Jihan Kim

List of Publications by Year
in descending order

84 papers	5,834 citations	126708 33 h-index	74018 75 g-index
85 all docs	85 docs citations	85 times ranked	7690 citing authors

#	Article	IF	Citations
1	Metallic Ti₃C₂T_x MXene Gas Sensors with Ultrahigh Signal-to-Noise Ratio. ACS Nano, 2018, 12, 986-993.	7.3	1,153
2	In silico screening of carbon-capture materials. Nature Materials, 2012, 11, 633-641.	13.3	497
3	Highly Enhanced Gas Adsorption Properties in Vertically Aligned MoS₂ Layers. ACS Nano, 2015, 9, 9314-9321.	7.3	417
4	Superior Chemical Sensing Performance of Black Phosphorus: Comparison with MoS₂ and Graphene. Advanced Materials, 2016, 28, 7020-7028.	11.1	355
5	The materials genome in action: identifying the performance limits for methane storage. Energy and Environmental Science, 2015, 8, 1190-1199.	15.6	314
6	Ab initio carbon capture in open-site metalâ€“organic frameworks. Nature Chemistry, 2012, 4, 810-816.	6.6	310
7	Highly durable metal ensemble catalysts with full dispersion for automotive applications beyond single-atom catalysts. Nature Catalysis, 2020, 3, 368-375.	16.1	220
8	Inverse design of porous materials using artificial neural networks. Science Advances, 2020, 6, eaax9324.	4.7	171
9	Materials Genome in Action: Identifying the Performance Limits of Physical Hydrogen Storage. Chemistry of Materials, 2017, 29, 2844-2854.	3.2	169
10	Predicting Large CO₂ Adsorption in Aluminosilicate Zeolites for Postcombustion Carbon Dioxide Capture. Journal of the American Chemical Society, 2012, 134, 18940-18943.	6.6	129
11	Self-operating transpiration-driven electrokinetic power generator with an artificial hydrological cycle. Energy and Environmental Science, 2020, 13, 527-534.	15.6	122
12	New materials for methane capture from dilute and medium-concentration sources. Nature Communications, 2013, 4, 1694.	5.8	111
13	Applications of machine learning in metal-organic frameworks. Coordination Chemistry Reviews, 2020, 423, 213487.	9.5	100
14	User-friendly graphical user interface software for ideal adsorbed solution theory calculations. Korean Journal of Chemical Engineering, 2018, 35, 214-221.	1.2	88
15	Energy-efficient CO2 hydrogenation with fast response using photoexcitation of CO2 adsorbed on metal catalysts. Nature Communications, 2018, 9, 3027.	5.8	86
16	Computational Screening of Trillions of Metalâ€“Organic Frameworks for High-Performance Methane Storage. ACS Applied Materials & Interfaces, 2021, 13, 23647-23654.	4.0	81
17	Optimizing nanoporous materials for gas storage. Physical Chemistry Chemical Physics, 2014, 16, 5499.	1.3	76
18	Shift of the Branching Point of the Sideâ€Chain in Naphthalenediimide (NDI)â€Based Polymer for Enhanced Electron Mobility and Allâ€Polymer Solar Cell Performance. Advanced Functional Materials, 2018, 28, 1803613.	7.8	74

#	Article	IF	Citations
19	Computer-aided discovery of connected metal-organic frameworks. Nature Communications, 2019, 10, 3620.	5.8	71
20	Excavating hidden adsorption sites in metal-organic frameworks using rational defect engineering. Nature Communications, 2017, 8, 1539.	5.8	60
21	High-Throughput Characterization of Porous Materials Using Graphics Processing Units. Journal of Chemical Theory and Computation, 2012, 8, 1684-1693.	2.3	57
22	High-throughput computational screening of nanoporous adsorbents for CO₂ capture from natural gas. Molecular Systems Design and Engineering, 2016, 1, 175-188.	1.7	54
23	Text Mining Metalâ€“Organic Framework Papers. Journal of Chemical Information and Modeling, 2018, 58, 244-251.	2.5	43
24	Surface Plasmon Aided Ethanol Dehydrogenation Using Agâ€“Ni Binary Nanoparticles. ACS Catalysis, 2017, 7, 2294-2302.	5.5	42
25	Edge-Functionalized Graphene Nanoribbon Chemical Sensor: Comparison with Carbon Nanotube and Graphene. ACS Applied Materials & Interfaces, 2018, 10, 42905-42914.	4.0	41
26	Finding Hidden Signals in Chemical Sensors Using Deep Learning. Analytical Chemistry, 2020, 92, 6529-6537.	3.2	40
27	Polyelemental Nanolithography via Plasma Ion Bombardment: From Fabrication to Superior H₂ Sensing Application. Advanced Materials, 2019, 31, e1805343.	11.1	38
28	Polyelemental Nanoparticles as Catalysts for a Liâ€“O₂ Battery. ACS Nano, 2021, 15, 4235-4244.	7.3	38
29	Efficient Monte Carlo Simulations of Gas Molecules Inside Porous Materials. Journal of Chemical Theory and Computation, 2012, 8, 2336-2343.	2.3	36
30	Molybdenum carbide chemical sensors with ultrahigh signal-to-noise ratios and ambient stability. Journal of Materials Chemistry A, 2018, 6, 23408-23416.	5.2	35
31	Size-Matching Ligand Insertion in MOF-74 for Enhanced CO₂ Capture under Humid Conditions. Journal of Physical Chemistry C, 2017, 121, 24444-24451.	1.5	34
32	Understanding the Mechanisms of CO₂ Adsorption Enhancement in Pure Silica Zeolites under Humid Conditions. Journal of Physical Chemistry C, 2016, 120, 23500-23510.	1.5	33
33	Predicting performance limits of methane gas storage in zeolites with an artificial neural network. Journal of Materials Chemistry A, 2019, 7, 2709-2716.	5.2	33
34	2D Materials Decorated with Ultrathin and Porous Graphene Oxide for High Stability and Selective Surface Activity. Advanced Materials, 2020, 32, e2002723.	11.1	33
35	Void Space versus Surface Functionalization for Proton Conduction in Metalâ€“Organic Frameworks. Angewandte Chemie - International Edition, 2021, 60, 20173-20177.	7.2	32
36	Evaluating mixture adsorption models using molecular simulation. AICHE Journal, 2013, 59, 3054-3064.	1.8	31

#	Article	IF	Citations
37	Computational structure characterization tools for the era of material informatics. Chemical Engineering Science, 2015, 121, 322-330.	1.9	29
38	Oxide/ZIFâ€8 Hybrid Nanofiber Yarns: Heightened Surface Activity for Exceptional Chemiresistive Sensing. Advanced Materials, 2022, 34, e2105869.	11.1	29
39	Mining Insights on Metalâ€“Organic Framework Synthesis from Scientific Literature Texts. Journal of Chemical Information and Modeling, 2022, 62, 1190-1198.	2.5	27
40	Understanding gas adsorption in MOF-5/graphene oxide composite materials. Physical Chemistry Chemical Physics, 2017, 19, 11639-11644.	1.3	24
41	Photochemically Induced Water Harvesting in Metalâ€“Organic Framework. ACS Sustainable Chemistry and Engineering, 2019, 7, 15854-15859.	3.2	24
42	Molecular Monte Carlo Simulations Using Graphics Processing Units: To Waste Recycle or Not?. Journal of Chemical Theory and Computation, 2011, 7, 3208-3222.	2.3	23
43	Efficient Determination of Accurate Force Fields for Porous Materials Using ab Initio Total Energy Calculations. Journal of Physical Chemistry C, 2014, 118, 2693-2701.	1.5	23
44	Confinement of Ultrasmall Bimetallic Nanoparticles in Conductive Metalâ€“Organic Frameworks via Siteâ€Specific Nucleation. Advanced Materials, 2021, 33, e2101216.	11.1	23
45	Modeling adsorption properties of structurally deformed metalâ€“organic frameworks using structureâ€“property map. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7923-7928.	3.3	22
46	Understanding Reaction Pathways in High Dielectric Electrolytes Using Î²-Mo₂C as a Catalyst for Liâ€“CO₂ Batteries. ACS Applied Materials & Interfaces, 2020, 12, 32633-32641.	4.0	22
47	Nâ€“p-Conductor Transition of Gas Sensing Behaviors in Mo₂CT_x MXene. ACS Sensors, 2022, 7, 2225-2234.	4.0	20
48	Ligand Insertion in MOF-74 as Effective Design for Oxidation of Ethane to Ethanol. Journal of Physical Chemistry C, 2018, 122, 23078-23083.	1.5	19
49	Finely tuned inverse design of metalâ€“organic frameworks with user-desired Xe/Kr selectivity. Journal of Materials Chemistry A, 2021, 9, 21175-21183.	5.2	19
50	Computational prediction of hetero-interpenetration in metalâ€“organic frameworks. Chemical Communications, 2017, 53, 1953-1956.	2.2	18
51	Computational Design of a Photoresponsive Metalâ€“Organic Framework for Post Combustion Carbon Capture. Journal of Physical Chemistry C, 2020, 124, 13162-13167.	1.5	18
52	Suppressing Charge Disproportionation of MnO₂ Cathodes in Rechargeable Zinc Ion Batteries via Cooperative Jahnâ€Teller Distortion. Batteries and Supercaps, 2021, 4, 1881-1888.	2.4	17
53	Formation of toroidal Li₂O₂ in non-aqueous Liâ€“O₂ batteries with Mo₂CT_x MXene/CNT composite. RSC Advances, 2019, 9, 41120-41125.	1.7	16
54	Ultrathin Magnesium Nanosheet for Improved Hydrogen Storage with Fishbone Shaped One-Dimensional Carbon Matrix. ACS Applied Energy Materials, 2020, 3, 8143-8149.	2.5	16

#	Article	IF	Citations
55	Computational prediction of high methane storage capacity in V-MOF-74. Physical Chemistry Chemical Physics, 2017, 19, 21132-21139.	1.3	14
56	Rational Design of Aminopolymer for Selective Discrimination of Acidic Air Pollutants. ACS Sensors, 2018, 3, 1329-1337.	4.0	14
57	Computational techniques for characterisation of electrically conductive MOFs: quantum calculations and machine learning approaches. Journal of Materials Chemistry C, 2021, 9, 13584-13599.	2.7	14
58	Interface-Sensitized Chemiresistor: Integrated Conductive and Porous Metal-Organic Frameworks. Chemical Engineering Journal, 2022, 449, 137780.	6.6	14
59	Transferability of CO₂ Force Fields for Prediction of Adsorption Properties in All-Silica Zeolites. Journal of Physical Chemistry C, 2018, 122, 10892-10903.	1.5	12
60	Computational Identification of Connected MOF@COF Materials. Journal of Physical Chemistry C, 2021, 125, 5897-5903.	1.5	12
61	Gas Adsorption Enhancement in Partially Amorphized Metalâ€“Organic Frameworks. Journal of Physical Chemistry C, 2021, 125, 4509-4518.	1.5	11
62	Predicting low-k zeolite materials. Journal of Materials Chemistry C, 2014, 2, 2298-2300.	2.7	10
63	Thermodynamics of gas adsorption in <scp>MOF</scp>s using Ab Initio calculations. International Journal of Quantum Chemistry, 2016, 116, 569-572.	1.0	9
64	Tuning the electrode work function via a vapor-phase deposited ultrathin polymer film. Journal of Materials Chemistry C, 2016, 4, 831-839.	2.7	9
65	Influence of graphene thickness and grain boundaries on MoS₂ wrinkle nanostructures. Physical Chemistry Chemical Physics, 2018, 20, 17000-17008.	1.3	9
66	Isotherm parameter library and evaluation software for CO2 capture adsorbents. Computers and Chemical Engineering, 2020, 143, 107105.	2.0	9
67	New model for S-shaped isotherm data and its application to process modeling using IAST. Chemical Engineering Journal, 2021, 420, 127580.	6.6	9
68	Probing gas adsorption in MOFs using an efficient ab initio widom insertion Monte Carlo method. Journal of Computational Chemistry, 2016, 37, 2808-2815.	1.5	8
69	Computational Analysis of Linker Defective Metalâ€“Organic Frameworks for Membrane Separation Applications. Langmuir, 2019, 35, 3917-3924.	1.6	8
70	Rational modifications of PCN-700 to induce electrical conductivity: a computational study. Dalton Transactions, 2020, 49, 102-113.	1.6	8
71	Reverse shape selectivity of hexane isomer in ligand inserted MOF-74. RSC Advances, 2020, 10, 22601-22605.	1.7	8
72	Rational Tuning of Ultramicropore Dimensions in MOF-74 for Size-Selective Separation of Light Hydrocarbons. Chemistry of Materials, 2021, 33, 7686-7692.	3.2	8

#	Article	IF	Citations
73	Tunable Electrical Conductivity of Flexible Metalâ€“Organic Frameworks. Chemistry of Materials, 2022, 34, 254-265.	3.2	7
74	Application of transfer learning to predict diffusion properties in metalâ€“organic frameworks. Molecular Systems Design and Engineering, 2022, 7, 1056-1064.	1.7	7
75	Exploring Guest-Dependent Photoconductivity in a Donor-Containing Metalâ€“Organic Framework. Journal of Physical Chemistry C, 2021, 125, 10198-10206.	1.5	6
76	Machine learning-based discovery of molecules, crystals, and composites: A perspective review. Korean Journal of Chemical Engineering, 2021, 38, 1971-1982.	1.2	4
77	Confinement of Ultrasmall Bimetallic Nanoparticles in Conductive Metalâ€“Organic Frameworks via Siteâ€Specific Nucleation (Adv. Mater. 38/2021). Advanced Materials, 2021, 33, 2170302.	11.1	3
78	Void Space versus Surface Functionalization for Proton Conduction in Metalâ€“Organic Frameworks. Angewandte Chemie, 2021, 133, 20335-20339.	1.6	2
79	Understanding the Structural Collapse during Activation of Metalâ€“Organic Frameworks with Copper Paddlewheels. Inorganic Chemistry, 2022, 61, 9702-9709.	1.9	2
80	Computational Generation of Userâ€Desired Multivariate Metalâ€“Organic Framework Structures. ChemPhysChem, 2014, 15, 61-63.	1.0	1
81	Towards accurate porosity descriptors based on guest-host interactions. Journal of Molecular Graphics and Modelling, 2016, 66, 91-98.	1.3	1
82	Ultra-dense (~20 Tdot/in2) nanoparticle array from an ordered supramolecular dendrimer containing a metal precursor. Scientific Reports, 2019, 9, 3885.	1.6	1
83	Deep learning-based initial guess for minimum energy path calculations. Korean Journal of Chemical Engineering, 2021, 38, 406-410.	1.2	1
84	Innentitelbild: Void Space versus Surface Functionalization for Proton Conduction in Metalâ€“Organic Frameworks (Angew. Chem. 37/2021). Angewandte Chemie, 2021, 133, 20226-20226.	1.6	0