1	1
110	Growth of Large AlN Single Crystals Along the [0001] Direction. Materials Research Society Symposia Proceedings, 2005, 892, 448.	0.1	3
111	Polarity Control of LP-MOVPE GaN using N ₂ the Carrier Gas. Materials Research Society Symposia Proceedings, 2005, 892, 620.	0.1	2
112	Polarity Control of GaN Films Grown by Metal Organic Chemical Vapor Deposition on (0001) Sapphire Substrates. Materials Research Society Symposia Proceedings, 2004, 831, 25.	0.1	3
113	Self-oriented Growth of GaN Films on Molten Gallium. Materials Research Society Symposia Proceedings, 2004, 831, 182.	0.1	0
114	HIGH FIELD TRANSPORT IN AlN. International Journal of High Speed Electronics and Systems, 2004, 14, 155-174.	0.3	1
115	HIGH FIELD TRANSPORT IN AlN. Selected Topics in Electronics and Systems, 2004, , 155-174.	0.2	0
116	Observations of electron velocity overshoot during high-field transport in AlN. Materials Research Society Symposia Proceedings, 2002, 743, L10.2.1.	0.1	0
117	Electron transport in AlN under high electric fields. Materials Research Society Symposia Proceedings, 2001, 693, 666.	0.1	0
118	Hot Electron Transport in AlN. Materials Research Society Symposia Proceedings, 2000, 639, 11331.	0.1	0