

Jong Kyu Kim

List of Publications by Year in descending order

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105
papers

9,444
citations

101384

36
h-index

38300

95
g-index

108
all docs

108
docs citations

108
times ranked

10276
citing authors

#	ARTICLE	IF	CITATIONS
1	Solid-State Light Sources Getting Smart. <i>Science</i> , 2005, 308, 1274-1278.	6.0	3,206
2	Origin of efficiency droop in GaN-based light-emitting diodes. <i>Applied Physics Letters</i> , 2007, 91, .	1.5	1,208
3	White light-emitting diodes: History, progress, and future. <i>Laser and Photonics Reviews</i> , 2017, 11, 1600147.	4.4	557
4	Efficiency droop in light-emitting diodes: Challenges and countermeasures. <i>Laser and Photonics Reviews</i> , 2013, 7, 408-421.	4.4	413
5	Efficient photoelectrochemical hydrogen production from bismuth vanadate-decorated tungsten trioxide helix nanostructures. <i>Nature Communications</i> , 2014, 5, 4775.	5.8	367
6	Flexible Near-Field Wireless Optoelectronics as Subdermal Implants for Broad Applications in Optogenetics. <i>Neuron</i> , 2017, 93, 509-521.e3.	3.8	323
7	Reversible phase modulation and hydrogen storage in multivalent VO ₂ epitaxial thin films. <i>Nature Materials</i> , 2016, 15, 1113-1119.	13.3	237
8	Tailoring Binding Abilities by Incorporating Oxophilic Transition Metals on 3D Nanostructured Ni Arrays for Accelerated Alkaline Hydrogen Evolution Reaction. <i>Journal of the American Chemical Society</i> , 2021, 143, 1399-1408.	6.6	161
9	Unassisted photoelectrochemical water splitting exceeding 7% solar-to-hydrogen conversion efficiency using photon recycling. <i>Nature Communications</i> , 2016, 7, 11943.	5.8	144
10	Ohmic contact formation mechanism of Ni on n-type 4H-SiC. <i>Applied Physics Letters</i> , 2001, 79, 1816-1818.	1.5	132
11	Temperature dependent efficiency droop in GaInN light-emitting diodes with different current densities. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	109
12	Overcoming the fundamental light-extraction efficiency limitations of deep ultraviolet light-emitting diodes by utilizing transverse-magnetic-dominant emission. <i>Light: Science and Applications</i> , 2015, 4, e263-e263.	7.7	108
13	Enhanced Omnidirectional Photovoltaic Performance of Solar Cells Using Multiple Discrete Layer Tailored and Low Refractive Index Anti-Reflection Coatings. <i>Advanced Functional Materials</i> , 2013, 23, 583-590.	7.8	104
14	Improved performance of AlGaIn-based deep ultraviolet light-emitting diodes with nano-patterned AlN/sapphire substrates. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	87
15	Junction Temperature in Ultraviolet Light-Emitting Diodes. <i>Japanese Journal of Applied Physics</i> , 2005, 44, 7260-7266.	0.8	81
16	Remote heteroepitaxy of GaN microrod heterostructures for deformable light-emitting diodes and wafer recycle. <i>Science Advances</i> , 2020, 6, eaaz5180.	4.7	80
17	Strong light extraction enhancement in GaInN light-emitting diodes by using self-organized nanoscale patterning of p-type GaN. <i>Applied Physics Letters</i> , 2011, 98, .	1.5	76
18	Junction temperature in light-emitting diodes assessed by different methods. , 2005, 5739, 16.		73

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19	Effect of microstructural change on magnetic property of Mn-implanted p-type GaN. Applied Physics Letters, 2003, 82, 583-585.	1.5	69
20	Opto-electronic properties of TiO ₂ nanohelices with embedded HC(NH ₂) ₂ PbI ₃ perovskite solar cells. Journal of Materials Chemistry A, 2015, 3, 9179-9186.	5.2	67
21	Ohmic contact formation mechanism of nonalloyed Pd contacts to p-type GaN observed by positron annihilation spectroscopy. Applied Physics Letters, 1999, 74, 2289-2291.	1.5	62
22	Enhanced overall efficiency of GaInN-based light-emitting diodes with reduced efficiency droop by Al-composition-graded AlGaIn/GaN superlattice electron blocking layer. Applied Physics Letters, 2013, 103, .	1.5	60
23	Room-temperature Ohmic contact on n-type GaN with surface treatment using Cl ₂ inductively coupled plasma. Applied Physics Letters, 2001, 78, 2015-2017.	1.5	58
24	Mechanism for Ohmic contact formation of Ti on n-type GaN investigated using synchrotron radiation photoemission spectroscopy. Journal of Applied Physics, 2002, 91, 9214-9217.	1.1	51
25	Nanostructured Multilayer Tailored-Refractive-Index Antireflection Coating for Glass with Broadband and Omnidirectional Characteristics. Applied Physics Express, 2011, 4, 052503.	1.1	51
26	GaN metal-semiconductor-metal ultraviolet photodetector with IrO ₂ Schottky contact. Applied Physics Letters, 2002, 81, 4655-4657.	1.5	49
27	Fundamental Limitations of Wide-Bandgap Semiconductors for Light-Emitting Diodes. ACS Energy Letters, 2018, 3, 655-662.	8.8	48
28	High-Output and Bending-Tolerant Triboelectric Nanogenerator Based on an Interlocked Array of Surface-Functionalized Indium Tin Oxide Nanohelices. ACS Energy Letters, 2019, 4, 1748-1754.	8.8	48
29	A wafer-scale antireflective protection layer of solution-processed TiO ₂ nanorods for high performance silicon-based water splitting photocathodes. Journal of Materials Chemistry A, 2016, 4, 9477-9485.	5.2	47
30	Arrays of Truncated Cone AlGaIn Deep-Ultraviolet Light-Emitting Diodes Facilitating Efficient Outcoupling of in-Plane Emission. ACS Photonics, 2016, 3, 2030-2034.	3.2	47
31	Low-resistance Ti/Al ohmic contact on undoped ZnO. Journal of Electronic Materials, 2002, 31, 868-871.	1.0	46
32	An elegant route to overcome fundamentally-limited light extraction in AlGaIn deep-ultraviolet light-emitting diodes: Preferential outcoupling of strong in-plane emission. Scientific Reports, 2016, 6, 22537.	1.6	46
33	Mechanism of two-dimensional electron gas formation in Al _x Ga _{1-x} N/GaN heterostructures. Applied Physics Letters, 2002, 81, 1249-1251.	1.5	45
34	Multiple Heterojunction in Single Titanium Dioxide Nanoparticles for Novel Metal-Free Photocatalysis. Nano Letters, 2018, 18, 4257-4262.	4.5	45
35	Effects of surface treatment using aqua regia solution on the change of surface band bending of p-type GaN. Journal of Electronic Materials, 2001, 30, 129-133.	1.0	44
36	Hexagonal Boron Nitride for Next-Generation Photonics and Electronics. Advanced Materials, 2023, 35, .	11.1	43

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37	Wafer-scale and selective-area growth of high-quality hexagonal boron nitride on Ni(111) by metal-organic chemical vapor deposition. <i>Scientific Reports</i> , 2019, 9, 5736.	1.6	42
38	Improved performance of GaN-based blue light emitting diodes with InGaN/GaN multilayer barriers. <i>Applied Physics Letters</i> , 2009, 95, .	1.5	39
39	Epitaxial van der Waals Contacts between Transition-Metal Dichalcogenide Monolayer Polymorphs. <i>Nano Letters</i> , 2019, 19, 1814-1820.	4.5	37
40	Low-resistance and thermally stable ohmic contact on p-type GaN using Pd/Ni metallization. <i>Applied Physics Letters</i> , 2001, 79, 1822-1824.	1.5	36
41	Analysis of the reverse leakage current in AlGaN/GaN Schottky barrier diodes treated with fluorine plasma. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	36
42	Three-Dimensional Metal-Oxide Nanohelix Arrays Fabricated by Oblique Angle Deposition: Fabrication, Properties, and Applications. <i>Nanoscale Research Letters</i> , 2015, 10, 369.	3.1	36
43	Directly Assembled 3D Molybdenum Disulfide on Silicon Wafer for Efficient Photoelectrochemical Water Reduction. <i>Advanced Sustainable Systems</i> , 2018, 2, 1700142.	2.7	36
44	A Highly Sensitive Force Sensor with Fast Response Based on Interlocked Arrays of Indium Tin Oxide Nanosprings toward Human Tactile Perception. <i>Advanced Functional Materials</i> , 2018, 28, 1804132.	7.8	36
45	Temperature-dependent light-output characteristics of GaInN light-emitting diodes with different dislocation densities. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2011, 208, 947-950.	0.8	34
46	Amorphous Tin Oxide Nanohelix Structure Based Electrode for Highly Reversible Na-Ion Batteries. <i>ACS Nano</i> , 2019, 13, 6513-6521.	7.3	34
47	Epitaxial growth of WO ₃ nanoneedles achieved using a facile flame surface treatment process engineering of hole transport and water oxidation reactivity. <i>Journal of Materials Chemistry A</i> , 2018, 6, 19542-19546.	5.2	31
48	Effect of Quantum Barrier Thickness in the Multiple-Quantum-Well Active Region of GaInN/GaN Light-Emitting Diodes. <i>IEEE Photonics Journal</i> , 2013, 5, 1600207-1600207.	1.0	30
49	Three-Dimensional Nanostructured Indium-Tin-Oxide Electrodes for Enhanced Performance of Bulk Heterojunction Organic Solar Cells. <i>Advanced Energy Materials</i> , 2014, 4, 1301566.	10.2	27
50	Electroluminescence induced by photoluminescence excitation in GaInN/GaN light-emitting diodes. <i>Applied Physics Letters</i> , 2009, 95, .	1.5	25
51	Growth and characteristics of GaInN/GaN multiple quantum well light-emitting diodes. <i>Journal of Applied Physics</i> , 2010, 107, 063102.	1.1	24
52	Enhanced catalytic activity of edge-exposed 1T phase WS ₂ grown directly on a WO ₃ nanohelical array for water splitting. <i>Journal of Materials Chemistry A</i> , 2019, 7, 26378-26384.	5.2	23
53	AlGaN Deep-Ultraviolet Light-Emitting Diodes with Localized Surface Plasmon Resonance by a High-Density Array of 40 nm Al Nanoparticles. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 36339-36346.	4.0	23
54	Highly photoresponsive and wavelength-selective circularly-polarized-light detector based on metal-oxides hetero-chiral thin film. <i>Scientific Reports</i> , 2016, 6, 19580.	1.6	21

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55	Pressure-Dependent Growth of Wafer-Scale Few-layer h-BN by Metal-Organic Chemical Vapor Deposition. <i>Crystal Growth and Design</i> , 2017, 17, 2569-2575.	1.4	21
56	Improvements in structural and optical properties of wafer-scale hexagonal boron nitride film by post-growth annealing. <i>Scientific Reports</i> , 2019, 9, 10590.	1.6	21
57	Electrical properties of metal contacts on laser-irradiated n-type GaN. <i>Applied Physics Letters</i> , 2003, 82, 580-582.	1.5	20
58	Current conduction mechanism of Pt/GaN and Pt/Al _{0.35} Ga _{0.65} N Schottky diodes. <i>Journal of Applied Physics</i> , 2003, 94, 7201-7205.	1.1	20
59	Promotion of hole injection enabled by GaInN/GaN light-emitting triodes and its effect on the efficiency droop. <i>Applied Physics Letters</i> , 2011, 99, 181115.	1.5	20
60	Optically functional surface composed of patterned graded-refractive-index coatings to enhance light-extraction of GaInN light-emitting diodes. <i>Journal of Applied Physics</i> , 2011, 110, .	1.1	20
61	Onset of the Efficiency Droop in GaInN Quantum Well Light-Emitting Diodes under Photoluminescence and Electroluminescence Excitation. <i>ACS Photonics</i> , 2015, 2, 1013-1018.	3.2	20
62	Role of hydrogen carrier gas on the growth of few layer hexagonal boron nitrides by metal-organic chemical vapor deposition. <i>AIP Advances</i> , 2017, 7, .	0.6	20
63	Correlative High-Resolution Mapping of Strain and Charge Density in a Strained Piezoelectric Multilayer. <i>Advanced Materials Interfaces</i> , 2015, 2, 1400281.	1.9	18
64	Enhanced light extraction efficiency of micro-ring array AlGaIn deep ultraviolet light-emitting diodes. <i>Japanese Journal of Applied Physics</i> , 2017, 56, 092101.	0.8	18
65	Resistive Switching in Few-Layer Hexagonal Boron Nitride Mediated by Defects and Interfacial Charge Transfer. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 46288-46295.	4.0	18
66	Microwave-assisted evolution of WO ₃ and WS ₂ /WO ₃ hierarchical nanotrees. <i>Journal of Materials Chemistry A</i> , 2020, 8, 9654-9660.	5.2	18
67	Low Temperature Solution-Processable Cesium Lead Bromide Microcrystals for Light Conversion. <i>Crystal Growth and Design</i> , 2018, 18, 3161-3166.	1.4	16
68	Microwave-assisted synthesis of group 5 transition metal dichalcogenide thin films. <i>Journal of Materials Chemistry C</i> , 2018, 6, 11303-11311.	2.7	14
69	ZnFe ₂ O ₄ Dendrite/SnO ₂ Helix 3D Hetero-Structure Photoanodes for Enhanced Photoelectrochemical Water Splitting: Triple Functions of SnO ₂ Nanohelix. <i>Small</i> , 2021, 17, e2103861.	5.2	14
70	Gate-tunable gas sensing behaviors in air-stable ambipolar organic thin-film transistors. <i>RSC Advances</i> , 2020, 10, 1910-1916.	1.7	14
71	Microstructural and electrical investigation of Ni/Au ohmic contact on p-type GaN. <i>Journal of Electronic Materials</i> , 2001, 30, L8-L12.	1.0	13
72	Characteristics of blue and ultraviolet light-emitting diodes with current density and temperature. <i>Electronic Materials Letters</i> , 2010, 6, 51-53.	1.0	13

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73	Three-Dimensional Branched Nanowire Heterostructures as Efficient Light-Extraction Layer in Light-Emitting Diodes. <i>Advanced Functional Materials</i> , 2014, 24, 3384-3391.	7.8	13
74	The Effect of Imbalanced Carrier Transport on the Efficiency Droop in GaInN-Based Blue and Green Light-Emitting Diodes. <i>Energies</i> , 2017, 10, 1277.	1.6	13
75	Observation of space-charge-limited current in AlGaIn/GaN ultraviolet light-emitting diodes. <i>Materials Letters</i> , 2018, 214, 217-219.	1.3	11
76	Performance of Recessed Anode AlGaIn/GaN Schottky Barrier Diode Passivated With High-Temperature Atomic Layer-Deposited Al ₂ O ₃ Layer. <i>IEEE Transactions on Electron Devices</i> , 2019, 66, 324-329.	1.6	11
77	Effects of surface treatments on the electrical and the microstructural changes of Pd contact on p-type GaN. <i>Journal of Electronic Materials</i> , 2001, 30, 170-174.	1.0	10
78	Defect-Mediated In-Plane Electrical Conduction in Few-Layer sp ² -Hybridized Boron Nitrides. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 17287-17294.	4.0	10
79	Microstructural study of Pt contact on p-type GaN. <i>Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2003, 21, 87.	1.6	9
80	Carrier transport mechanism of AlGaIn/GaN Schottky barrier diodes with various Al mole fractions. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2012, 9, 851-854.	0.8	9
81	Reduction of efficiency droop in GaInN/GaN light-emitting diodes with thick AlGaIn cladding layers. <i>Electronic Materials Letters</i> , 2012, 8, 1-4.	1.0	9
82	Visible Color Tunable Emission in Three-Dimensional Light Emitting Diodes by MgO Passivation of Pyramid Tip. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 27743-27748.	4.0	8
83	Van der Waals Heterostructure of Hexagonal Boron Nitride with an AlGaIn/GaN Epitaxial Wafer for High-Performance Radio Frequency Applications. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 59440-59449.	4.0	8
84	Overcoming ineffective resistance modulation in p-type NiO gas sensor by nanoscale Schottky contacts. <i>Nanotechnology</i> , 2019, 30, 115501.	1.3	7
85	Enhanced phosphor conversion efficiency of GaN-based white light-emitting diodes having dichroic-filtering contacts. <i>Journal of Materials Chemistry C</i> , 2013, 1, 5733.	2.7	6
86	Strong correlation between capacitance and breakdown voltage of GaInN/GaN light-emitting diodes. <i>Electronic Materials Letters</i> , 2014, 10, 1155-1157.	1.0	6
87	Polarization-Engineered High-Efficiency GaInN Light-Emitting Diodes Optimized by Genetic Algorithm. <i>IEEE Photonics Journal</i> , 2015, 7, 1-9.	1.0	6
88	Ohmic contacts for high power LEDs. <i>Physica Status Solidi A</i> , 2004, 201, 2831-2836.	1.7	5
89	Optical and Facet-Dependent Carrier Recombination Properties of Hendecafacet InGaIn/GaN Microsized Light Emitters. <i>Crystal Growth and Design</i> , 2017, 17, 3649-3655.	1.4	5
90	Three-Dimensional Tungsten Disulfide Raman Biosensor for Dopamine Detection. <i>ACS Applied Bio Materials</i> , 2020, 3, 7687-7695.	2.3	5

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91	EFFICIENCY DROOP IN GaInN HIGH-POWER LIGHT-EMITTING DIODES. International Journal of High Speed Electronics and Systems, 2011, 20, 247-265.	0.3	4
92	Electron Holography: Correlative High-Resolution Mapping of Strain and Charge Density in a Strained Piezoelectric Multilayer (Adv. Mater. Interfaces 1/2015). Advanced Materials Interfaces, 2015, 2, .	1.9	3
93	Counter-intuitive junction temperature behavior in AlGaIn-based deep-ultraviolet light-emitting diodes. AIP Advances, 2020, 10, 045135.	0.6	2
94	X-ray Photoemission Determination of the Surface Fermi Level Motion and Pinning on n- and p-GaN during the Formation of Au, Ni, and Ti Metal Contacts. Materials Research Society Symposia Proceedings, 2001, 693, 13.	0.1	1
95	Temperature Dependence of Efficiency in GaInN/GaN Light-Emitting Diodes with a GaInN Underlayer. International Journal of Applied Ceramic Technology, 2016, 13, 234-238.	1.1	1
96	Origin of efficiency droop in GaN-based light-emitting diodes. , 0, .		1
97	Structural Evolution of Ni/Au Contact on GaN(0001). Materials Research Society Symposia Proceedings, 2000, 639, 1171.	0.1	0
98	Color tunable light-emitting diodes with modified pulse-width modulation. Physica Status Solidi - Rapid Research Letters, 2009, 3, 284-286.	1.2	0
99	Modulation of hole-injection in GaInN-light emitting triodes and its effect on carrier recombination behavior. AIP Advances, 2015, 5, 107104.	0.6	0
100	U-shape phenomenon in the efficiency-versus-current curves in AlGaIn-based deep-ultraviolet light-emitting diodes. , 2015, , .		0
101	Direct mapping of strain state in nonpolar InGaIn/GaN multilayers using dark-field inline electron holography. , 2015, , .		0
102	Enhanced light extraction efficiency of AlGaIn-based deep-ultraviolet light-emitting diodes by utilizing strong sidewall emission. , 2015, , .		0
103	Force Sensors: A Highly Sensitive Force Sensor with Fast Response Based on Interlocked Arrays of Indium Tin Oxide Nanosprings toward Human Tactile Perception (Adv. Funct. Mater. 42/2018). Advanced Functional Materials, 2018, 28, 1870304.	7.8	0
104	Transfer or delivery of micro light-emitting diodes for light-emitting diode displays. AIP Advances, 2019, 9, 100901.	0.6	0
105	Tailoring Binding Abilities By Incorporating Oxophilic Transition Metals on 3D Nanostructured Ni Arrays for Accelerated Alkaline Hydrogen Evolution Reaction. ECS Meeting Abstracts, 2022, MA2022-01, 1386-1386.	0.0	0