

Ronny Kirste

List of Publications by Year in descending order

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86
papers

2,431
citations

201575

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223716

46
g-index

86
all docs

86
docs citations

86
times ranked

2117
citing authors

#	ARTICLE	IF	CITATIONS
1	The 2020 UV emitter roadmap. Journal Physics D: Applied Physics, 2020, 53, 503001.	1.3	289
2	On the origin of the 265-nm absorption band in AlN bulk crystals. Applied Physics Letters, 2012, 100, .	1.5	137
3	Lasing and longitudinal cavity modes in photo-pumped deep ultraviolet AlGaIn heterostructures. Applied Physics Letters, 2013, 102, .	1.5	104
4	Polarity Control in Group-III Nitrides beyond Pragmatism. Physical Review Applied, 2016, 5, .	1.5	94
5	Atomically Thin MoS ₂ Narrowband and Broadband Light Superabsorbers. ACS Nano, 2016, 10, 7493-7499.	7.3	82
6	Vacancy compensation and related donor-acceptor pair recombination in bulk AlN. Applied Physics Letters, 2013, 103, .	1.5	80
7	Correlation between mobility collapse and carbon impurities in Si-doped GaN grown by low pressure metalorganic chemical vapor deposition. Journal of Applied Physics, 2016, 120, .	1.1	68
8	Electronic Biosensors Based on III-Nitride Semiconductors. Annual Review of Analytical Chemistry, 2015, 8, 149-169.	2.8	66
9	Polarity control and growth of lateral polarity structures in AlN. Applied Physics Letters, 2013, 102, .	1.5	60
10	The role of the carbon-silicon complex in eliminating deep ultraviolet absorption in AlN. Applied Physics Letters, 2014, 104, .	1.5	59
11	Charge neutrality levels, barrier heights, and band offsets at polar AlGaIn. Applied Physics Letters, 2015, 107, .	1.5	59
12	Stimulated emission and optical gain in AlGaIn heterostructures grown on bulk AlN substrates. Journal of Applied Physics, 2014, 115, .	1.1	56
13	Compensation effects in GaN:Mg probed by Raman spectroscopy and photoluminescence measurements. Journal of Applied Physics, 2013, 113, .	1.1	49
14	Fermi level control of compensating point defects during metalorganic chemical vapor deposition growth of Si-doped AlGaIn. Applied Physics Letters, 2014, 105, 222101.	1.5	47
15	Point defect reduction in MOCVD (Al)GaIn by chemical potential control and a comprehensive model of C incorporation in GaN. Journal of Applied Physics, 2017, 122, .	1.1	47
16	6 kW/cm ² UVC laser threshold in optically pumped lasers achieved by controlling point defect formation. Applied Physics Express, 2018, 11, 082101.	1.1	46
17	Temperature dependent photoluminescence of lateral polarity junctions of metal organic chemical vapor deposition grown GaIn. Journal of Applied Physics, 2011, 110, .	1.1	45
18	Ge doped GaIn with controllable high carrier concentration for plasmonic applications. Applied Physics Letters, 2013, 103, .	1.5	45

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19	Effects of strain on the valence band structure and exciton-polariton energies in ZnO. Physical Review B, 2013, 88, .	1.1	42
20	Thermal conductivity of single-crystalline AlN. Applied Physics Express, 2018, 11, 071001.	1.1	42
21	Structure of Ultrathin Native Oxides on III-Nitride Surfaces. ACS Applied Materials & Interfaces, 2018, 10, 10607-10611.	4.0	34
22	The role of chemical potential in compensation control in Si:AlGaIn. Journal of Applied Physics, 2020, 127, .	1.1	34
23	Schottky contact formation on polar and non-polar AlN. Journal of Applied Physics, 2014, 116, .	1.1	32
24	Homoepitaxial AlN thin films deposited on m-plane (111̄00) AlN substrates by metalorganic chemical vapor deposition. Journal of Applied Physics, 2014, 116, 133517.	1.1	30
25	Sapphire decomposition and inversion domains in N-polar aluminum nitride. Applied Physics Letters, 2014, 104, .	1.5	29
26	Nanostructure surface patterning of GaN thin films and application to AlGaIn/AlN multiple quantum wells: A way towards light extraction efficiency enhancement of III-nitride based light emitting diodes. Journal of Applied Physics, 2015, 117, 113107.	1.1	29
27	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
28	Anti-phase domains in cubic GaN. Journal of Applied Physics, 2011, 110, .	1.1	26
29	Refractive index of III-metal-polar and N-polar AlGaIn waveguides grown by metal organic chemical vapor deposition. Applied Physics Letters, 2013, 102, .	1.5	26
30	The influence of point defects on the thermal conductivity of AlN crystals. Journal of Applied Physics, 2018, 123, 185107.	1.1	26
31	Fermi Level Control of Point Defects During Growth of Mg-Doped GaN. Journal of Electronic Materials, 2013, 42, 815-819.	1.0	25
32	Thermal conductivity of GaN single crystals: Influence of impurities incorporated in different growth processes. Journal of Applied Physics, 2018, 124, .	1.1	25
33	Quasi-phase-matched second harmonic generation of UV light using AlN waveguides. Applied Physics Letters, 2019, 114, .	1.5	25
34	High <i>n</i> -type conductivity and carrier concentration in Si-implanted homoepitaxial AlN. Applied Physics Letters, 2021, 118, .	1.5	25
35	Status of the growth and fabrication of AlGaIn-based UV laser diodes for near and mid-UV wavelength. Journal of Materials Research, 2021, 36, 4638-4664.	1.2	25
36	The polarization field in Al-rich AlGaIn multiple quantum wells. Japanese Journal of Applied Physics, 2019, 58, SCCC10.	0.8	23

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37	High free carrier concentration in p-GaN grown on AlN substrates. Applied Physics Letters, 2017, 111, .	1.5	22
38	Optical nonlinear and electro-optical coefficients in bulk aluminium nitride single crystals. Physica Status Solidi (B): Basic Research, 2017, 254, 1700077.	0.7	21
39	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
40	Exciton transitions and oxygen as a donor in <i>m</i> -plane AlN homoepitaxial films. Journal of Applied Physics, 2014, 115, .	1.1	20
41	Noninvasive Stimulation of Neurotypic Cells Using Persistent Photoconductivity of Gallium Nitride. ACS Omega, 2018, 3, 615-621.	1.6	20
42	Shallow Si donor in ion-implanted homoepitaxial AlN. Applied Physics Letters, 2020, 116, .	1.5	20
43	Raman and Photoluminescence Spectroscopic Detection of Surface-Bound Li+O ₂ ^{•-} Defect Sites in Li-Doped ZnO Nanocrystals Derived from Molecular Precursors. ChemPhysChem, 2011, 12, 1189-1195.	1.0	19
44	Nonlinear analysis of vanadium- and titanium-based contacts to Al-rich n-AlGaIn. Japanese Journal of Applied Physics, 2017, 56, 100302.	0.8	19
45	Design of AlGaIn-based quantum structures for low threshold UVC lasers. Journal of Applied Physics, 2019, 126, 223101.	1.1	19
46	The effect of illumination power density on carbon defect configuration in silicon doped GaN. Journal of Applied Physics, 2016, 120, .	1.1	17
47	On Ni/Au Alloyed Contacts to Mg-Doped GaN. Journal of Electronic Materials, 2018, 47, 305-311.	1.0	17
48	Fabrication and characterization of lateral polar GaN structures for second harmonic generation. Proceedings of SPIE, 2013, , .	0.8	15
49	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
50	Nanoscale topography, semiconductor polarity and surface functionalization: additive and cooperative effects on PC12 cell behavior. RSC Advances, 2016, 6, 97873-97881.	1.7	15
51	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
52	The nature of the DX state in Ge-doped AlGaIn. Applied Physics Letters, 2020, 116, .	1.5	14
53	Doping and compensation in heavily Mg doped Al-rich AlGaIn films. Applied Physics Letters, 2022, 120, .	1.5	12
54	Properties of AlN based lateral polarity structures. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 261-264.	0.8	11

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55	Optical characterization of Al- and N-polar AlN waveguides for integrated optics. Applied Physics Express, 2015, 8, 042603.	1.1	11
56	Performance improvement of ohmic contacts on Al-rich n-AlGaIn grown on single crystal AlN substrate using reactive ion etching surface treatment. Applied Physics Express, 2017, 10, 071001.	1.1	11
57	Point defect management in GaN by Fermi-level control during growth. Proceedings of SPIE, 2014, , .	0.8	10
58	Optical properties of aluminum nitride single crystals in the THz region. Optical Materials Express, 2015, 5, 2106.	1.6	10
59	Second-Harmonic Generation of Blue Light in GaN Waveguides. Applied Sciences (Switzerland), 2018, 8, 1218.	1.3	10
60	Study on avalanche breakdown and Poole-Frenkel emission in Al-rich AlGaIn grown on single crystal AlN. Applied Physics Letters, 2021, 119, .	1.5	10
61	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
62	Record $>10^8$ MV/cm mesa breakdown fields in Al _{0.85} Ga _{0.15} N/Al _{0.6} Ga _{0.4} N high electron mobility transistors on native AlN substrates. Applied Physics Letters, 2022, 120, .	1.5	9
63	Bioelectronics communication: encoding yeast regulatory responses using nanostructured gallium nitride thin films. Nanoscale, 2018, 10, 11506-11516.	2.8	8
64	GaN lateral polar junction arrays with 3D control of doping by supersaturation modulated growth: A path toward III-nitride superjunctions. Journal of Applied Physics, 2022, 131, 015703.	1.1	8
65	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
66	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
67	Pseudomorphic growth of thick Al _{0.6} Ga _{0.4} N epilayers on AlN substrates. Applied Physics Letters, 2022, 120, .	1.5	7
68	Bulk and Surface Electronic Properties of Inorganic Materials: Tools to Guide Cellular Behavior. Small Methods, 2018, 2, 1800016.	4.6	5
69	Behavior of <i>E. coli</i> with Variable Surface Morphology Changes on Charged Semiconductor Interfaces. ACS Applied Bio Materials, 2019, 2, 4044-4051.	2.3	5
70	Structural characteristics of m-plane AlN substrates and homoepitaxial films. Journal of Crystal Growth, 2019, 507, 389-394.	0.7	5
71	Impact of the effective refractive index in AlGaIn-based mid-UV laser structures on waveguiding. Japanese Journal of Applied Physics, 2020, 59, 091001.	0.8	5
72	The role of Ga supersaturation on facet formation in the epitaxial lateral overgrowth of GaN. Applied Physics Letters, 2022, 120, .	1.5	4

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73	Status and challenges in deep UV semiconductor lasers. , 2015, , .		3
74	Interfacial Properties of Doped Semiconductor Materials Can Alter the Behavior of <i>Pseudomonas aeruginosa</i> Films. ACS Applied Electronic Materials, 2019, 1, 1641-1652.	2.0	3
75	A pathway to highly conducting Ge-doped AlGaIn. Journal of Applied Physics, 2021, 130, .	1.1	3
76	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
77	Modulating the Stress Response of <i>E. coli</i> at GaN Interfaces Using Surface Charge, Surface Chemistry, and Genetic Mutations. ACS Applied Bio Materials, 2020, 3, 7211-7218.	2.3	2
78	HgNO ₃ sensitivity of AlGaIn/GaN field effect transistors functionalized with phytochelating peptides. AIP Advances, 2016, 6, 065105.	0.6	1
79	Photoluminescence changes of III-Nitride lateral polarity structures after chemical functionalization. Materials Research Express, 2016, 3, 125906.	0.8	1
80	Stability and Reliability of III-Nitride Based Biosensors. , 2016, , 149-196.		1
81	Improving the Conductivity Limits in Si Doped Al Rich AlGaIn. , 2018, , .		1
82	Dose Rate Considerations for Semiconductor Electronics: Why Current Variations Enable Unique GaN-based Transmission Electron Microscopy. Microscopy and Microanalysis, 2020, 26, 3064-3066.	0.2	1
83	Oxidative Stress Transcriptional Responses of <i>Escherichia coli</i> at GaN Interfaces. ACS Applied Bio Materials, 2020, 3, 9073-9081.	2.3	1
84	Advantages and limitations of UV optoelectronics on AlN substrates. , 2015, , .		0
85	Structure and Chemistry of Oxide Surface Reconstructions in III-Nitrides Observed using STEM EELS. Microscopy and Microanalysis, 2017, 23, 1444-1445.	0.2	0
86	Au:Ga Alloyed Clusters to Enhance Al Contacts to P-type GaN. , 2018, , .		0