Michael Hirscher

List of Publications by Year
in descending order

74 papers	7,708 citations	81900 39 h-index	66911 78 g-index
80 all docs	80 docs citations	80 times ranked	8296 citing authors

#	Article	IF	Citations
1	Planar Metamaterial Analogue of Electromagnetically Induced Transparency for Plasmonic Sensing. Nano Letters, 2010, 10, 1103-1107.	9.1	1,135
2	Hydrogen adsorption in different carbon nanostructures. Carbon, 2005, 43, 2209-2214.	10.3	696
3	Hydrogen adsorption in a nickel based coordination polymer with open metal sites in the cylindrical cavities of the desolvated framework. Chemical Communications, 2006, , 959.	4.1	596
4	Materials for hydrogen-based energy storage â€“ past, recent progress and future outlook. Journal of Alloys and Compounds, 2020, 827, 153548.	5.5	518
5	Nitrogen-Rich Covalent Triazine Frameworks as High-Performance Platforms for Selective Carbon Capture and Storage. Chemistry of Materials, 2015, 27, 8001-8010.	6.7	228
6	Confinement of MgH₂Nanoclusters within Nanoporous Aerogel Scaffold Materials. ACS Nano, 2009, 3, 3521-3528.	14.6	223
7	Elucidating Gating Effects for Hydrogen Sorption in MFUâ€4â€Type Triazolateâ€Based Metalâ€“Organic Frameworks Featuring Different Pore Sizes. Chemistry - A European Journal, 2011, 17, 1837-1848.	3.3	222
8	Barely porous organic cages for hydrogen isotope separation. Science, 2019, 366, 613-620.	12.6	210
9	A Cryogenically Flexible Covalent Organic Framework for Efficient Hydrogen Isotope Separation by Quantum Sieving. Angewandte Chemie - International Edition, 2013, 52, 13219-13222.	13.8	183
10	A fluorene based covalent triazine framework with high CO₂and H₂capture and storage capacities. Journal of Materials Chemistry A, 2014, 2, 5928-5936.	10.3	159
11	Heat of Adsorption for Hydrogen in Microporous Highâ€Surfaceâ€Area Materials. ChemPhysChem, 2008, 9, 2181-2184.	2.1	155
12	MFUâ€4 â€“ A Metalâ€Organic Framework for Highly Effective H₂/D₂ Separation. Advanced Materials, 2013, 25, 635-639.	21.0	150
13	Hydrogen storage in metalâ€“organic frameworks. Scripta Materialia, 2007, 56, 809-812.	5.2	143
14	Metal-organic frameworks for hydrogen storage. Microporous and Mesoporous Materials, 2010, 129, 335-339.	4.4	143
15	Metal@COFs: Covalent Organic Frameworks as Templates for Pd Nanoparticles and Hydrogen Storage Properties of Pd@COFâ€102 Hybrid Material. Chemistry - A European Journal, 2012, 18, 10848-10856.	3.3	138
16	Highly Effective Hydrogen Isotope Separation in Nanoporous Metalâ€“Organic Frameworks with Open Metal Sites: Direct Measurement and Theoretical Analysis. ACS Nano, 2014, 8, 761-770.	14.6	135
17	Route to a Family of Robust, Nonâ€interpenetrated Metalâ€“Organic Frameworks with ptoâ€like Topology. Chemistry - A European Journal, 2011, 17, 13007-13016.	3.3	127
18	Exploiting Diffusion Barrier and Chemical Affinity of Metalâ€“Organic Frameworks for Efficient Hydrogen Isotope Separation. Journal of the American Chemical Society, 2017, 139, 15135-15141.	13.7	125

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19	Desorption Studies of Hydrogen in Metalâ€"Organic Frameworks. Angewandte Chemie - International Edition, 2008, 47, 2138-2142.	13.8	112
20	Selective Hydrogen Isotope Separation via Breathing Transition in MIL-53(Al). Journal of the American Chemical Society, 2017, 139, 17743-17746.	13.7	111
21	Hydrogen Storage by Cryoadsorption in Ultrahighâ€Porosity Metalâ€"Organic Frameworks. Angewandte Chemie - International Edition, 2011, 50, 581-582.	13.8	104
22	Dynamic Janus Metasurfaces in the Visible Spectral Region. Nano Letters, 2018, 18, 4584-4589.	9.1	104
23	Quantum Sieving for Separation of Hydrogen Isotopes Using MOFs. European Journal of Inorganic Chemistry, 2016, 2016, 4278-4289.	2.0	97
24	Nanostructured materials for solid-state hydrogen storage: A review of the achievement of COST Action MP1103. International Journal of Hydrogen Energy, 2016, 41, 14404-14428.	7.1	94
25	High surface area polyHIPEs with hierarchical pore system. Soft Matter, 2009, 5, 1055.	2.7	84
26	Nanoscale imaging using deep ultraviolet digital holographic microscopy. Optics Express, 2010, 18, 14159.	3.4	84
27	Low-temperature thermal-desorption mass spectroscopy applied to investigate the hydrogen adsorption on porous materials. Microporous and Mesoporous Materials, 2007, 103, 230-234.	4.4	69
28	Nanosponges for hydrogen storage. Journal of Materials Chemistry, 2012, 22, 10134.	6.7	69
29	Volumetric measurement of hydrogen storage in HCl-treated polyaniline and polypyrrole. Synthetic Metals, 2005, 151, 208-210.	3.9	68
30	Quantum cryo-sieving for hydrogen isotope separation in microporous frameworks: an experimental study on the correlation between effective quantum sieving and pore size. Journal of Materials Chemistry A, 2013, 1, 3244.	10.3	68
31	Volumetric Hydrogen Storage Capacity in Metalâ€"Organic Frameworks. Energy Technology, 2018, 6, 578-582.	3.8	66
32	Exploiting Dynamic Opening of Apertures in a Partially Fluorinated MOF for Enhancing H₂ Desorption Temperature and Isotope Separation. Journal of the American Chemical Society, 2019, 141, 19850-19858.	13.7	60
33	Influence of [Mo₆Br₈F₆]^{2âˆ'}Cluster Unit Inclusion within the Mesoporous Solid MIL-101 on Hydrogen Storage Performance. Langmuir, 2010, 26, 11283-11290.	3.5	59
34	Generation of Switchable Singular Beams with Dynamic Metasurfaces. ACS Nano, 2019, 13, 7100-7106.	14.6	58
35	Hydrogen spillover measurements of unbridged and bridged metalâ€"organic frameworksâ€"revisited. Physical Chemistry Chemical Physics, 2010, 12, 10457.	2.8	57
36	Carbon nanostructures: An efficient hydrogen storage medium for fuel cells. Fuel Cells Bulletin, 2001, 4, 9-12.	0.1	53

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37	Efficient synthesis for large-scale production and characterization for hydrogen storage of ligand exchanged MOF-74/174/184-M (M = Mg2+, Ni2+). International Journal of Hydrogen Energy, 2017, 42, 1027-1035.	7.1	50
38	Specific Isotope-Responsive Breathing Transition in Flexible Metalâ€“Organic Frameworks. Journal of the American Chemical Society, 2020, 142, 13278-13282.	13.7	47
39	The usable capacity of porous materials for hydrogen storage. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	44
40	BET specific surface area and pore structure of MOFs determined by hydrogen adsorption at 20 K. Physical Chemistry Chemical Physics, 2011, 13, 3220-3222.	2.8	39
41	Hydrogen physisorption in high SSA microporous materials â€“ A comparison between AX-21_33 and MOF-177 at cryogenic conditions. International Journal of Hydrogen Energy, 2011, 36, 586-591.	7.1	39
42	Hydrogen isotope separation in metal-organic frameworks: Kinetic or chemical affinity quantum-sieving?. Microporous and Mesoporous Materials, 2015, 216, 133-137.	4.4	39
43	Experimental assessment of physical upper limit for hydrogen storage capacity at 20 K in densified MIL-101 monoliths. RSC Advances, 2014, 4, 2648-2651.	3.6	38
44	â€œJob-Sharingâ€•Storage of Hydrogen in Ru/Li₂O Nanocomposites. Nano Letters, 2015, 15, 4170-4175.	9.1	36
45	H2/D2 adsorption and desorption studies on carbon molecular sieves with different pore structures. Carbon, 2013, 57, 239-247.	10.3	34
46	Thermodynamics, kinetics and selectivity of H 2 and D 2 on zeolite 5A below 77K. Microporous and Mesoporous Materials, 2018, 264, 22-27.	4.4	32
47	High Volumetric Hydrogen Storage Capacity using Interpenetrated Metalâ€“Organic Frameworks. Energy Technology, 2018, 6, 510-512.	3.8	31
48	Highly effective hydrogen isotope separation through dihydrogen bond on Cu(I)-exchanged zeolites well above liquid nitrogen temperature. Chemical Engineering Journal, 2020, 391, 123485.	12.7	29
49	Magnesium- and intermetallic alloys-based hydrides for energy storage: modelling, synthesis and properties. Progress in Energy, 2022, 4, 032007.	10.9	29
50	Direct patterning of vortex generators on a fiber tip using a focused ion beam. Optics Letters, 2016, 41, 2133.	3.3	28
51	Isotope-selective pore opening in a flexible metal-organic framework. Science Advances, 2022, 8, eabn7035.	10.3	28
52	A High Heat of Adsorption for Hydrogen in Magnesium Formate. ChemSusChem, 2010, 3, 758-761.	6.8	27
53	Hydrogen adsorption properties of platinum decorated hierarchically structured templated carbons. Microporous and Mesoporous Materials, 2013, 177, 66-74.	4.4	27
54	An International Laboratory Comparison Study of Volumetric and Gravimetric Hydrogen Adsorption Measurements. ChemPhysChem, 2019, 20, 1997-2009.	2.1	26

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55	Raman studies of hydrogen adsorbed on nanostructured porous materials. Physical Chemistry Chemical Physics, 2008, 10, 2910.	2.8	25
56	Hydrogen permeability measurement through Pd, Ni and Fe membranes. Journal of Alloys and Compounds, 2001, 321, 17-23.	5.5	24
57	Remarks about spillover and hydrogen adsorption â€“ Comments on the contributions of A.V. Talyzin and R.T. Yang. Microporous and Mesoporous Materials, 2010, 135, 209-210.	4.4	24
58	Characterization of hydrogen/deuterium adsorption sites in nanoporous Cuâ€“BTC by low-temperature thermal-desorption mass spectroscopy. Microporous and Mesoporous Materials, 2011, 142, 725-729.	4.4	24
59	Flexibility of a Metalâ€“Organic Framework Enhances Gas Separation and Enables Quantum Sieving. Chemistry of Materials, 2021, 33, 8886-8894.	6.7	23
60	Hydrogen storage in complex hydrides: past activities and new trends. Progress in Energy, 2022, 4, 032009.	10.9	23
61	Interplay of Linker Functionalization and Hydrogen Adsorption in the Metalâ€“Organic Framework MIL-101. Journal of Physical Chemistry C, 2014, 118, 19572-19579.	3.1	22
62	Hydrogen Energy. ChemPhysChem, 2019, 20, 1157-1157.	2.1	22
63	Singleâ€Step 3D Nanofabrication of Kinoform Optics via Grayâ€Scale Focused Ion Beam Lithography for Efficient Xâ€Ray Focusing. Advanced Optical Materials, 2015, 3, 792-800.	7.3	17
64	Systematic Experimental Study on Quantum Sieving of Hydrogen Isotopes in Metalâ€Amideâ€Imidazolate Frameworks with narrow 1â€D Channels. ChemPhysChem, 2019, 20, 1311-1315.	2.1	17
65	Improving Reproducibility in Hydrogen Storage Material Research. ChemPhysChem, 2021, 22, 2141-2157.	2.1	16
66	Hydrogen Isotope Separation Using a Metalâ€“Organic Cage Built from Macrocycles. Angewandte Chemie - International Edition, 2022, 61, .	13.8	14
67	Research and development of hydrogen carrier based solutions for hydrogen compression and storage. Progress in Energy, 2022, 4, 042005.	10.9	14
68	Hydrogen permeation through Pd/Fe and Pd/Ni multilayer systems. Journal of Alloys and Compounds, 2005, 393, 5-10.	5.5	13
69	Hydrogen isotopes separation in Ag(I) exchanged ZSM-5 zeolite through strong chemical affinity quantum sieving. Microporous and Mesoporous Materials, 2021, 313, 110820.	4.4	13
70	Tailoring morphological and chemical properties of covalent triazine frameworks for dual CO2 and H2 adsorption. International Journal of Hydrogen Energy, 2022, 47, 8434-8445.	7.1	12
71	Chemical Affinity of Ag-Exchanged Zeolites for Efficient Hydrogen Isotope Separation. Inorganic Chemistry, 2022, 61, 9413-9420.	4.0	9
72	Hydrogen and deuterium separation on metal organic frameworks based on Cu- and Zn-BTC: an experimental and theoretical study. Adsorption, 2021, 27, 925-935.	3.0	8

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73	How to functionalise metalâ€"organic frameworks to enable guest nanocluster embedment. Journal of Materials Chemistry A, 2020, 8, 4889-4897.	10.3	6
74	Hydrogen isotope separation using a metalâ€organic cage built from macrocycles. Angewandte Chemie, 0, , .	2.0	2