Jin Zhai

List of Publications by Year
in descending order

111 papers	5,149 citations	81900 39 h-index	91884 69 g-index
119 all docs	119 docs citations	119 times ranked	5691 citing authors

#	Article	IF	Citations
1	Photo-induced waterâ€“oil separation based on switchable superhydrophobicityâ€“superhydrophilicity and underwater superoleophobicity of the aligned ZnO nanorod array-coated mesh films. Journal of Materials Chemistry, 2012, 22, 19652.	6.7	347
2	Super-Hydrophobic PDMS Surface with Ultra-Low Adhesive Force. Macromolecular Rapid Communications, 2005, 26, 1805-1809.	3.9	336
3	Electrochemical Deposition of Conductive Superhydrophobic Zinc Oxide Thin Films. Journal of Physical Chemistry B, 2003, 107, 9954-9957.	2.6	281
4	Underwater superoleophobic porous membrane based on hierarchical TiO₂ nanotubes: multifunctional integration of oilâ€“water separation, flow-through photocatalysis and self-cleaning. Journal of Materials Chemistry A, 2015, 3, 1279-1286.	10.3	204
5	Wetting and anti-wetting on aligned carbon nanotube films. Soft Matter, 2006, 2, 811.	2.7	193
6	Bioinspired construction of Mgâ€“Li alloys surfaces with stable superhydrophobicity and improved corrosion resistance. Applied Physics Letters, 2008, 92, .	3.3	158
7	Light and pH Cooperative Nanofluidic Diode Using a Spiropyranâ€Functionalized Single Nanochannel. Advanced Materials, 2012, 24, 2424-2428.	21.0	158
8	High photostability and quantum yield of nanoporous TiO2 thin film electrodes co-sensitized with capped sulfides. Journal of Materials Chemistry, 2002, 12, 1459-1464.	6.7	154
9	Hybrid nanochannel membrane based on polymer/MOF for high-performance salinity gradient power generation. Nano Energy, 2018, 53, 643-649.	16.0	144
10	Bioâ€inspired Photoelectric Conversion Based on Smartâ€Gating Nanochannels. Advanced Functional Materials, 2010, 20, 2636-2642.	14.9	113
11	Bioinspired Smart Gating of Nanochannels Toward Photoelectricâ€Conversion Systems. Advanced Materials, 2010, 22, 1021-1024.	21.0	104
12	Influence of Small Molecules in Conducting Polyaniline on the Photovoltaic Properties of Solid-State Dye-Sensitized Solar Cells. Journal of Physical Chemistry B, 2004, 108, 18693-18697.	2.6	103
13	Functional separators towards the suppression of lithium dendrites for rechargeable high-energy batteries. Materials Horizons, 2021, 8, 12-32.	12.2	99
14	In situ investigation on dynamic suspending of microdroplet on lotus leaf and gradient of wettable micro- and nanostructure from water condensation. Applied Physics Letters, 2008, 92, .	3.3	96
15	Creation of a Superhydrophobic Surface from an Amphiphilic Polymer. Angewandte Chemie, 2003, 115, 824-826.	2.0	89
16	A biomimetic mercury(ii)-gated single nanochannel. Chemical Communications, 2013, 49, 10679.	4.1	86
17	Chemical Dual-Responsive Wettability of Superhydrophobic PANI-PAN Coaxial Nanofibers. Macromolecular Rapid Communications, 2007, 28, 1135-1141.	3.9	85
18	Organic/Inorganic Hybrid Nanochannels Based on Polypyrroleâ€Embedded Alumina Nanopore Arrays: pHâ€• and Lightâ€Modulated Ion Transport. Advanced Functional Materials, 2015, 25, 2091-2098.	14.9	80

#	Article	IF	Citations
19	Regulating Water Adhesion on Superhydrophobic TiO₂ Nanotube Arrays. Advanced Functional Materials, 2014, 24, 6381-6388.	14.9	70
20	Highly Efficient Gating of Electrically Actuated Nanochannels for Pulsatile Drug Delivery Stemming from a Reversible Wettability Switch. Advanced Materials, 2018, 30, 1703323.	21.0	69
21	Phototunable Underwater Oil Adhesion of Micro/Nanoscale Hierarchicalâ€Structured ZnO Mesh Films with Switchable Contact Mode. Advanced Functional Materials, 2014, 24, 536-542.	14.9	67
22	Layered MoS2 nanoparticles on TiO2 nanotubes by a photocatalytic strategy for use as high-performance electrocatalysts in hydrogen evolution reactions. Green Chemistry, 2015, 17, 2764-2768.	9.0	64
23	Lightâ€Gating Titania/Alumina Heterogeneous Nanochannels with Regulatable Ion Rectification Characteristic. Advanced Functional Materials, 2014, 24, 424-431.	14.9	60
24	Olfactory Sensory Neuronâ€Mimetic CO₂ Activated Nanofluidic Diode with Fast Response Rate. Advanced Materials, 2015, 27, 1851-1855.	21.0	60
25	Bio-inspired Z-scheme g-C3N4/Ag2CrO4 for efficient visible-light photocatalytic hydrogen generation. Scientific Reports, 2018, 8, 16504.	3.3	60
26	Smart Bioinspired Nanochannels and their Applications in Energyâ€Conversion Systems. Advanced Materials, 2017, 29, 1702983.	21.0	56
27	Construction of biomimetic smart nanochannels with polymer membranes and application in energy conversion systems. Physical Chemistry Chemical Physics, 2012, 14, 4027.	2.8	53
28	Insight into the Role of Surface Wettability in Electrocatalytic Hydrogen Evolution Reactions Using Light-Sensitive Nanotubular TiO2 Supported Pt Electrodes. Scientific Reports, 2017, 7, 41825.	3.3	53
29	Plasmonic ternary hybrid photocatalyst based on polymeric g-C3N4 towards visible light hydrogen generation. Scientific Reports, 2020, 10, 721.	3.3	53
30	Nanofluidic Diode Based on Branched Alumina Nanochannels with Tunable Ionic Rectification. ACS Applied Materials & Interfaces, 2013, 5, 7931-7936.	8.0	52
31	Self-Assembled Porphyrin Nanofiber Membrane-Decorated Alumina Channels for Enhanced Photoelectric Response. ACS Nano, 2018, 12, 11169-11177.	14.6	48
32	Water-Assisted Fabrication of Polyaniline Honeycomb Structure Film. Journal of Physical Chemistry B, 2004, 108, 4586-4589.	2.6	46
33	3-D vertical arrays of TiO2 nanotubes on Ti meshes: Efficient photoanodes for water photoelectrolysis. Journal of Materials Chemistry, 2011, 21, 10354.	6.7	46
34	Artificial Ion Channels Regulating Lightâ€Induced Ionic Currents in Photoelectrical Conversion Systems. Advanced Materials, 2014, 26, 2329-2334.	21.0	46
35	Light-regulated ion transport through artificial ion channels based on TiO2 nanotubular arrays. Chemical Communications, 2012, 48, 5901.	4.1	45
36	Enhanced photoelectrical performance of TiO2 electrodes integrated with microtube-network structures. Journal of Materials Chemistry, 2007, 17, 5084.	6.7	44

#	Article	IF	Citations
37	A rechargeable electrochromic energy storage device enabling effective energy recovery. Journal of Materials Chemistry A, 2021, 9, 6451-6459.	10.3	43
38	Theoretical simulation of the ion current rectification (ICR) in nano-pores based on the Poissonâ€“Nernstâ€“Planck (PNP) model. Physical Chemistry Chemical Physics, 2014, 16, 23-32.	2.8	42
39	Nanochannels regulating ionic transport for boosting electrochemical energy storage and conversion: a review. Nanoscale, 2020, 12, 15923-15943.	5.6	42
40	Photonic crystal concentrator for efficient output of dye-sensitized solar cells. Journal of Materials Chemistry, 2008, 18, 2650.	6.7	41
41	Redox switch of ionic transport in conductive polypyrrole-engineered unipolar nanofluidic diodes. Nano Research, 2017, 10, 3715-3725.	10.4	39
42	An Effective Darkâ€“Visâ€“UV Ternary Biomimetic Switching Based on N3/Spiropyranâ€Modified Nanochannels. Advanced Materials, 2018, 30, e1804862.	21.0	39
43	pHâ€Resistant Nanofluidic Diode Membrane for Highâ€Performance Conversion of Salinity Gradient into Electric Energy. Energy Technology, 2019, 7, 1800952.	3.8	38
44	Photoelectric Cooperative Induced Wetting on Alignedâ€Nanopore Arrays for Liquid Reprography. Advanced Functional Materials, 2011, 21, 4519-4526.	14.9	35
45	Smooth Muscle Cellâ€Mimetic COâ€Regulated Ion Nanochannels. Advanced Materials, 2016, 28, 10780-10785.	21.0	35
46	PtAuCo Trimetallic Nanoalloys as Highly Efficient Catalysts toward Dehydrogenation of Ammonia Borane. ACS Sustainable Chemistry and Engineering, 2020, 8, 3734-3742.	6.7	35
47	Photocatalysis-Triggered Ion Rectification in Artificial Nanochannels Based on Chemically Modified Asymmetric TiO2 Nanotubes. Langmuir, 2013, 29, 4806-4812.	3.5	34
48	Self-Driven Infrared Electrochromic Device with Tunable Optical and Thermal Management. ACS Applied Materials & Interfaces, 2021, 13, 50319-50328.	8.0	33
49	Tunable rectifications in nanofluidic diodes by ion selectivity of charged polystyrene opals for osmotic energy conversion. Journal of Materials Chemistry A, 2020, 8, 11275-11281.	10.3	31
50	Construction of Metalâ€Organic Frameworks (MOFs)â€“Based Membranes and Their Ion Transport Applications. Small Science, 2021, 1, 2000035.	9.9	31
51	Robust Sandwichâ€Structured Nanofluidic Diodes Modulating Ionic Transport for an Enhanced Electrochromic Performance. Advanced Science, 2018, 5, 1800163.	11.2	28
52	An ion-gating multinanochannel system based on a copper-responsive self-cleaving DNAzyme. Chemical Communications, 2016, 52, 10020-10023.	4.1	27
53	Photoassisted salt-concentration-biased electricity generation using cation-selective porphyrin-based nanochannels membrane. Nano Energy, 2020, 76, 105086.	16.0	27
54	Calcein-Modified Multinanochannels on PET Films for Calcium-Responsive Nanogating. ACS Applied Materials & Interfaces, 2014, 6, 3794-3798.	8.0	26

#	Article	IF	Citations
55	Plasmonic cooperation effect of metal nanomaterials at Auâ€“TiO₂â€“Ag interface to enhance photovoltaic performance for dye-sensitized solar cells. RSC Advances, 2015, 5, 210-214.	3.6	25
56	Cooperative Effect of pH-Dependent Ion Transport within Two Symmetric-Structured Nanochannels. ACS Applied Materials & Interfaces, 2015, 7, 7709-7716.	8.0	24
57	CdS quantum dot-decorated titania/graphene nanosheets stacking structures for enhanced photoelectrochemical solar cells. RSC Advances, 2013, 3, 23755.	3.6	23
58	Temperature and Voltage Dual-Responsive Ion Transport in Bilayer-Intercalated Layered Membranes with 2D Nanofluidic Channels. Journal of Physical Chemistry C, 2017, 121, 18954-18961.	3.1	23
59	The Confinement Effect of Angstromâ€Sized Pores in Asymmetrical Membrane Constructed by Zeolitic Imidazolate Frameworks: Partially Dehydrated Ion Transport Performance. Small, 2019, 15, e1904866.	10.0	22
60	Alternating current output from a photosynthesis-inspired photoelectrochemical cell. Nano Energy, 2016, 28, 188-194.	16.0	21
61	N3/Al2O3 composite nanochannels: photoelectric and photoelectric-and-pH cooperatively controlled ion gating. Journal of Materials Chemistry A, 2017, 5, 19220-19226.	10.3	20
62	Artificial NO and Light Cooperative Nanofluidic Diode Inspired by Stomatal Closure of Guard Cells. ACS Applied Materials & Interfaces, 2018, 10, 3241-3247.	8.0	20
63	Biomimetic stimuliâ€responsive nanochannels and their applications. Electrophoresis, 2019, 40, 2058-2074.	2.4	20
64	The Ag shell thickness effect of Au@Ag@SiO₂ coreâ€“shell nanoparticles on the optoelectronic performance of dye sensitized solar cells. Chemical Communications, 2016, 52, 2390-2393.	4.1	19
65	The photoelectrochemical study of a series of ionically combined bischromophore transition metal complexes in LB films. Journal of Materials Chemistry, 2000, 10, 625-630.	6.7	18
66	Effect of Trivalent â€œCalcium-likeâ€•Cations on Ionic Transport Behaviors of Artificial Calcium-Responsive Nanochannels. Journal of Physical Chemistry C, 2018, 122, 24863-24870.	3.1	18
67	Optoelectrowettability conversion on superhydrophobic CdS QDs sensitized TiO2 nanotubes. Journal of Colloid and Interface Science, 2012, 366, 1-7.	9.4	17
68	Photocurrent generation in a light-harvesting system with multifunctional artificial nanochannels. Chemical Communications, 2015, 51, 12286-12289.	4.1	17
69	Using Smart Nanochannels as a Power Switch in Salinity Gradient Batteries. ChemNanoMat, 2019, 5, 1182-1187.	2.8	17
70	Action-potential-inspired osmotic power generation nanochannels. Journal of Membrane Science, 2022, 642, 119999.	8.2	16
71	Interfacial Effect of Novel Coreâ€“Triple Shell Structured Au@SiO₂@Ag@SiO₂ with Ultrathin SiO₂ Passivation Layer between the Metal Interfaces on Efficient Dyeâ€Sensitized Solar Cells. Advanced Materials Interfaces, 2015, 2, 1500383.	3.7	15
72	pH- and light-regulated ion transport in hourglass shaped Al₂O₃ nanochannels patterned with N719 and APTES. RSC Advances, 2016, 6, 63652-63659.	3.6	15

#	Article	IF	Citations
73	Asymmetric heterostructured SiO2/Al2O3 nanofluidic diodes modulating ionic transport for highly efficient light-gating device. Electrochimica Acta, 2019, 316, 266-272.	5.2	15
74	A high rectification ratio nanofluidic diode induced by an â€œion poolâ€• RSC Advances, 2020, 10, 7377-7383.	3.6	15
75	Highâ€Performance Respirationâ€Based Biocell Using Artificial Nanochannel Regulation. Advanced Materials, 2017, 29, 1606871.	21.0	13
76	Cell Junction Proteins-Mimetic Artificial Nanochannel System: Basic Logic Gates Implemented by Nanofluidic Diodes. Langmuir, 2019, 35, 3171-3175.	3.5	13
77	Largeâ€Area Covalent Organic Polymers Membrane via Solâ€“Gel Approach for Harvesting the Salinity Gradient Energy. Small, 2022, 18, e2107600.	10.0	13
78	Enhanced photoelectrochemical performance of ZnO photoanode with scattering hollow cavities. Applied Physics A: Materials Science and Processing, 2009, 96, 473-479.	2.3	12
79	Heterogeneous 3-D nanotubular arrays of CdS-TiO2: efficient collections of reflection light for enhanced photoelectric output. Journal of Materials Chemistry, 2012, 22, 22120.	6.7	12
80	Alumina Membrane with Hour-Glass Shaped Nanochannels: Tunable Ionic Current Rectification Device Modulated by Ions Gradient. Journal of Nanomaterials, 2014, 2014, 1-10.	2.7	12
81	Biomimic Redox Driven Ion Transportation in Smart Nanochannels. Journal of Physical Chemistry C, 2016, 120, 17342-17347.	3.1	12
82	Sandwich â€œIon Poolâ€•Structured Power Gating for Salinity Gradient Generation Devices. ACS Applied Materials & Interfaces, 2021, 13, 35197-35206.	8.0	12
83	Fabrication of Organic/Inorganic Hybrid Nanocomposite of 1,8-Naphthalimide and CdS in Self-Assembly Film. Crystal Growth and Design, 2003, 3, 623-626.	3.0	11
84	Photoelectric conversion behavior based on direct interfacial charge-transfer from porphyrin derivative to silicon nanowires. Applied Physics Letters, 2010, 97, 253111.	3.3	11
85	Ion current behaviors of mesoporous zeoliteâ€“polymer composite nanochannels prepared by water-assisted self-assembly. Chemical Communications, 2014, 50, 3552.	4.1	11
86	Mimicking how plants control CO2 influx: CO2 activation of ion current rectification in nanochannels. NPG Asia Materials, 2015, 7, e215-e215.	7.9	11
87	Interfacialâ€Potentialâ€Gradient Induced a Significant Enhancement of Photoelectric Conversion: Thiophene Polyelectrolyte (PTEâ€BS) and Bipyridine Ruthenium (N3) Cooperative Regulated Biomimetic Nanochannels. Advanced Energy Materials, 2021, 11, 2003340.	19.5	9
88	Patterned liquid permeation through the TiO2 nanotube array coated Ti mesh by photoelectric cooperation for liquid printing. Journal of Materials Chemistry A, 2014, 2, 2498.	10.3	8
89	Rodâ€Cellâ€Mimetic Photochromic Layered Ion Channels with Multiple Switchable States for Controllable Ion Transport. Chemistry - A European Journal, 2019, 25, 12795-12800.	3.3	8
90	â€œIon Poolâ€•Structural Ion Storage Device: A New Strategy to Collect Ions by Nanoconfinement Effects. Small, 2021, 17, e2102880.	10.0	8

#	Article	IF	Citations
91	Geometric Tailoring of Macroscale Ti₃C₂T_x MXene Lamellar Membrane for Logic Gate Circuits. ACS Nano, 2021, 15, 19266-19274.	14.6	8
92	TiO2 nanotubular arrays loaded with Ni(OH)2: naked-eye visible photoswitchable color change induced by oxidative energy storage. RSC Advances, 2013, 3, 22853.	3.6	7
93	Optimizing CdS intermediate layer of CdS/CdSe quantum dot-sensitized solar cells to increase light harvesting ability and improve charge separation efficiency. RSC Advances, 2016, 6, 99564-99569.	3.6	7
94	Ion Transport Behaviors of Nanofluidic Diode Bichannel Systems in the Independent and Synergistic Cascade Mode. ACS Applied Materials & Interfaces, 2019, 11, 26467-26473.	8.0	7
95	Enhancement of the Efficiency of g-C₃N₄ for Hydrogen Evolution by Bifunctionality of RuSe₂. ACS Applied Energy Materials, 2022, 5, 6080-6090.	5.1	7
96	Improved Interfacial Ion Transport through Nanofluidic Hybrid Membranes Based on Covalent Organic Frameworks for Osmotic Energy Generation. ACS Applied Energy Materials, 2022, 5, 7176-7184.	5.1	7
97	Kinetic Process of an Alkaline Earth Metal Ion Transmembrane through ZIF-8. Journal of Physical Chemistry Letters, 2021, 12, 5587-5592.	4.6	6
98	Synthesis, Functionalization and Application of Stimuli-Responsive Polymer Porous Membranes. Current Organic Chemistry, 2018, 22, 737-749.	1.6	6
99	Doubleâ€Network Ion Channels for Highâ€Performance Osmotic Power Generation. Advanced Materials Interfaces, 2022, 9, .	3.7	6
100	Self-assembled hyperbranched poly(para-Phenylene vinylene) monolayers: fabrication and characterization. Polymers for Advanced Technologies, 2003, 14, 341-348.	3.2	5
101	Stable and Recyclable SERS Substrates Based on Au-Loaded PET Nanocomposite Superhydrophobic Surfaces. Nano, 2018, 13, 1850053.	1.0	5
102	Electrochromic Nanochannels for Visual Nanofluidic Manipulation in Integrated Ionic Circuits. ACS Applied Materials & Interfaces, 2020, 12, 57314-57321.	8.0	5
103	Gap Confinement Effect of a Tandem Nanochannel System and Its Application in Salinity Gradient Power Generation. ACS Applied Materials & Interfaces, 2021, 13, 41159-41168.	8.0	5
104	Solvent-induced lengthened conjugated chains in electrochromic PEDOT for enhanced optical modulation. Solar Energy Materials and Solar Cells, 2022, 238, 111621.	6.2	5
105	QUASI-SOLID-STATE DYE-SENSITIZED SOLAR CELLS BASED ON ZnO PHOTOANODE. Chemical Engineering Communications, 2007, 195, 375-385.	2.6	3
106	Multispectral Plasmon of Anisotropic Core-shell Gold Nanorods@SiO2: Dual-band Absorption Enhancement with Coupling Dye Molecules. Chemical Research in Chinese Universities, 2018, 34, 772-780.	2.6	3
107	Interfacial effect of dual ultra-thin SiO₂ coreâ€“triple shell Au@SiO₂@Ag@SiO₂ for ultra-sensitive trinitrotoluene (TNT) detection. RSC Advances, 2020, 10, 3826-3831.	3.6	2
108	RÃ¼cktitelbild: High-Temperature Wetting Transition on Micro- and Nanostructured Surfaces (Angew.) Tj ETQq0 0 0 rgBT /Overlock 10	2.0	1

#	Article	IF	Citations
109	A new porphyrin sensitizer with phenolic binding group for high efficiency dye-sensitized solar cells. Materials Science-Poland, 2014, 32, 610-616.	1.0	1
110	Largeâ€Area Covalent Organic Polymers Membrane via Solâ€“Gel Approach for Harvesting the Salinity Gradient Energy (Small 20/2022). Small, 2022, 18, .	10.0	1
111	Back Cover: High-Temperature Wetting Transition on Micro- and Nanostructured Surfaces (Angew.) Tj ETQq1 1 0.784314 rgBT /Overlo	13.8	0