Mansoo Choi

List of Publications by Year in descending order

123 papers	11,186 citations	66234 42 h-index	29081 104 g-index
133 all docs	133 docs citations	133 times ranked	14348 citing authors

#	Article	IF	Citations
1	Highly Reproducible Perovskite Solar Cells with Average Efficiency of 18.3% and Best Efficiency of 19.7% Fabricated via Lewis Base Adduct of Lead(II) Iodide. Journal of the American Chemical Society, 2015, 137, 8696-8699.	6.6	2,030
2	Ultrasensitive mechanical crack-based sensor inspired by the spider sensory system. Nature, 2014, 516, 222-226.	13.7	1,196
3	Self-formed grain boundary healing layer for highly efficient CH3NH3PbI3 perovskite solar cells. Nature Energy, 2016, 1, .	19.8	902
4	Nanofluids containing multiwalled carbon nanotubes and their enhanced thermal conductivities. Journal of Applied Physics, 2003, 94, 4967.	1.1	666
5	Trapped charge-driven degradation of perovskite solar cells. Nature Communications, 2016, 7, 13422.	5.8	464
6	Control of Iâ€“V Hysteresis in CH₃NH₃PbI₃ Perovskite Solar Cell. Journal of Physical Chemistry Letters, 2015, 6, 4633-4639.	2.1	430
7	Superflexible, high-efficiency perovskite solar cells utilizing graphene electrodes: towards future foldable power sources. Energy and Environmental Science, 2017, 10, 337-345.	15.6	391
8	Intact 2D/3D halide junction perovskite solar cells via solid-phase in-plane growth. Nature Energy, 2021, 6, 63-71.	19.8	365
9	Stretchable and Transparent Kirigami Conductor of Nanowire Percolation Network for Electronic Skin Applications. Nano Letters, 2019, 19, 6087-6096.	4.5	276
10	Hysteresis-free low-temperature-processed planar perovskite solar cells with 19.1% efficiency. Energy and Environmental Science, 2016, 9, 2262-2266.	15.6	265
11	Electronic modulation of infrared radiation in graphene plasmonic resonators. Nature Communications, 2015, 6, 7032.	5.8	213
12	Transparent Conductive Oxideâ€Free Grapheneâ€Based Perovskite Solar Cells with over 17% Efficiency. Advanced Energy Materials, 2016, 6, 1501873.	10.2	206
13	Tunable large resonant absorption in a midinfrared graphene Salisbury screen. Physical Review B, 2014, 90, .	1.1	155
14	Parallel patterning of nanoparticles via electrodynamic focusing of charged aerosols. Nature Nanotechnology, 2006, 1, 117-121.	15.6	149
15	Moth-Eye TiO₂Layer for Improving Light Harvesting Efficiency in Perovskite Solar Cells. Small, 2016, 12, 2443-2449.	5.2	142
16	Carbon Nanotubes versus Graphene as Flexible Transparent Electrodes in Inverted Perovskite Solar Cells. Journal of Physical Chemistry Letters, 2017, 8, 5395-5401.	2.1	141
17	Ultra-flexible perovskite solar cells with crumpling durability: toward a wearable power source. Energy and Environmental Science, 2019, 12, 3182-3191.	15.6	136
18	Highâ€Performance Solutionâ€Processed Doubleâ€Walled Carbon Nanotube Transparent Electrode for Perovskite Solar Cells. Advanced Energy Materials, 2019, 9, 1901204.	10.2	101

#	Article	IF	Citations
19	Highly Reproducible Largeâ€Area Perovskite Solar Cell Fabrication via Continuous Megasonic Spray Coating of CH₃NH₃PbI₃. Small, 2019, 15, e1804005.	5.2	99
20	Carbon-sandwiched perovskite solar cell. Journal of Materials Chemistry A, 2018, 6, 1382-1389.	5.2	98
21	Three-Dimensional Assembly of Nanoparticles from Charged Aerosols. Nano Letters, 2011, 11, 119-124.	4.5	94
22	Thermodynamic regulation of CH₃NH₃PbI₃crystal growth and its effect on photovoltaic performance of perovskite solar cells. Journal of Materials Chemistry A, 2015, 3, 19901-19906.	5.2	94
23	Transparent ITO mechanical crack-based pressure and strain sensor. Journal of Materials Chemistry C, 2016, 4, 9947-9953.	2.7	87
24	Ultra-sensitive Pressure sensor based on guided straight mechanical cracks. Scientific Reports, 2017, 7, 40116.	1.6	86
25	Three-dimensional nanoprinting via charged aerosol jets. Nature, 2021, 592, 54-59.	13.7	86
26	Hotspotâ€Engineered 3D Multipetal Flower Assemblies for Surfaceâ€Enhanced Raman Spectroscopy. Advanced Materials, 2014, 26, 5924-5929.	11.1	74
27	Multiplex lithography for multilevel multiscale architectures and its application to polymer electrolyte membrane fuel cell. Nature Communications, 2015, 6, 8484.	5.8	69
28	Opto-electronic properties of TiO₂nanohelices with embedded HC(NH₂)₂PbI₃perovskite solar cells. Journal of Materials Chemistry A, 2015, 3, 9179-9186.	5.2	67
29	Highly durable crack sensor integrated with silicone rubber cantilever for measuring cardiac contractility. Nature Communications, 2020, 11, 535.	5.8	66
30	Water-repellent perovskite solar cell. Journal of Materials Chemistry A, 2014, 2, 20017-20021.	5.2	65
31	Electrospun Magnetic Nanoparticle-Decorated Nanofiber Filter and Its Applications to High-Efficiency Air Filtration. Environmental Science & Technology, 2017, 51, 11967-11975.	4.6	64
32	Unconventional Alloys Confined in Nanoparticles: Building Blocks for New Matter. Matter, 2020, 3, 1646-1663.	5.0	63
33	Coalescence enhanced synthesis of nanoparticles to control size, morphology and crystalline phase at high concentrations. Journal of Aerosol Science, 2002, 33, 1-16.	1.8	59
34	Replication of flexible polymer membranes with geometry-controllable nano-apertures via a hierarchical mould-based dewetting. Nature Communications, 2014, 5, 3137.	5.8	59
35	Rational Coreâ€“Shell Design of Open Air Low Temperature In Situ Processable CsPbI₃ Quasiâ€Nanocrystals for Stabilized pâ€iâ€n Solar Cells. Advanced Energy Materials, 2019, 9, 1901787.	10.2	53
36	Crack-based strain sensor with diverse metal films by inserting an inter-layer. RSC Advances, 2017, 7, 34810-34815.	1.7	51

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37	Multiscale structured low-temperature solid oxide fuel cells with 13 W power at 500 Â°C. Energy and Environmental Science, 2020, 13, 3459-3468.	15.6	51
38	Multifunctional Nafion/CeO₂ Dendritic Structures for Enhanced Durability and Performance of Polymer Electrolyte Membrane Fuel Cells. ACS Applied Materials & Interfaces, 2021, 13, 806-815.	4.0	51
39	Guided cracking of electrodes by stretching prism-patterned membrane electrode assemblies for high-performance fuel cells. Scientific Reports, 2018, 8, 1257.	1.6	49
40	Multifunctional Moth-Eye TiO₂/PDMS Pads with High Transmittance and UV Filtering. ACS Applied Materials & Interfaces, 2017, 9, 44038-44044.	4.0	48
41	An atomistic mechanism for the degradation of perovskite solar cells by trapped charge. Nanoscale, 2019, 11, 11369-11378.	2.8	45
42	Controlled formation of nanoparticles utilizing laser irradiation in a flame and their characteristics. Applied Physics Letters, 2001, 79, 2459-2461.	1.5	44
43	Moth-eye Structured Polydimethylsiloxane Films for High-Efficiency Perovskite Solar Cells. Nano-Micro Letters, 2019, 11, 53.	14.4	44
44	A study of pin-to-plate type spark discharge generator for producing unagglomerated nanoaerosols. Journal of Aerosol Science, 2012, 52, 80-88.	1.8	43
45	Precise Morphology Control and Continuous Fabrication of Perovskite Solar Cells Using Droplet-Controllable Electrospray Coating System. ACS Applied Materials & Interfaces, 2017, 9, 7879-7884.	4.0	43
46	High-performance Fuel Cell with Stretched Catalyst-Coated Membrane: One-step Formation of Cracked Electrode. Scientific Reports, 2016, 6, 26503.	1.6	42
47	Electron field emission from nanocarbons: A two-process model. Applied Physics Letters, 2004, 84, 1126-1128.	1.5	41
48	Polyimide Encapsulation of Spider-Inspired Crack-Based Sensors for Durability Improvement. Applied Sciences (Switzerland), 2018, 8, 367.	1.3	41
49	Facile fabrication of three-dimensional TiO 2 structures for highly efficient perovskite solar cells. Nano Energy, 2016, 22, 499-506.	8.2	40
50	Room temperature CO and H₂sensing with carbon nanoparticles. Nanotechnology, 2011, 22, 485501.	1.3	39
51	Charge Transport Layer-Dependent Electronic Band Bending in Perovskite Solar Cells and Its Correlation to Light-Induced Device Degradation. ACS Energy Letters, 2020, 5, 2580-2589.	8.8	39
52	Investigation of Defectâ€Tolerant Perovskite Solar Cells with Longâ€Term Stability via Controlling the Selfâ€Doping Effect. Advanced Energy Materials, 2021, 11, 2100555.	10.2	38
53	Electro-spray deposition of a mesoporous TiO₂charge collection layer: toward large scale and continuous production of high efficiency perovskite solar cells. Nanoscale, 2015, 7, 20725-20733.	2.8	36
54	Facile Multiscale Patterning by Creep-Assisted Sequential Imprinting and Fuel Cell Application. ACS Applied Materials & Interfaces, 2016, 8, 11459-11465.	4.0	35

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55	A rollable ultra-light polymer electrolyte membrane fuel cell. NPG Asia Materials, 2017, 9, e384-e384.	3.8	34
56	Unipolar Charging of Nanosized Aerosol Particles Using Soft X-ray Photoionization. Aerosol Science and Technology, 2003, 37, 330-341.	1.5	32
57	Numerical simulation of microscopic motion and deposition of nanoparticles via electrodynamic focusing. Journal of Aerosol Science, 2007, 38, 1140-1149.	1.8	32
58	Interface Design of Hybrid Electron Extraction Layer for Relieving Hysteresis and Retarding Charge Recombination in Perovskite Solar Cells. Advanced Materials Interfaces, 2018, 5, 1800993.	1.9	31
59	Highâ€Resolution, Parallel Patterning of Nanoparticles via an Ionâ€Induced Focusing Mask. Small, 2010, 6, 2146-2152.	5.2	29
60	Roomâ€Temperature Vapor Deposition of Cobalt Nitride Nanofilms for Mesoscopic and Perovskite Solar Cells. Advanced Energy Materials, 2018, 8, 1703114.	10.2	29
61	Membrane/Electrode Interface Design for Effective Water Management in Alkaline Membrane Fuel Cells. ACS Applied Materials & Interfaces, 2019, 11, 34805-34811.	4.0	29
62	Nanoparticle pattern deposition from gas phase onto charged flat surface. Microelectronic Engineering, 2004, 71, 229-236.	1.1	27
63	Comparison of cellular toxicity between multi-walled carbon nanotubes and onion-like shell-shaped carbon nanoparticles. Journal of Nanoparticle Research, 2015, 17, 1.	0.8	26
64	Development of an automated wet-cyclone system for rapid, continuous and enriched bioaerosol sampling and its application to real-time detection. Sensors and Actuators B: Chemical, 2019, 284, 525-533.	4.0	24
65	Abnormal spatial heterogeneity governing the charge-carrier mechanism in efficient Ruddlesdenâ€“Popper perovskite solar cells. Energy and Environmental Science, 2021, 14, 4915-4925.	15.6	24
66	Dual function of a high-contrast hydrophobicâ€“hydrophilic coating for enhanced stability of perovskite solar cells in extremely humid environments. Nano Research, 2017, 10, 3885-3895.	5.8	23
67	Multifurcation Assembly of Charged Aerosols and Its Application to 3D Structured Gas Sensors. Advanced Materials, 2017, 29, 1604159.	11.1	23
68	Degradation of CH₃NH₃PbI₃ perovskite materials by localized charges and its polarity dependency. Journal of Materials Chemistry A, 2019, 7, 12075-12085.	5.2	23
69	Ultrasensitive Nearâ€Infrared Circularly Polarized Light Detection Using 3D Perovskite Embedded with Chiral Plasmonic Nanoparticles. Advanced Science, 2022, 9, e2104598.	5.6	23
70	Focused patterning of nanoparticles by controlling electric field induced particle motion. Applied Physics Letters, 2009, 94, .	1.5	22
71	One-step flame method for the synthesis of coated composite nanoparticles. Journal of Nanoparticle Research, 2009, 11, 1767-1775.	0.8	22
72	Auxetic lattice of multipods. Physica Status Solidi (B): Basic Research, 2009, 246, 2098-2101.	0.7	22

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73	Fragmentation of Fe2O3 nanoparticles driven by a phase transition in a flame and their magnetic properties. Applied Physics Letters, 2003, 83, 4842-4844.	1.5	18
74	A micro-patterned electrode/electrolyte interface fabricated by soft-lithography for facile oxygen reduction in solid oxide fuel cells. Journal of Materials Chemistry A, 2020, 8, 16534-16541.	5.2	18
75	Enhanced Light Harvesting in Mesoscopic Solar Cells by Multilevel Multiscale Patterned Photoelectrodes with Superpositioned Optical Properties. Advanced Functional Materials, 2016, 26, 6584-6592.	7.8	17
76	Effects of photon recycling and scattering in high-performance perovskite solar cells. Science Advances, 2021, 7, eabj1363.	4.7	17
77	Reliable doping and carrier concentration control in graphene by aerosol-derived metal nanoparticles. Journal of Materials Chemistry C, 2015, 3, 8294-8299.	2.7	16
78	A light-trapping strategy for nanocrystalline silicon thin-film solar cells using three-dimensionally assembled nanoparticle structures. Nanotechnology, 2016, 27, 055403.	1.3	16
79	Metalâ€“elastomer bilayered switches by utilizing the superexponential behavior of crack widening. Journal of Materials Chemistry C, 2017, 5, 10920-10925.	2.7	15
80	Selective Nanopatterning of Protein via Ionâ€Induced Focusing and its Application to Metalâ€Enhanced Fluorescence. Small, 2011, 7, 1790-1794.	5.2	14
81	Wire-in-Hole-Type Spark Discharge Generator for Long-Time Consistent Generation of Unagglomerated Nanoparticles. Aerosol Science and Technology, 2015, 49, 463-471.	1.5	13
82	Tailoring ceramic membrane structures of solid oxide fuel cells via polymer-assisted electrospray deposition. Journal of Membrane Science, 2017, 544, 234-242.	4.1	12
83	Imaging Real-Time Amorphization of Hybrid Perovskite Solar Cells under Electrical Biasing. ACS Energy Letters, 2021, 6, 3530-3537.	8.8	12
84	Pulsatile therapy for perovskite solar cells. Joule, 2022, 6, 1087-1102.	11.7	12
85	Three-dimensionally patterned Agâ€“Pt alloy catalyst on planar Si photocathodes for photoelectrochemical H₂ evolution. Physical Chemistry Chemical Physics, 2019, 21, 4184-4192.	1.3	11
86	Research in Korea on Gas Phase Synthesis and Control of Nanoparticles. Journal of Nanoparticle Research, 2001, 3, 201-211.	0.8	10
87	Generation of carbon nano-onions by laser irradiation of gaseous hydrocarbons for high durability catalyst support in proton exchange membrane fuel cells. Journal of Industrial and Engineering Chemistry, 2019, 80, 65-73.	2.9	10
88	Nature-inspired rollable electronics. NPG Asia Materials, 2019, 11, .	3.8	10
89	Nanoxerography utilizing bipolar charge patterns. Applied Physics Letters, 2012, 101, .	1.5	9
90	Large-area assembly of three-dimensional nanoparticle structures via ion assisted aerosol lithography with a multi-pin spark discharge generator. Nanotechnology, 2014, 25, 225302.	1.3	9

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91	Efficient Microfluidic Power Generator Based on Interaction between DI Water and Hydrophobic-Channel Surface. International Journal of Precision Engineering and Manufacturing - Green Technology, 2018, 5, 255-260.	2.7	8
92	A highly activated and integrated nanoscale interlayer of cathodes in low-temperature solid oxide fuel cells via precursor-solution electrospray method. International Journal of Hydrogen Energy, 2019, 44, 4476-4483.	3.8	8
93	High-Efficiency Flexible Perovskite Solar Cells Enabled by an Ultrafast Room-Temperature Reactive Ion Etching Process. ACS Applied Materials & Interfaces, 2020, 12, 7125-7134.	4.0	8
94	Assembly of Nanoparticles: Towards Multiscale Three-Dimensional Architecturing. KONA Powder and Particle Journal, 2013, 30, 31-46.	0.9	7
95	High throughput nanoparticle generation utilizing high-frequency spark discharges via rapid spark plasma removal. Aerosol Science and Technology, 2017, 51, 116-122.	1.5	7
96	Hydrophilicity control of laser-induced amorphous carbon-encapsulated carbon nano-onions and their application to proton exchange membrane fuel cells under low humidity. Carbon, 2021, 184, 910-922.	5.4	7
97	Preparation and characterization of SiO₂â€“B₂O₃â€“P₂O₅ particles and films generated by flame hydrolysis deposition for planar light-wave circuits. Journal of Materials Research, 2002, 17, 315-322.	1.2	6
98	Magnetism of adsorbed oxygen at low coverage. Physical Review B, 2003, 67, .	1.1	6
99	Crystallinity control of flame generated composite nanoparticles by laser irradiation. Powder Technology, 2012, 229, 246-252.	2.1	6
100	Multiscale Hierarchical Patterning by Sacrificial Layerâ€Assisted Creep Lithography. Advanced Materials Interfaces, 2019, 6, 1900606.	1.9	6
101	Tailoring an Interface Microstructure for High-Performance Reversible Protonic Ceramic Electrochemical Cells via Soft Lithography. ACS Applied Materials & Interfaces, 2022, 14, 32124-32133.	4.0	6
102	Stabilization of spinel structure during combustion synthesis of iron nanooxides. Journal of Nanoparticle Research, 2004, 6, 633-637.	0.8	5
103	Bioinspired liquid-repelling sealing films for flexible perovskite solar cells. Materials Today Energy, 2021, 20, 100622.	2.5	5
104	Vapor-Mediated Infiltration of Nanocatalysts for Low-Temperature Solid Oxide Fuel Cells Using Electrosprayed Dendrites. Nano Letters, 2021, 21, 10186-10192.	4.5	5
105	Fabrication of micro patterned fibronectin for studying adhesion and alignment behavior of human dermal fibroblasts. Macromolecular Research, 2007, 15, 348-356.	1.0	4
106	Hotspots: Hotspot-Engineered 3D Multipetal Flower Assemblies for Surface-Enhanced Raman Spectroscopy (Adv. Mater. 34/2014). Advanced Materials, 2014, 26, 5923-5923.	11.1	4
107	Vertical stacking of three-dimensional nanostructures via an aerosol lithography for advanced optical applications. Nanotechnology, 2017, 28, 475302.	1.3	4
108	Directionally Selective Polyhalide Molecular Glue for Stable Inverted Perovskite Solar Cells. Solar Rrl, 2020, 4, 2000244.	3.1	4

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109	Layer-by-Layer Polydimethylsiloxane Modification Using a Two-Nozzle Spray Process for High Durability of the Cathode Catalyst in Proton-Exchange Membrane Fuel Cells. ACS Applied Materials & Interfaces, 2021, 13, 56014-56024.	4.0	4
110	Laser induced transition from soot generation to shell shaped carbon nanoparticles in an acetylene flow: aerosol characterization. Journal of Mechanical Science and Technology, 2008, 22, 134-140.	0.7	3
111	Assembly of charged aerosols on non-conducting substrates via ion-assisted aerosol lithography (IAAL). Particuology, 2017, 33, 17-23.	2.0	3
112	Controlled Enhancement in Hole Injection at Gold-Nanoparticle-on-Organic Electrical Contacts Fabricated by Spark-Discharge Aerosol Technique. ACS Applied Materials & Interfaces, 2019, 11, 6276-6282.	4.0	3
113	Light Harvesting: Enhanced Light Harvesting in Mesoscopic Solar Cells by Multilevel Multiscale Patterned Photoelectrodes with Superpositioned Optical Properties (Adv. Funct. Mater. 36/2016). Advanced Functional Materials, 2016, 26, 6583-6583.	7.8	2
114	Light emission induced by electric current at room temperature through the defect networks of MgO nanocubes. AIP Advances, 2019, 9, 125305.	0.6	2
115	3D Nanoprinting with Charged Aerosol Particlesâ€”An Overview. Accounts of Materials Research, 0, , .	5.9	2
116	Perovskite Solar Cells: Moth-Eye TiO₂ Layer for Improving Light Harvesting Efficiency in Perovskite Solar Cells (Small 18/2016). Small, 2016, 12, 2530-2530.	5.2	1
117	Photocurable PUA (Poly Urethaneacrylat) cantilever integrated with ultra-high sensitive crack-based sensor. , 2017, , .		1
118	A Low-Field Temperature Dependent EPR Signal in Terraced MgO:Mn²⁺ Nanoparticles: An Enhanced Zeeman Splitting in the Wide-Bandgap Oxide. Journal of Spectroscopy, 2017, 2017, 1-6.	0.6	1
119	Crackâ€free cathode of intermediateâ€temperature solid oxide fuel cells via electrospray deposition. International Journal of Applied Ceramic Technology, 0, , .	1.1	1
120	Virtually probing â€œFaraday three-dimensional nanoprintingâ€• Additive Manufacturing, 2021, , 102432.	1.7	1
121	Title is missing!. Journal of Nanoparticle Research, 2002, 4, 571-573.	0.8	0
122	International Symposium on 'Nanoparticles: Aerosols and Materials,' Pusan, Korea, July 5â€“6, 2001. Journal of Nanoparticle Research, 2003, 5, 573-576.	0.8	0
123	PDMS-Encapsulated Crack Sensor Integrated with Silicon Rubber Cantilever for Use in Cell Culture Media. , 2019, , .		0