Hwan Kyu Kim

List of Publications by Year
in descending order

82 papers	4,772 citations	81900 39 h-index	95266 68 g-index
84 all docs	84 docs citations	84 times ranked	5581 citing authors

#	Article	IF	Citations
1	Rational design criteria for Dâ€“Ï€â€“A structured organic and porphyrin sensitizers for highly efficient dye-sensitized solar cells. Journal of Materials Chemistry A, 2018, 6, 14518-14545.	10.3	256
2	N-Doped Graphene Nanoplatelets as Superior Metal-Free Counter Electrodes for Organic Dye-Sensitized Solar Cells. ACS Nano, 2013, 7, 5243-5250.	14.6	238
3	14.2% Efficiency Dyeâ€Sensitized Solar Cells by Coâ€sensitizing Novel Thieno[3,2â€‹<i>b</i>]indoleâ€Based Organic Dyes with a Promising Porphyrin Sensitizer. Advanced Energy Materials, 2020, 10, 2000124.	19.5	216
4	Direct nitrogen fixation at the edges of graphene nanoplatelets as efficient electrocatalysts for energy conversion. Scientific Reports, 2013, 3, 2260.	3.3	204
5	Significant light absorption enhancement by a single heterocyclic unit change in the Ï€-bridge moiety from thieno[3,2-b]benzothiophene to thieno[3,2-b]indole for high performance dye-sensitized and tandem solar cells. Journal of Materials Chemistry A, 2017, 5, 2297-2308.	10.3	200
6	Porphyrin Sensitizers with Donor Structural Engineering for Superior Performance Dyeâ€Sensitized Solar Cells and Tandem Solar Cells for Water Splitting Applications. Advanced Energy Materials, 2017, 7, 1602117.	19.5	193
7	Edgeâ€Fluorinated Graphene Nanoplatelets as High Performance Electrodes for Dyeâ€Sensitized Solar Cells and Lithium Ion Batteries. Advanced Functional Materials, 2015, 25, 1170-1179.	14.9	174
8	Organic dyes incorporating low-band-gap chromophores based on Ï€-extended benzothiadiazole for dye-sensitized solar cells. Dyes and Pigments, 2011, 91, 192-198.	3.7	160
9	14.8% perovskite solar cells employing carbazole derivatives as hole transporting materials. Chemical Communications, 2014, 50, 14161-14163.	4.1	159
10	Unassisted photoelectrochemical water splitting exceeding 7% solar-to-hydrogen conversion efficiency using photon recycling. Nature Communications, 2016, 7, 11943.	12.8	144
11	Graphene Nanoplatelets Doped with N at its Edges as Metalâ€Free Cathodes for Organic Dyeâ€Sensitized Solar Cells. Advanced Materials, 2014, 26, 3055-3062.	21.0	140
12	Thieno[3,2â€‹<i>b</i>][1]benzothiophene Derivative as a New Ï€â€Bridge Unit in Dâ€“Ï€â€“A Structural Organic Sensitizers with Over 10.47% Efficiency for Dyeâ€Sensitized Solar Cells. Advanced Energy Materials, 2015, 5, 1500300.	19.5	138
13	White Light-Emitting Diodes from Novel Silicon-Based Copolymers Containing Both Electron-Transport Oxadiazole and Hole-Transport Carbazole Moieties in the Main Chainâ€. Macromolecules, 2002, 35, 6782-6791.	4.8	114
14	Novel Carbazole-Based Hole-Transporting Materials with Star-Shaped Chemical Structures for Perovskite-Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2015, 7, 22213-22217.	8.0	104
15	Simple synthesis and molecular engineering of low-cost and star-shaped carbazole-based hole transporting materials for highly efficient perovskite solar cells. Journal of Materials Chemistry A, 2017, 5, 20263-20276.	10.3	92
16	Novel Dâ€“Ï€â€“A structured Zn(ii)-porphyrin dyes containing a bis(3,3-dimethylfluorenyl)amine moiety for dye-sensitised solar cells. Chemical Communications, 2012, 48, 9349.	4.1	91
17	Palladium-Catalyzed Direct Synthesis, Photophysical Properties, and Tunable Electroluminescence of Novel Silicon-Based Alternating Copolymers. Macromolecules, 2000, 33, 9277-9288.	4.8	90
18	Edge-selenated graphene nanoplatelets as durable metal-free catalysts for iodine reduction reaction in dye-sensitized solar cells. Science Advances, 2016, 2, e1501459.	10.3	88

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19	A Desirable Holeâ€Conducting Coadsorbent for Highly Efficient Dyeâ€Sensitized Solar Cells through an Organic Redox Cascade Strategy. Chemistry - A European Journal, 2011, 17, 11115-11121.	3.3	85
20	A new tetrakis Î²-diketone ligand for NIR emitting LnIII ions: luminescent doped PMMA films and flexible resins for advanced photonic applications. Journal of Materials Chemistry C, 2013, 1, 6935.	5.5	85
21	High-performance dye-sensitized solar cells using edge-halogenated graphene nanoplatelets as counter electrodes. Nano Energy, 2015, 13, 336-345.	16.0	85
22	Edge-carboxylated graphene nanoplatelets as oxygen-rich metal-free cathodes for organic dye-sensitized solar cells. Energy and Environmental Science, 2014, 7, 1044-1052.	30.8	82
23	Nb-doped TiO2 nanoparticles for organic dye-sensitized solar cells. RSC Advances, 2013, 3, 16380.	3.6	75
24	Novel Dâ€“Ï€â€“A structured porphyrin dyes with diphenylamine derived electron-donating substituents for highly efficient dye-sensitized solar cells. Journal of Materials Chemistry A, 2013, 1, 3977.	10.3	75
25	Molecular design and synthesis of Dâ€“Ï€â€“A structured porphyrin dyes with various acceptor units for dye-sensitized solar cells. Journal of Materials Chemistry C, 2019, 7, 2843-2852.	5.5	73
26	A simple triaryl amine-based dual functioned co-adsorbent for highly efficient dye-sensitized solar cells. Journal of Materials Chemistry, 2012, 22, 3786.	6.7	65
27	Novel D-Ï€-A system based on zinc-porphyrin derivatives for highly efficient dye-sensitised solar cells. Tetrahedron Letters, 2011, 52, 3879-3882.	1.4	57
28	B-Doped Graphene as an Electrochemically Superior Metal-Free Cathode Material As Compared to Pt over a Co(II)/Co(III) Electrolyte for Dye-Sensitized Solar Cell. Chemistry of Materials, 2014, 26, 3586-3591.	6.7	57
29	Phenothiazine Functionalized Multifunctional Aâ^'Ï€â€“Dâ^'Ï€â€“Dâ^'Ï€â€“A-Type Hole-Transporting Materials via Sequential Câ€“H Arylation Approach for Efficient and Stable Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 14011-14022.	8.0	51
30	Metalloid tellurium-doped graphene nanoplatelets as ultimately stable electrocatalysts for cobalt reduction reaction in dye-sensitized solar cells. Nano Energy, 2016, 30, 867-876.	16.0	49
31	Triphenylamine-based organic sensitizers with Ï€-spacer structural engineering for dye-sensitized solar cells: Synthesis, theoretical calculations, molecular spectroscopy and structure-property-performance relationships. Dyes and Pigments, 2017, 136, 496-504.	3.7	49
32	Dual-channel anchorable organic dyes with well-defined structures for highly efficient dye-sensitized solar cells. Journal of Materials Chemistry A, 2013, 1, 9947.	10.3	48
33	Recent progress on nanostructured carbon-based counter/back electrodes for high-performance dye-sensitized and perovskite solar cells. Nanoscale, 2020, 12, 17590-17648.	5.6	48
34	Dâ^'Ï€â€“A-Structured Porphyrins with Extended Auxiliary Ï€-Spacers for Highly Efficient Dye-Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 24067-24077.	8.0	46
35	Copolymer-templated nitrogen-enriched nanocarbons as a low charge-transfer resistance and highly stable alternative to platinum cathodes in dye-sensitized solar cells. Journal of Materials Chemistry A, 2015, 3, 4413-4419.	10.3	45
36	Novel Dâ€“Ï€â€“A structured Zn(ii)â€“porphyrin dyes with bulky fluorenyl substituted electron donor moieties for dye-sensitized solar cells. Journal of Materials Chemistry A, 2013, 1, 9848.	10.3	43

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37	Structural effect of carbazole-based coadsorbents on the photovoltaic performance of organic dye-sensitized solar cells. Journal of Materials Chemistry A, 2013, 1, 9114.	10.3	42
38	Biphenylene-bridged mesostructured organosilica as a novel hybrid host material for LnIII (Ln = Eu, Gd,) Tj ETQq0 0 0 rgBT /Overlock 10 T 3454.	5.5	42
39	Two-terminal DSSC/silicon tandem solar cells exceeding 18% efficiency. Energy and Environmental Science, 2016, 9, 3657-3665.	30.8	41
40	Soft-Templated Tellurium-Doped Mesoporous Carbon as a Pt-Free Electrocatalyst for High-Performance Dye-Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 2093-2102.	8.0	37
41	Organic Dyes with Wellâ€Defined Structures for Highly Efficient Dyeâ€Sensitised Solar Cells Based on a Cobalt Electrolyte. Chemistry - A European Journal, 2015, 21, 14804-14811.	3.3	36
42	Comparative study of edge-functionalized graphene nanoplatelets as metal-free counter electrodes for highly efficient dye-sensitized solar cells. Materials Today Energy, 2018, 9, 67-73.	4.7	34
43	Edge-selectively antimony-doped graphene nanoplatelets as an outstanding counter electrode with an unusual electrochemical stability for dye-sensitized solar cells employing cobalt electrolytes. Journal of Materials Chemistry A, 2016, 4, 9029-9037.	10.3	33
44	Anchovy-derived nitrogen and sulfur co-doped porous carbon materials for high-performance supercapacitors and dye-sensitized solar cells. RSC Advances, 2017, 7, 35565-35574.	3.6	31
45	In situ real-time and quantitative investigation on the stability of non-aqueous lithium oxygen battery electrolytes. Journal of Materials Chemistry A, 2016, 4, 6332-6341.	10.3	30
46	Functionalized alkyne bridged dendron based chromophores for dye-sensitized solar cell applications. Energy and Environmental Science, 2009, 2, 1082.	30.8	29
47	A facile route to well-dispersed Ru nanoparticles embedded in self-templated mesoporous carbons for high-performance supercapacitors. Journal of Materials Chemistry A, 2019, 7, 20208-20222.	10.3	28
48	Polymer Gel Electrolytes Based on PEG-Functionalized ABA Triblock Copolymers for Quasi-Solid-State Dye-Sensitized Solar Cells: Molecular Engineering and Key Factors. ACS Applied Materials & Interfaces, 2020, 12, 42067-42080.	8.0	28
49	In-depth understanding of the energy loss and efficiency limit of dye-sensitized solar cells under outdoor and indoor conditions. Journal of Materials Chemistry A, 2021, 9, 24830-24848.	10.3	28
50	Dyeâ€Sensitized Solar Cells based on Organic Dualâ€Channel Anchorable Dyes with Wellâ€Defined Core Bridge Structures. ChemSusChem, 2013, 6, 2069-2073.	6.8	27
51	Novel Ï€-extended porphyrin-based hole-transporting materials with triarylamine donor units for high performance perovskite solar cells. Dyes and Pigments, 2019, 163, 734-739.	3.7	27
52	<i>In situ</i> preparation of Ruâ€“N-doped template-free mesoporous carbons as a transparent counter electrode for bifacial dye-sensitized solar cells. Nanoscale, 2020, 12, 1602-1616.	5.6	26
53	Exploratory synthesis and photovoltaic performance comparison of Dâ€“Ï€â€“A structured Zn-porphyrins for dye-sensitized solar cells. Dyes and Pigments, 2018, 149, 341-347.	3.7	24
54	D-Ï€-A-structured organic sensitizers with Ï€-extended auxiliary acceptor units for high-performance dye-sensitized solar cells. Dyes and Pigments, 2021, 195, 109681.	3.7	24

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55	Dual-channel anchorable organic dye with triphenylamine-based core bridge unit for dye-sensitized solar cells. Dyes and Pigments, 2013, 99, 599-606.	3.7	23
56	Well-defined triblock copolymer/TiO₂ composite gel electrolytes for high-performance dye-sensitized solar cells. Journal of Materials Chemistry A, 2019, 7, 14743-14752.	10.3	22
57	Novel trifluoropropoxy-substituted asymmetric carbazole derivatives as efficient and hydrophobic hole transporting materials for high-performance and stable perovskite solar cells. Chemical Engineering Journal, 2022, 428, 131108.	12.7	22
58	Ln(iii)-cored complexes based on boron dipyrromethene (Bodipy) ligands for NIR emission. New Journal of Chemistry, 2012, 36, 723-731.	2.8	21
59	Tellurium-Doped, Mesoporous Carbon Nanomaterials as Transparent Metal-Free Counter Electrodes for High-Performance Bifacial Dye-Sensitized Solar Cells. Nanomaterials, 2020, 10, 29.	4.1	18
60	Highly efficient gel electrolytes by end group modified PEG-based ABA triblock copolymers for quasi-solid-state dye-sensitized solar cells. Chemical Engineering Journal, 2021, 420, 129899.	12.7	18
61	Dâ€"Ï€â€"A organic dyes with various bulky amine-typed donor moieties for dye-sensitized solar cells employing the cobalt electrolyte. Organic Electronics, 2015, 25, 1-5.	2.6	16
62	New thieno[3,2-b][1]benzothiophene-based organic sensitizers containing Ï€-extended thiophene spacers for efficient dye-sensitized solar cells. RSC Advances, 2015, 5, 80859-80870.	3.6	16
63	Nanocrystal co-existed highly dense atomically disperse Pt@3D-hierarchical porous carbon electrocatalysts for tri-iodide and oxygen reduction reactions. Chemical Engineering Journal, 2022, 446, 137249.	12.7	16
64	Well-dispersed Te-doped mesoporous carbons as Pt-free counter electrodes for high-performance dye-sensitized solar cells. Dalton Transactions, 2021, 50, 9399-9409.	3.3	15
65	Porphyrin sensitizers with acceptor structural engineering for dye-sensitized solar cells. Dyes and Pigments, 2021, 187, 109082.	3.7	14
66	PAN-Based Triblock Copolymers Tailor-Made by Reversible Additionâ€"Fragmentation Chain Transfer Polymerization for High-Performance Quasi-Solid State Dye-Sensitized Solar Cells. ACS Applied Energy Materials, 2021, 4, 1302-1312.	5.1	12
67	Three-dimensional tellurium and nitrogen Co-doped mesoporous carbons for high performance supercapacitors. RSC Advances, 2021, 11, 8628-8635.	3.6	10
68	Significant Influence of a Single Atom Change in Auxiliary Acceptor on Photovoltaic Properties of Porphyrin-Based Dye-Sensitized Solar Cells. Nanomaterials, 2018, 8, 1030.	4.1	9
69	A versatile platform for lanthanide(<scp>iii</scp>)-containing organogelators: fabrication of the Er(<scp>iii</scp>)-incorporated polymer nanocomposite from an organogel template. New Journal of Chemistry, 2017, 41, 12366-12370.	2.8	8
70	Dopant-Free Triazatruxene-Based Hole Transporting Materials with Three Different End-Capped Acceptor Units for Perovskite Solar Cells. Nanomaterials, 2020, 10, 936.	4.1	8
71	Dopant-free hole transporting polymeric materials based on pyrroloindacenodithiophene donor unit for efficient perovskite solar cells. Dyes and Pigments, 2021, 192, 109432.	3.7	8
72	Lanthanide(III) dendrimer complexes based on diphenylquinoxaline derivatives for photonic amplification. Macromolecular Research, 2013, 21, 556-564.	2.4	7

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73	Dyeâ€Sensitized Solar Cells: 14.2% Efficiency Dyeâ€Sensitized Solar Cells by Coâ€sensitizing Novel Thieno[3,2â€<i>b</i>]indoleâ€Based Organic Dyes with a Promising Porphyrin Sensitizer (Adv. Energy) Tj ETQq1 1 0.784314 rgBT /Ov	19.7	7
74	Fluorine: Edge-Fluorinated Graphene Nanoplatelets as High Performance Electrodes for Dye-Sensitized Solar Cells and Lithium Ion Batteries (Adv. Funct. Mater. 8/2015). Advanced Functional Materials, 2015, 25, 1328-1328.	14.9	6
75	Dyeâ€Sensitized Tandem Solar Cells with Extremely High Openâ€Circuit Voltage Using Co(II)/Co(III) Electrolyte. Israel Journal of Chemistry, 2015, 55, 1002-1010.	2.3	3
76	Mechanism for Preserving Volatile Nitrogen Dioxide and Sustainable Redox Mediation in the Nonaqueous Lithiumâ€“Oxygen Battery. ACS Applied Materials & Interfaces, 2021, 13, 8159-8168.	8.0	3
77	A Near-IR Organic Sensitizer with Squaraine and Phenothiazine Unit for Dye-Sensitized Solar Cells. Molecular Crystals and Liquid Crystals, 2014, 600, 116-122.	0.9	1
78	Quinoxaline Dendrimers at the Airâ€“Aqueous Interface and Their Photoluminescent Properties. Chemistry Letters, 2014, 43, 1303-1305.	1.3	1
79	Porous Carbon Materials as Supreme Metal-Free Counter Electrode for Dye-Sensitized Solar Cells. , 0, , .		1
80	Novel Erbium(III)-encapsulated complexes based on Ï€-extended anthracene ligands bearing G3-aryl-ether dendron: synthesis and photophysical studies. Macromolecular Research, 2009, 17, 672-681.	2.4	0
81	Comparative Study of Edge-Functionalized Graphene Nanoplatelets As Superior Metal-Free Counter Electrodes for Dye-Sensitized Solar Cells. ECS Meeting Abstracts, 2018, , .	0.0	0
82	Porphyrin Sensitizers Sensitizers Exceeding a World Champion Porphyrin Dye for Dye-Sensitized Solar Cells and Their Tandem Solar Cells. ECS Meeting Abstracts, 2018, , .	0.0	0