

Niklas Hedin

List of Publications by Year in descending order

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142
papers

6,515
citations

57631

44
h-index

71532

76
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153
all docs

153
docs citations

153
times ranked

7633
citing authors

#	ARTICLE	IF	CITATIONS
1	Adsorbents for the post-combustion capture of CO ₂ using rapid temperature swing or vacuum swing adsorption. Applied Energy, 2013, 104, 418-433.	5.1	346
2	Proto- <i>Calcite</i> and Proto- <i>Vaterite</i> in Amorphous Calcium Carbonates. Angewandte Chemie - International Edition, 2010, 49, 8889-8891.	7.2	284
3	Structuring adsorbents and catalysts by processing of porous powders. Journal of the European Ceramic Society, 2014, 34, 1643-1666.	2.8	264
4	Mechanisms and Kinetics for Sorption of CO ₂ on Bicontinuous Mesoporous Silica Modified with <i>n</i> -Propylamine. Langmuir, 2011, 27, 11118-11128.	1.6	260
5	Activated carbons prepared from hydrothermally carbonized waste biomass used as adsorbents for CO ₂ . Applied Energy, 2013, 112, 526-532.	5.1	222
6	Sorbents for CO ₂ capture from flue gas— aspects from materials and theoretical chemistry. Nanoscale, 2010, 2, 1819.	2.8	213
7	Zeolites and related sorbents with narrow pores for CO ₂ separation from flue gas. RSC Advances, 2014, 4, 14480-14494.	1.7	210
8	Carbon Dioxide Capture on Amine-Rich Carbonaceous Materials Derived from Glucose. ChemSusChem, 2010, 3, 840-845.	3.6	170
9	Temperature-Induced Uptake of CO ₂ and Formation of Carbamates in Mesocaged Silica Modified with <i>n</i> -Propylamines. Langmuir, 2010, 26, 10013-10024.	1.6	155
10	NaKA sorbents with high CO ₂ -over-N ₂ selectivity and high capacity to adsorb CO ₂ . Chemical Communications, 2010, 46, 4502.	2.2	145
11	Strong and binder free structured zeolite sorbents with very high CO ₂ -over-N ₂ selectivities and high capacities to adsorb CO ₂ rapidly. Energy and Environmental Science, 2012, 5, 7664.	15.6	144
12	A Porphyrinic Zirconium Metal-Organic Framework for Oxygen Reduction Reaction: Tailoring the Spacing between Active-Sites through Chain-Based Inorganic Building Units. Journal of the American Chemical Society, 2020, 142, 15386-15395.	6.6	139
13	Synthesis of microporous organic polymers with high CO ₂ -over-N ₂ selectivity and CO ₂ adsorption. Journal of Materials Chemistry A, 2013, 1, 3406.	5.2	134
14	In Situ Synthesis of an Imidazolate- <i>4</i> -amide- <i>5</i> -imidate Ligand and Formation of a Microporous Zinc-Organic Framework with H ₂ and CO ₂ Storage Ability. Angewandte Chemie - International Edition, 2010, 49, 1258-1262.	7.2	126
15	Multinuclear Solid-State NMR Studies of Ordered Mesoporous Bioactive Glasses. Journal of Physical Chemistry C, 2008, 112, 5552-5562.	1.5	125
16	PFG NMR self-diffusion of small hydrocarbons in high silica DDR, CHA and LTA structures. Microporous and Mesoporous Materials, 2008, 109, 327-334.	2.2	119
17	Microporous adsorbents for CO ₂ capture – a case for microporous polymers?. Materials Today, 2014, 17, 397-403.	8.3	111
18	Adsorption kinetics for CO ₂ on highly selective zeolites NaKA and nano-NaKA. Applied Energy, 2013, 112, 1326-1336.	5.1	110

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19	Selective separation of CO ₂ and CH ₄ for biogas upgrading on zeolite NaKA and SAPO-56. Applied Energy, 2016, 162, 613-621.	5.1	102
20	Structure of a Surfactant-Templated Silicate Framework in the Absence of 3D Crystallinity. Journal of the American Chemical Society, 2004, 126, 9425-9432.	6.6	96
21	Nanostructural features of demosponge biosilica. Journal of Structural Biology, 2003, 144, 271-281.	1.3	90
22	Carbon dioxide adsorption on mesoporous silica surfaces containing amine-like motifs. Applied Energy, 2010, 87, 2907-2913.	5.1	84
23	Reactive Oxygenated Species Generated on Iodide-Doped BiVO ₄ /BaTiO ₃ Heterostructures with Ag/Cu Nanoparticles by Coupled Piezophototronic Effect and Plasmonic Excitation. Advanced Functional Materials, 2021, 31, 2009594.	7.8	80
24	Water as the Key to Proto-Aragonite Amorphous CaCO ₃ . Angewandte Chemie - International Edition, 2016, 55, 8117-8120.	7.2	78
25	Quantification of chemisorption and physisorption of carbon dioxide on porous silica modified by propylamines: Effect of amine density. Microporous and Mesoporous Materials, 2012, 159, 42-49.	2.2	75
26	Interpenetrated metal-organic frameworks and their uptake of CO ₂ at relatively low pressures. Journal of Materials Chemistry, 2012, 22, 10345.	6.7	73
27	Silicoaluminophosphates as CO ₂ sorbents. Microporous and Mesoporous Materials, 2012, 156, 90-96.	2.2	71
28	Aluminophosphates for CO ₂ Separation. ChemSusChem, 2011, 4, 91-97.	3.6	70
29	Semiconducting piezoelectric heterostructures for piezo- and piezophotocatalysis. Nano Energy, 2022, 96, 107141.	8.2	69
30	Disordered amorphous calcium carbonate from direct precipitation. CrystEngComm, 2015, 17, 4842-4849.	1.3	67
31	Adsorption of CO ₂ on a micro-/mesoporous polyimine modified with tris(2-aminoethyl)amine. Journal of Materials Chemistry A, 2015, 3, 16229-16234.	5.2	65
32	Synergetic contribution of nitrogen and fluorine species in porous carbons as metal-free and bifunctional oxygen electrocatalysts for zinc-air batteries. Applied Catalysis B: Environmental, 2021, 297, 120448.	10.8	64
33	Activated Carbons for Water Treatment Prepared by Phosphoric Acid Activation of Hydrothermally Treated Beer Waste. Industrial & Engineering Chemistry Research, 2014, 53, 15389-15397.	1.8	63
34	Nonsurfactant Supramolecular Synthesis of Ordered Mesoporous Silica. Journal of the American Chemical Society, 2009, 131, 3189-3191.	6.6	59
35	Temperature Imaging by ¹ H NMR and Suppression of Convection in NMR Probes. Journal of Magnetic Resonance, 1998, 131, 126-130.	1.2	54
36	High-Performance Magnetic Activated Carbon from Solid Waste from Lignin Conversion Processes. 1. Their Use As Adsorbents for CO ₂ . ACS Sustainable Chemistry and Engineering, 2017, 5, 3087-3095.	3.2	52

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37	PFG NMR self-diffusion of propylene in ITQ-29, CaA and NaCaA: Window size and cation effects. <i>Microporous and Mesoporous Materials</i> , 2007, 98, 182-188.	2.2	49
38	Enantioselective Heterogeneous Synergistic Catalysis for Asymmetric Cascade Transformations. <i>Advanced Synthesis and Catalysis</i> , 2014, 356, 2485-2492.	2.1	49
39	Growth of C12E8 Micelles with Increasing Temperature. A Convection-Compensated PGSE NMR Study. <i>Langmuir</i> , 2000, 16, 7548-7550.	1.6	48
40	Selective NMR Measurements of Homonuclear Scalar Couplings in Isotopically Enriched Solids. <i>Journal of Physical Chemistry B</i> , 2006, 110, 16982-16991.	1.2	48
41	Shape Changes of C16TABr Micelles on Benzene Solubilization. <i>Journal of Physical Chemistry B</i> , 1999, 103, 9631-9639.	1.2	46
42	Dynamics and Disorder in Surfactant-Templated Silicate Layers Studied by Solid-State NMR Dephasing Times and Correlated Line Shapes. <i>Journal of Physical Chemistry C</i> , 2008, 112, 9145-9154.	1.5	46
43	Carbon Dioxide Sorbents with Propylamine Groups [~] Silica Functionalized with a Fractional Factorial Design Approach. <i>Langmuir</i> , 2011, 27, 3822-3834.	1.6	45
44	Sensitivity considerations in polarization transfer and filtering using dipole [~] dipole couplings: Implications for biomineral systems. <i>Solid State Nuclear Magnetic Resonance</i> , 2006, 29, 170-182.	1.5	43
45	Microporous organic polymers as CO ₂ adsorbents: advances and challenges. <i>Materials Today Advances</i> , 2020, 6, 100052.	2.5	42
46	Iron Oxide Nanoparticles Embedded in Activated Carbons Prepared from Hydrothermally Treated Waste Biomass. <i>ChemSusChem</i> , 2014, 7, 875-882.	3.6	39
47	Interactions of Charged Porphyrins with Nonionic Triblock Copolymer Hosts in Aqueous Solutions. <i>Langmuir</i> , 2004, 20, 10399-10412.	1.6	38
48	Hydrothermal Phase Transformation of Bicontinuous Cubic Mesoporous Material AMS-6. <i>Chemistry of Materials</i> , 2008, 20, 3857-3866.	3.2	37
49	Spherical and Porous Particles of Calcium Carbonate Synthesized with Food Friendly Polymer Additives. <i>Crystal Growth and Design</i> , 2015, 15, 3609-3616.	1.4	35
50	Nature of Chemisorbed CO ₂ in Zeolite A. <i>Journal of Physical Chemistry C</i> , 2019, 123, 21497-21503.	1.5	34
51	Fast Diffusion of the Cl ⁻ Ion in the Headgroup Region of an Oppositely Charged Micelle. A ³⁵ Cl NMR Spin Relaxation Study. <i>Journal of Physical Chemistry B</i> , 2000, 104, 8544-8547.	1.2	33
52	Molecular insight into the mode-of-action of phosphonate monolayers as active functions of hybrid metal oxide adsorbents. Case study in sequestration of rare earth elements. <i>RSC Advances</i> , 2015, 5, 24575-24585.	1.7	33
53	Assessment of the effects of process water recirculation on the surface chemistry and morphology of hydrochar. <i>Renewable Energy</i> , 2020, 155, 1173-1180.	4.3	32
54	A semiconducting microporous framework of Cd ₆ Ag ₄ (SPh) ₁₆ clusters interlinked using rigid and conjugated bipyridines. <i>Chemical Communications</i> , 2014, 50, 3710-3712.	2.2	29

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55	Role of Ion Mobility in Molecular Sieving of CO ₂ over N ₂ with Zeolite NaKA. Journal of Physical Chemistry C, 2013, 117, 24259-24267.	1.5	28
56	Highly efficient adsorption of benzothiophene from model fuel on a metal-organic framework modified with dodeca-tungstophosphoric acid. Chemical Engineering Journal, 2019, 362, 30-40.	6.6	28
57	Electrochemical Denitrification and Oxidative Dehydrogenation of Ethylbenzene over N-doped Mesoporous Carbon: Atomic Level Understanding of Catalytic Activity by ¹⁵ N NMR Spectroscopy. Chemistry of Materials, 2020, 32, 7263-7273.	3.2	28
58	Self-Assembly Mechanism of Folate-Templated Mesoporous Silica. Langmuir, 2013, 29, 12003-12012.	1.6	27
59	Perspectives on NMR studies of CO ₂ adsorption. Current Opinion in Colloid and Interface Science, 2018, 33, 53-62.	3.4	27
60	An Isorecticular Family of Microporous Metal-Organic Frameworks Based on Zinc and 2-Substituted Imidazolate-4-amide-5-imidate: Syntheses, Structures and Properties. Chemistry - A European Journal, 2012, 18, 11630-11640.	1.7	26
61	K ⁺ Exchanged Zeolite ZK-4 as a Highly Selective Sorbent for CO ₂ . Langmuir, 2014, 30, 9682-9690.	1.6	26
62	Introducing the crystalline phase of dicalcium phosphate monohydrate. Nature Communications, 2020, 11, 1546.	5.8	26
63	Efficient Production of Solar Hydrogen Peroxide Using Piezoelectric Polarization and Photoinduced Charge Transfer of Nanopiezoelectrics Sensitized by Carbon Quantum Dots. Advanced Science, 2022, 9, e2105792.	5.6	26
64	Controlling the Assembly of Nanocrystalline ZnO Films by a Transient Amorphous Phase in Solution. Journal of Physical Chemistry C, 2008, 112, 5373-5383.	1.5	25
65	Kinetic control of particle-mediated calcium carbonate crystallization. CrystEngComm, 2011, 13, 4641.	1.3	24
66	Effects of carbon dioxide captured from ambient air on the infrared spectra of supported amines. Vibrational Spectroscopy, 2016, 87, 215-221.	1.2	24
67	Adsorption of CTAB surfactants on activated carbons. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2013, 436, 62-70.	2.3	23
68	Perspectives on the adsorption of CO ₂ on amine-modified silica studied by infrared spectroscopy. Current Opinion in Green and Sustainable Chemistry, 2019, 16, 13-19.	3.2	23
69	Highly selective uptake of carbon dioxide on the zeolite Na ₂ 10.2 KCs _{0.8} -LTA a possible sorbent for biogas upgrading. Physical Chemistry Chemical Physics, 2016, 18, 16080-16083.	1.3	22
70	Selective Adsorption of CO ₂ on Zeolites NaK-ZK-4 with Si/Al of 1.8-2.8. ACS Omega, 2020, 5, 25371-25380.	1.6	21
71	Porous tablets of crystalline calcium carbonate via sintering of amorphous nanoparticles. CrystEngComm, 2013, 15, 1257.	1.3	20
72	The Use of Porous Palladium(II)-polyimine in Cooperatively-catalyzed Highly Enantioselective Cascade Transformations. Advanced Synthesis and Catalysis, 2015, 357, 2150-2156.	2.1	20

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73	Aluminophosphate monoliths with high CO ₂ -over-N ₂ selectivity and CO ₂ capture capacity. RSC Advances, 2014, 4, 55877-55883.	1.7	19
74	High-Performance Magnetic Activated Carbon from Solid Waste from Lignin Conversion Processes. 2. Their Use as NiMo Catalyst Supports for Lignin Conversion. ACS Sustainable Chemistry and Engineering, 2017, 5, 11226-11237.	3.2	19
75	Local energy decomposition analysis and molecular properties of encapsulated methane in fullerene (CH ₄ @C ₆₀). Physical Chemistry Chemical Physics, 2021, 23, 21554-21567.	1.3	19
76	Stepwise assembly of a semiconducting coordination polymer [Cd ₈ S(SPh) ₁₄ (DMF)(bpy)] _n and its photodegradation of organic dyes. Dalton Transactions, 2015, 44, 6400-6405.	1.6	18
77	CO ₂ -Induced Displacement of Na ⁺ and K ⁺ in Zeolite NaK -A. Journal of Physical Chemistry C, 2018, 122, 17211-17220.	1.5	18
78	Fast Diffusion of Br-Ions on a Micellar Surface. Journal of Physical Chemistry B, 1999, 103, 9640-9644.	1.2	17
79	Heterogenized Wilkinson-Type Catalyst for Transfer Hydrogenation of Carbonyl Compounds. European Journal of Organic Chemistry, 2011, 2011, 4409-4414.	1.2	17
80	Embedded proteins and sacrificial bonds provide the strong adhesive properties of gastroliths. Nanoscale, 2012, 4, 3910.	2.8	17
81	Tailored activated carbons for supercapacitors derived from hydrothermally carbonized sugars by chemical activation. RSC Advances, 2016, 6, 110629-110641.	1.7	17
82	Site-Specific Adsorption of CO ₂ in Zeolite NaK-A. Journal of Physical Chemistry C, 2018, 122, 27005-27015.	1.5	17
83	Microporous Humins Prepared from Sugars and Bio-Based Polymers in Concentrated Sulfuric Acid. ACS Sustainable Chemistry and Engineering, 2019, 7, 1018-1027.	3.2	17
84	Highly Porous Hypercrosslinked Polymers Derived from Biobased Molecules. ChemSusChem, 2019, 12, 839-847.	3.6	16
85	Ostwald Ripening of an Emulsion Monitored by PGSE NMR. Langmuir, 2001, 17, 4746-4752.	1.6	15
86	UV-Visible and Plasmonic Nanospectroscopy of the CO ₂ Adsorption Energetics in a Microporous Polymer. Analytical Chemistry, 2015, 87, 10161-10165.	3.2	15
87	Sustainability of microporous polymers and their applications. Science China Chemistry, 2017, 60, 1033-1055.	4.2	15
88	Effects of Metal Ions, Metal, and Metal Oxide Particles on the Synthesis of Hydrochars. ACS Omega, 2020, 5, 5601-5607.	1.6	15
89	Noise Reduction in Quadrupolar Echo Spectra at Short Echo Times. Journal of Magnetic Resonance, 2001, 152, 214-216.	1.2	14
90	Effects of Pressure and the Addition of a Rejected Material from Municipal Waste Composting on the Pyrolysis of Two-Phase Olive Mill Waste. Energy & Fuels, 2016, 30, 8055-8064.	2.5	14

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91	Transport-Mediated Control of Particles of Calcium Carbonate. <i>Crystal Growth and Design</i> , 2009, 9, 4581-4583.	1.4	13
92	Strong discs of activated carbons from hydrothermally carbonized beer waste. <i>Carbon</i> , 2014, 78, 521-531.	5.4	13
93	Effects of hydrothermal carbonization conditions on the textural and electrical properties of activated carbons. <i>Carbon</i> , 2016, 107, 619-621.	5.4	13
94	Ultramicroporous CO ₂ adsorbents with tunable mesopores based on polyimines synthesized under off-stoichiometric conditions. <i>Microporous and Mesoporous Materials</i> , 2016, 222, 80-86.	2.2	13
95	Microporous Humins Synthesized in Concentrated Sulfuric Acid Using 5-Hydroxymethyl Furfural. <i>ACS Omega</i> , 2018, 3, 8537-8545.	1.6	13
96	A Mechanistic Study of the Formation of Mesoporous Structures from in Situ AC Conductivity Measurements. <i>Langmuir</i> , 2007, 23, 9875-9881.	1.6	12
97	Secondary structure conversions of Mycobacterium tuberculosis ribonucleotide reductase protein R2 under varying pH and temperature conditions. <i>Biophysical Chemistry</i> , 2008, 137, 43-48.	1.5	12
98	Influence of pressure and temperature on key physicochemical properties of corn stover-derived biochar. <i>Fuel</i> , 2016, 186, 525-533.	3.4	12
99	Insights into the Exfoliation Process of V ₂ O ₅ ·nH ₂ O Nanosheet Formation Using Real-Time ⁵¹ V NMR. <i>ACS Omega</i> , 2019, 4, 10899-10905.	1.6	12
100	Deposition of silica nanoparticles onto alumina measured by optical reflectometry and quartz crystal microbalance with dissipation techniques. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2014, 443, 384-390.	2.3	11
101	Chemisorption of CO ₂ on diaminated silica as bicarbonates and different types of carbamate ammonium ion pairs. <i>Materials Advances</i> , 2021, 2, 448-454.	2.6	10
102	Temperature-induced formation of strong gels of acrylamide-based polyelectrolytes. <i>Journal of Colloid and Interface Science</i> , 2009, 337, 46-53.	5.0	9
103	Hydrophobic Porous Polyketimines for the Capture of CO ₂ . <i>ChemPlusChem</i> , 2016, 81, 58-63.	1.3	9
104	Fast Catalytic Esterification Using a Hydrophobized Zr-MOF with Acidic Ionic Liquid Linkers. <i>ChemistrySelect</i> , 2020, 5, 1153-1156.	0.7	9
105	Macroscopic rods from assembled colloidal particles of hydrothermally carbonized glucose and their use as templates for silicon carbide and tricopper silicide. <i>Journal of Colloid and Interface Science</i> , 2021, 602, 480-489.	5.0	9
106	Intraparticle Transport and Release of Dextran in Silica Spheres with Cylindrical Mesopores. <i>Langmuir</i> , 2010, 26, 466-470.	1.6	8
107	Wasser als Schlüssel zu amorphem Proto-Aragonit-CaCO ₃ . <i>Angewandte Chemie</i> , 2016, 128, 8249-8252.	1.6	8
108	Cyclopalladated Azo-linked Porous Polymers in C-C Bond Forming Reactions. <i>ChemistrySelect</i> , 2016, 1, 5801-5804.	0.7	8

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109	Lightweight foams of amine-rich organosilica and cellulose nanofibrils by foaming and controlled condensation of aminosilane. <i>Materials Chemistry Frontiers</i> , 2018, 2, 2220-2229.	3.2	8
110	Graphitic nitrogen in carbon catalysts is important for the reduction of nitrite as revealed by naturally abundant ^{15}N NMR spectroscopy. <i>Dalton Transactions</i> , 2021, 50, 6857-6866.	1.6	8
111	Enhanced Sunlight-Driven Reactive Species Generation via Polarization Field in Nanopiezoelectric Heterostructures. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 29691-29707.	4.0	8
112	Structural variations in mesoporous materials with cubic P6mm symmetry. <i>Microporous and Mesoporous Materials</i> , 2010, 133, 27-35.	2.2	7
113	CO ₂ selective NaMg-CTS-1 and its structural formation from the titanium silicate based molecule sieve NaMg-ETS-4. <i>Microporous and Mesoporous Materials</i> , 2014, 198, 63-73.	2.2	7
114	Upgrading of raw biogas into biomethane with structured nano-sized zeolite [NaK]-A adsorbents in a PVSA unit. <i>Energy Procedia</i> , 2019, 158, 6715-6722.	1.8	7
115	Activated Carbons from Hydrochars Prepared in Milk. <i>Scientific Reports</i> , 2019, 9, 16956.	1.6	7
116	Semiconducting Nanocrystalline Bismuth Oxide (BiOCl) for Photocatalytic Reduction of CO ₂ . <i>Catalysts</i> , 2020, 10, 998.	1.6	7
117	Pd-promoted heteropolyacid on mesoporous zirconia as a stable and bifunctional catalyst for oxidation of thiophenes. <i>Fuel</i> , 2022, 310, 122462.	3.4	7
118	Automated sample preparation station for studying self-diffusion in porous solids with NMR spectroscopy. <i>Review of Scientific Instruments</i> , 2006, 77, 035114.	0.6	6
119	Nanocrystalline TON-type zeolites synthesized under static conditions. <i>Microporous and Mesoporous Materials</i> , 2018, 256, 84-90.	2.2	6
120	Insights into Functionalization of Metal-Organic Frameworks Using In Situ NMR Spectroscopy. <i>Scientific Reports</i> , 2018, 8, 17530.	1.6	6
121	Core-Shell and Hollow Particles of Carbon and SiC Prepared from Hydrochar. <i>Materials</i> , 2019, 12, 1835.	1.3	6
122	Spectral deconvolution of NMR cross polarization data sets. <i>Solid State Nuclear Magnetic Resonance</i> , 2009, 35, 208-213.	1.5	5
123	Microporous pure-silica IZM-2. <i>Microporous and Mesoporous Materials</i> , 2017, 237, 222-227.	2.2	5
124	Indications that Amorphous Calcium Carbonates Occur in Pathological Mineralisation of a Urinary Stone from a Guinea Pig. <i>Minerals (Basel, Switzerland)</i> , 2018, 8, 84.	0.8	5
125	Electrochemical Carbon Dioxide Reduction on Femtosecond Laser-Processed Copper Electrodes: Effect on the Liquid Products by Structuring and Doping. <i>ACS Applied Energy Materials</i> , 2021, 4, 5927-5934.	2.5	5
126	Blue hydrochars formed on hydrothermal carbonization of glucose using an iron catalyst. <i>Carbon Trends</i> , 2022, 8, 100172.	1.4	5

