Wan Ki Bae

List of Publications by Year
in descending order

101 papers	9,336 citations	50276 46 h-index	38395 95 g-index
102 all docs	102 docs citations	102 times ranked	7892 citing authors

#	Article	IF	Citations
1	Bright and Efficient Full-Color Colloidal Quantum Dot Light-Emitting Diodes Using an Inverted Device Structure. Nano Letters, 2012, 12, 2362-2366.	9.1	817
2	Spectroscopic and Device Aspects of Nanocrystal Quantum Dots. Chemical Reviews, 2016, 116, 10513-10622.	47.7	744
3	Controlling the influence of Auger recombination on the performance of quantum-dot light-emitting diodes. Nature Communications, 2013, 4, 2661.	12.8	605
4	Single-Step Synthesis of Quantum Dots with Chemical Composition Gradients. Chemistry of Materials, 2008, 20, 531-539.	6.7	462
5	Controlled Alloying of the Coreâ€"Shell Interface in CdSe/CdS Quantum Dots for Suppression of Auger Recombination. ACS Nano, 2013, 7, 3411-3419.	14.6	417
6	Highly Efficient Cadmium-Free Quantum Dot Light-Emitting Diodes Enabled by the Direct Formation of Excitons within InP@ZnSeS Quantum Dots. ACS Nano, 2013, 7, 9019-9026.	14.6	326
7	Highly Efficient Greenâ€Lightâ€Emitting Diodes Based on CdSe@ZnS Quantum Dots with a Chemicalâ€Composition Gradient. Advanced Materials, 2009, 21, 1690-1694.	21.0	265
8	Influence of Shell Thickness on the Performance of Lightâ€Emitting Devices Based on CdSe/Zn_{1â€X}Cd_XS Core/Shell Heterostructured Quantum Dots. Advanced Materials, 2014, 26, 8034-8040.	21.0	250
9	InP@ZnSeS, Core@Composition Gradient Shell Quantum Dots with Enhanced Stability. Chemistry of Materials, 2011, 23, 4459-4463.	6.7	239
10	Auger Recombination of Biexcitons and Negative and Positive Trions in Individual Quantum Dots. ACS Nano, 2014, 8, 7288-7296.	14.6	234
11	Highly Effective Surface Passivation of PbSe Quantum Dots through Reaction with Molecular Chlorine. Journal of the American Chemical Society, 2012, 134, 20160-20168.	13.7	221
12	Multicolored Light-Emitting Diodes Based on All-Quantum-Dot Multilayer Films Using Layer-by-Layer Assembly Method. Nano Letters, 2010, 10, 2368-2373.	9.1	216
13	R/G/B/Natural White Light Thin Colloidal Quantum Dotâ€Based Lightâ€Emitting Devices. Advanced Materials, 2014, 26, 6387-6393.	21.0	193
14	Effect of the Core/Shell Interface on Auger Recombination Evaluated by Single-Quantum-Dot Spectroscopy. Nano Letters, 2014, 14, 396-402.	9.1	188
15	Gram-Scale One-Pot Synthesis of Highly Luminescent Blue Emitting Cd_{1â^'<i>x</i>}Zn_{<i>x</i>}S/ZnS Nanocrystals. Chemistry of Materials, 2008, 20, 5307-5313.	6.7	169
16	Effect of Auger Recombination on Lasing in Heterostructured Quantum Dots with Engineered Core/Shell Interfaces. Nano Letters, 2015, 15, 7319-7328.	9.1	163
17	Carrier Multiplication in Semiconductor Nanocrystals: Influence of Size, Shape, and Composition. Accounts of Chemical Research, 2013, 46, 1261-1269.	15.6	161
18	Quantum Dotâ^'Block Copolymer Hybrids with Improved Properties and Their Application to Quantum Dot Light-Emitting Devices. ACS Nano, 2009, 3, 1063-1068.	14.6	132

#	ARTICLE	IF	CITATIONS
19	Aspect Ratio Dependence of Auger Recombination and Carrier Multiplication in PbSe Nanorods. Nano Letters, 2013, 13, 1092-1099.	9.1	123
20	Unraveling the Origin of Operational Instability of Quantum Dot Based Light-Emitting Diodes. ACS Nano, 2018, 12, 10231-10239.	14.6	123
21	Perspective on synthesis, device structures, and printing processes for quantum dot displays. Optical Materials Express, 2012, 2, 594.	3.0	120
22	Colloidal Spherical Quantum Wells with Near-Unity Photoluminescence Quantum Yield and Suppressed Blinking. ACS Nano, 2016, 10, 9297-9305.	14.6	119
23	High-resolution patterning of colloidal quantum dots via non-destructive, light-driven ligand crosslinking. Nature Communications, 2020, 11, 2874.	12.8	114
24	Design Principle for Bright, Robust, and Color-Pure InP/ZnSe<i>_x</i>S_{1â€“<i>x</i>}/ZnS Heterostructures. Chemistry of Materials, 2019, 31, 3476-3484.	6.7	112
25	Bright and Stable Quantum Dot Lightâ€Emitting Diodes. Advanced Materials, 2022, 34, e2106276.	21.0	109
26	Generalized Synthesis of Hybrid Metalâ€“Semiconductor Nanostructures Tunable from the Visible to the Infrared. ACS Nano, 2012, 6, 3832-3840.	14.6	99
27	Placement Control of Nanomaterial Arrays on the Surface-Reconstructed Block Copolymer Thin Films. ACS Nano, 2009, 3, 3927-3934.	14.6	91
28	Spectroscopic insights into the performance of quantum dot light-emitting diodes. MRS Bulletin, 2013, 38, 721-730.	3.5	91
29	Characterization of Quantum Dot/Conducting Polymer Hybrid Films and Their Application to Lightâ€Emitting Diodes. Advanced Materials, 2009, 21, 5022-5026.	21.0	90
30	Low-coordinated surface atoms of CuPt alloy cocatalysts on TiO₂for enhanced photocatalytic conversion of CO₂. Nanoscale, 2016, 8, 10043-10048.	5.6	80
31	Free-Standing Nanocomposite Multilayers with Various Length Scales, Adjustable Internal Structures, and Functionalities. Journal of the American Chemical Society, 2009, 131, 2579-2587.	13.7	77
32	IIIâ€“V colloidal nanocrystals: control of covalent surfaces. Chemical Science, 2020, 11, 913-922.	7.4	77
33	Controlled Synthesis of CdSe Tetrapods with High Morphological Uniformity by the Persistent Kinetic Growth and the Halide-Mediated Phase Transformation. Chemistry of Materials, 2013, 25, 1443-1449.	6.7	75
34	Role of Surface States in Photocatalysis: Study of Chlorine-Passivated CdSe Nanocrystals for Photocatalytic Hydrogen Generation. Chemistry of Materials, 2016, 28, 962-968.	6.7	71
35	Multifunctional Dendrimer Ligands for High-Efficiency, Solution-Processed Quantum Dot Light-Emitting Diodes. ACS Nano, 2017, 11, 684-692.	14.6	70
36	A Bioinspired Stretchable Sensoryâ€Neuromorphic System. Advanced Materials, 2021, 33, e2104690.	21.0	67

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37	Dual-Color Electroluminescence from Dot-in-Bulk Nanocrystals. Nano Letters, 2014, 14, 486-494.	9.1	66
38	Dynamic Hole Blockade Yields Two-Color Quantum and Classical Light from Dot-in-Bulk Nanocrystals. Nano Letters, 2013, 13, 321-328.	9.1	60
39	Carrier Multiplication in Quantum Dots within the Framework of Two Competing Energy Relaxation Mechanisms. Journal of Physical Chemistry Letters, 2013, 4, 2061-2068.	4.6	59
40	Deep blue light-emitting diodes based on Cd1â^'xZnxS@ZnS quantum dots. Nanotechnology, 2009, 20, 075202.	2.6	58
41	Effect of Core/Shell Interface on Carrier Dynamics and Optical Gain Properties of Dual-Color Emitting CdSe/CdS Nanocrystals. ACS Nano, 2016, 10, 6877-6887.	14.6	57
42	Toward highâ€resolution, inkjetâ€printed, quantum dot lightâ€emitting diodes for nextâ€generation displays. Journal of the Society for Information Display, 2016, 24, 545-551.	2.1	55
43	Highly Efficient and Bright Inverted Topâ€Emitting InP Quantum Dot Lightâ€Emitting Diodes Introducing a Holeâ€Suppressing Interlayer. Small, 2019, 15, e1905162.	10.0	54
44	Zincâ€"Phosphorus Complex Working as an Atomic Valve for Colloidal Growth of Monodisperse Indium Phosphide Quantum Dots. Chemistry of Materials, 2017, 29, 6346-6355.	6.7	53
45	Interface polarization in heterovalent coreâ€"shell nanocrystals. Nature Materials, 2022, 21, 246-252.	27.5	52
46	Pushing the Efficiency Envelope for Semiconductor Nanocrystal-Based Electroluminescence Devices Using Anisotropic Nanocrystals. Chemistry of Materials, 2019, 31, 3066-3082.	6.7	51
47	Performance Limits of Luminescent Solar Concentrators Tested with Seed/Quantum-Well Quantum Dots in a Selective-Reflector-Based Optical Cavity. Nano Letters, 2018, 18, 395-404.	9.1	46
48	Direct Cd-to-Pb Exchange of CdSe Nanorods into PbSe/CdSe Axial Heterojunction Nanorods. Chemistry of Materials, 2015, 27, 5295-5304.	6.7	45
49	Multiexciton Dynamics in Infrared-Emitting Colloidal Nanostructures Probed by a Superconducting Nanowire Single-Photon Detector. ACS Nano, 2012, 6, 9532-9540.	14.6	43
50	Multidentate Polysarcosine-Based Ligands for Water-Soluble Quantum Dots. Macromolecules, 2016, 49, 3663-3671.	4.8	43
51	Enhanced Performance of Pixelated Quantum Dot Lightâ€Emitting Diodes by Inkjet Printing of Quantum Dotâ€"Polymer Composites. Advanced Optical Materials, 2021, 9, 2002129.	7.3	39
52	Enhanced Lifetime and Efficiency of Red Quantum Dot Lightâ€Emitting Diodes with Yâ€Doped ZnO Solâ€"Gel Electronâ€Transport Layers by Reducing Excess Electron Injection. Advanced Quantum Technologies, 2018, 1, 1700006.	3.9	38
53	Direct Photolithographic Patterning of Colloidal Quantum Dots Enabled by UV-Crosslinkable and Hole-Transporting Polymer Ligands. ACS Applied Materials & Interfaces, 2020, 12, 42153-42160.	8.0	38
54	Reduced efficiency roll-off in light-emitting diodes enabled by quantum dotâ€"conducting polymer nanohybrids. Journal of Materials Chemistry C, 2014, 2, 4974-4979.	5.5	36

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55	Colloidal Dual-Diameter and Core-Position-Controlled Core/Shell Cadmium Chalcogenide Nanorods. ACS Nano, 2017, 11, 12461-12472.	14.6	36
56	Chemically resistant and thermally stable quantum dots prepared by shell encapsulation with cross-linkable block copolymer ligands. NPG Asia Materials, 2020, 12, .	7.9	36
57	Controlling Ion-Exchange Balance and Morphology in Cation Exchange from Cu_{3â€“<i>x</i>}P Nanoplatelets into InP Crystals. Chemistry of Materials, 2019, 31, 1990-2001.	6.7	35
58	The Role of Emission Layer Morphology on the Enhanced Performance of Lightâ€Emitting Diodes Based on Quantum Dotâ€Semiconducting Polymer Hybrids. Advanced Materials Interfaces, 2016, 3, 1600279.	3.7	33
59	Highly luminescent silica-coated CdS/CdSe/CdS nanoparticles with strong chemical robustness and excellent thermal stability. Nanotechnology, 2017, 28, 185603.	2.6	33
60	Origin of Shape-Dependent Fluorescence Polarization from CdSe Nanoplatelets. Journal of Physical Chemistry C, 2017, 121, 24837-24844.	3.1	33
61	Tailoring the Electronic Landscape of Quantum Dot Light-Emitting Diodes for High Brightness and Stable Operation. ACS Nano, 2020, 14, 17496-17504.	14.6	33
62	The effect of band gap alignment on the hole transport from semiconducting block copolymers to quantum dots. Journal of Materials Chemistry C, 2013, 1, 1722.	5.5	32
63	Soft Contact Transplanted Nanocrystal Quantum Dots for Light-Emitting Diodes: Effect of Surface Energy on Device Performance. ACS Applied Materials & Interfaces, 2015, 7, 10828-10833.	8.0	31
64	Electrochemical Control of Two-Color Emission from Colloidal Dot-in-Bulk Nanocrystals. Nano Letters, 2014, 14, 3855-3863.	9.1	30
65	Twoâ€Color Emitting Colloidal Nanocrystals as Singleâ€Particle Ratiometric Probes of Intracellular pH. Advanced Functional Materials, 2017, 27, 1605533.	14.9	30
66	Interfacial engineering of core/shell heterostructured nanocrystal quantum dots for light-emitting applications. Journal of Information Display, 2017, 18, 57-65.	4.0	30
67	Ligand-Asymmetric Janus Quantum Dots for Efficient Blue-Quantum Dot Light-Emitting Diodes. ACS Applied Materials & Interfaces, 2018, 10, 22453-22459.	8.0	30
68	Depletion-Mediated Interfacial Assembly of Semiconductor Nanorods. Nano Letters, 2019, 19, 963-970.	9.1	28
69	Surface state-induced barrierless carrier injection in quantum dot electroluminescent devices. Nature Communications, 2021, 12, 5669.	12.8	27
70	Single-Particle Ratiometric Pressure Sensing Based on â€œDouble-Sensorâ€•Colloidal Nanocrystals. Nano Letters, 2017, 17, 1071-1081.	9.1	26
71	Stacking of Colloidal CdSe Nanoplatelets into Twisted Ribbon Superstructures: Origin of Twisting and Its Implication in Optical Properties. Journal of Physical Chemistry C, 2019, 123, 9445-9453.	3.1	25
72	Side-chain conjugated polymers for use in the active layers of hybrid semiconducting polymer/quantum dot light emitting diodes. Polymer Chemistry, 2016, 7, 101-112.	3.9	24

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73	Single-Layered Films of Diblock Copolymer Micelles Containing Quantum Dots and Fluorescent Dyes and Their Fluorescence Resonance Energy Transfer. Chemistry of Materials, 2008, 20, 4185-4187.	6.7	23
74	Nanostructured colloidal quantum dots for efficient electroluminescence devices. Korean Journal of Chemical Engineering, 2019, 36, 173-185.	2.7	23
75	Robust, processable, and bright quantum dot/organosilicate hybrid films with uniform QD distribution based on thiol-containing organosilicate ligands. Journal of Materials Chemistry C, 2013, 1, 1983.	5.5	20
76	Assemblies of Colloidal CdSe Tetrapod Nanocrystals with Lengthy Arms for Flexible Thin-Film Transistors. Nano Letters, 2017, 17, 2433-2439.	9.1	20
77	â€œPositive Incentiveâ€•Approach To Enhance the Operational Stability of Quantum Dot-Based Light-Emitting Diodes. ACS Applied Materials & Interfaces, 2019, 11, 40252-40259.	8.0	20
78	Efficient Optical Gain in Spherical Quantum Wells Enabled by Engineering Biexciton Interactions. ACS Photonics, 2020, 7, 2252-2264.	6.6	20
79	Colorful opaque photovoltaic modules with down-converting InP/ZnSexS1-x quantum dot layers. Nano Energy, 2020, 77, 105169.	16.0	20
80	Simple Yet Effective Method to Determine Multiphoton Absorption Cross Section of Colloidal Semiconductor Nanocrystals. ACS Photonics, 2020, 7, 1806-1812.	6.6	20
81	Surface Engineered Colloidal Quantum Dots for Complete Green Process. ACS Applied Materials & Interfaces, 2020, 12, 10563-10570.	8.0	20
82	Simultaneous Existence of Confined and Delocalized Vibrational Modes in Colloidal Quantum Dots. Journal of Physical Chemistry Letters, 2019, 10, 6144-6150.	4.6	19
83	Pushing the Band Gap Envelope of Quasi-Type II Heterostructured Nanocrystals to Blue: ZnSe/ZnSe _{1- <i>X</i>} Te <i> _X </i> /ZnSe Spherical Quantum Wells. Energy Material Advances, 2021, 2021, .	11.0	19
84	Steering Interface Dipoles for Bright and Efficient All-Inorganic Quantum Dot Based Light-Emitting Diodes. ACS Nano, 2021, 15, 20332-20340.	14.6	18
85	Environmentally benign nanocrystals: challenges and future directions. Journal of Information Display, 2019, 20, 61-72.	4.0	15
86	Transient Dynamics of Charges and Excitons in Quantum Dot Lightâ€Emitting Diodes. Small, 2022, 18, .	10.0	15
87	Controlled Vortex Formation and Facilitated Energy Transfer within Aggregates of Colloidal CdS Nanorods. Chemistry of Materials, 2015, 27, 2797-2802.	6.7	14
88	Direct cation exchange of CdSe nanocrystals into ZnSe enabled by controlled binding between guest cations and organic ligands. Nanoscale, 2019, 11, 15072-15082.	5.6	12
89	Magnetron-sputtered amorphous V2O5 hole injection layer for high performance quantum dot light-emitting diode. Journal of Alloys and Compounds, 2021, 878, 160303.	5.5	12
90	Nondestructive Direct Photolithography for Patterning Quantum Dot Films by Atomic Layer Deposition of ZnO. Advanced Materials Interfaces, 2022, 9, .	3.7	11

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91	Synthesis of InP nanocrystals using triphenyl phosphite as phosphorus source. Korean Journal of Chemical Engineering, 2019, 36, 1518-1526.	2.7	9
92	Origin of enhanced efficiency and stability in diblock copolymer-grafted Cd-free quantum dot-based light-emitting diodes. Journal of Materials Chemistry C, 2021, 9, 10398-10405.	5.5	9
93	Highly Efficient, Surface Ligand Modified Quantum Dot Lightâ€Emitting Diodes Driven by Typeâ€Controllable MoTe₂ Thin Film Transistors via Electron Charge Enhancer. Advanced Electronic Materials, 2021, 7, 2100535.	5.1	9
94	Quantum-dot and organic hybrid light-emitting diodes employing a blue common layer for simple fabrication of full-color displays. Nano Research, 2022, 15, 6477-6482.	10.4	8
95	Surface Polarity-Insensitive Organosilicasome-Based Clustering of Nanoparticles with Intragap Distance Tunability. Chemistry of Materials, 2021, 33, 5257-5267.	6.7	7
96	Dual-Emitting Dot-in-Bulk CdSe/CdS Nanocrystals with Highly Emissive Core- and Shell-Based Trions Sharing the Same Resident Electron. Nano Letters, 2019, 19, 8846-8854.	9.1	6
97	38.4: Fullâ€Color Patterning of Quantum Dot (QD) Lightâ€Emitting Diodes using QD Transplanting Techniques. Digest of Technical Papers SID International Symposium, 2011, 42, 526-528.	0.3	3
98	Influence of External Pressure on the Performance of Quantum Dot Solar Cells. ACS Applied Materials & Interfaces, 2016, 8, 23947-23952.	8.0	3
99	Sample Concentration Affects Optical Gain Results in Colloidal Nanomaterials: Circumventing the Distortions by Below Band Gap Excitation. ACS Photonics, 2022, 9, 156-162.	6.6	3
100	Lightâ€Emitting Electrochemical Cells with Polymerâ€Blended InP/ZnSeS Quantum Dot Active Layer. Advanced Optical Materials, 2020, 8, 2001535.	7.3	2
101	Electroluminescence Devices with Colloidal Quantum Dots. Series in Display Science and Technology, 2021, , 251-270.	0.6	1