Thomas Autrey

List of Publications by Citations

114 papers	7,009 citations	41 h-index	82 g-index
125 ext. papers	7,523 ext. citations	8.7 avg, IF	5.73 L-index

#	Paper	IF	Citations
114	Nanoscaffold mediates hydrogen release and the reactivity of ammonia borane. *Angewandte Chemie - International Edition*, **2005**, 44, 3578-82	16.4	711
113	Immobilizing highly catalytically active Pt nanoparticles inside the pores of metal-organic framework: a double solvents approach. *Journal of the American Chemical Society*, **2012**, 134, 13926-9	16.4	692
112	High-capacity hydrogen storage in lithium and sodium amidoboranes. *Nature Materials*, **2008**, 7, 138-41	27	556
111	In situ solid state 11B MAS-NMR studies of the thermal decomposition of ammonia borane: mechanistic studies of the hydrogen release pathways from a solid state hydrogen storage material. *Physical Chemistry Chemical Physics*, **2007**, 9, 1831-6	3.6	337
110	Synthesis of ammonia borane for hydrogen storage applications. *Energy and Environmental Science*, **2008**, 1, 156	35.4	214
109	Boron–nitrogen–hydrogen (BNH) compounds: recent developments in hydrogen storage, applications in hydrogenation and catalysis, and new syntheses. *Energy and Environmental Science*, **2012**, 5, 9257	35.4	208
108	In situ XAFS and NMR study of rhodium-catalyzed dehydrogenation of dimethylamine borane. *Journal of the American Chemical Society*, **2005**, 127, 3254-5	16.4	201
107	The Effects of Chemical Additives on the Induction Phase in Solid-State Thermal Decomposition of Ammonia Borane. *Chemistry of Materials*, **2008**, 20, 5332-5336	9.6	183
106	In situ multinuclear NMR spectroscopic studies of the thermal decomposition of ammonia borane in solution. *Angewandte Chemie - International Edition*, **2008**, 47, 7493-6	16.4	160
105	Coherent carbon cryogel-ammonia borane nanocomposites for H2 storage. *Journal of Physical Chemistry B*, **2007**, 111, 7469-72	3.4	159
104	Iridium-catalyzed dehydrogenation of substituted amine boranes: kinetics, thermodynamics, and implications for hydrogen storage. *Inorganic Chemistry*, **2008**, 47, 8583-5	5.1	150
103	Reversible dehydrogenation of magnesium borohydride to magnesium triborane in the solid state under moderate conditions. *Chemical Communications*, **2011**, 47, 1330-2	5.8	136
102	When is a nanoparticle a cluster? An operando EXAFS study of amine borane dehydrocoupling by Rh(4-6) clusters. *Journal of the American Chemical Society*, **2007**, 129, 11936-49	16.4	134
101	Tandem Nitrogen Functionalization of Porous Carbon: Toward Immobilizing Highly Active Palladium Nanoclusters for Dehydrogenation of Formic Acid. *ACS Catalysis*, **2017**, 7, 2720-2724	13.1	121
100	Hydrogen release studies of alkali metal amidoboranes. *Inorganic Chemistry*, **2010**, 49, 3905-10	5.1	106
99	An assessment of strategies for the development of solid-state adsorbents for vehicular hydrogen storage. *Energy and Environmental Science*, **2018**, 11, 2784-2812	35.4	97
98	Nanoscaffold Mediates Hydrogen Release and the Reactivity of Ammonia Borane. *Angewandte Chemie*, **2005**, 117, 3644-3648	3.6	93

97	Matrix isolation, time-resolved IR, and computational study of the photochemistry of benzoyl azide. *Physical Chemistry Chemical Physics*, **2003**, 5, 1010-1018	3.6	89
96	Promotion of Hydrogen Release from Ammonia Borane with Mechanically Activated Hexagonal Boron Nitride. *Journal of Physical Chemistry C*, **2009**, 113, 1098-1103	3.8	87
95	Determination of structure and phase transition of light element nanocomposites in mesoporous silica: case study of NH3BH3 in MCM-41. *Journal of the American Chemical Society*, **2009**, 131, 13749-55	16.4	86
94	The thermal decomposition of ammonia borane: A potential hydrogen storage material. *Current Applied Physics*, **2008**, 8, 498-500	2.6	86
93	Spectroscopic studies of the phase transition in ammonia borane: Raman spectroscopy of single crystal NH3BH3 as a function of temperature from 88 to 330 K. *Journal of Chemical Physics*, **2008**, 128, 034508	3.9	80
92	Spectroscopic studies of dehydrogenation of ammonia borane in carbon cryogel. *Journal of Physical Chemistry B*, **2007**, 111, 14285-9	3.4	70
91	Hydrogen Storage in Formic Acid: A Comparison of Process Options. *Energy & Fuels*, **2017**, 31, 12603-12611	4.1	67
90	Interaction of lithium hydride and ammonia borane in THF. *Chemical Communications*, **2008**, 5595-7	5.8	67
89	Absence of the Structural Phase Transition in Ammonia Borane Dispersed in Mesoporous Silica: Evidence of Novel Thermodynamic Properties. *Journal of Physical Chemistry C*, **2009**, 113, 10319-10321	3.8	63
88	Defining active catalyst structure and reaction pathways from ab initio molecular dynamics and operando XAFS: dehydrogenation of dimethylaminoborane by rhodium clusters. *Journal of the American Chemical Society*, **2009**, 131, 10516-24	16.4	63
87	Synthesis, structure and dehydrogenation of magnesium amidoborane monoammoniate. *Chemical Communications*, **2010**, 46, 5752-4	5.8	59
86	Kinetic and thermodynamic investigation of hydrogen release from ethane 1,2-di-amineborane. *Energy and Environmental Science*, **2011**, 4, 4187	35.4	58
85	Bis-BN cyclohexane: a remarkably kinetically stable chemical hydrogen storage material. *Journal of the American Chemical Society*, **2015**, 137, 134-7	16.4	56
84	Solid-state hydrogen rich boron-nitrogen compounds for energy storage. *Chemical Society Reviews*, **2019**, 48, 5350-5380	58.5	55
83	Neutron powder diffraction and molecular simulation study of the structural evolution of ammonia borane from 15 to 340 K. *Journal of Physical Chemistry A*, **2009**, 113, 5723-35	2.8	53
82	Aroylnitrenes with singlet ground states: photochemistry of acetyl-substituted aroyl and aryloxycarbonyl azides. *Journal of the American Chemical Society*, **1988**, 110, 4297-4305	16.4	52
81	Thermal Stability of Ammonia Borane: A Case Study for Exothermic Hydrogen Storage Materials. *Energy & Fuels*, **2010**, 24, 2596-2606	4.1	50
80	Thermodynamic and Structural Investigations of Ammonium Borohydride, a Solid with a Highest Content of Thermodynamically and Kinetically Accessible Hydrogen. *Chemistry of Materials*, **2009**, 21, 4356-4358	9.6	48

79	Analysis of the activation and heterolytic dissociation of H2 by frustrated Lewis pairs: NH3/BX3 (X = H, F, and Cl). *Journal of Physical Chemistry A*, **2012**, 116, 7228-37	2.8	47
78	Characterization of a new phase of ammonia borane. *Energy and Environmental Science*, **2010**, 3, 796	35.4	47
77	Detection of trace levels of water in oil by photoacoustic spectroscopy. *Sensors and Actuators B: Chemical*, **2001**, 77, 620-624	8.5	46
76	Selective reversible hydrogenation of Mg(B3H8)2/MgH2 to Mg(BH4)2: pathway to reversible borane-based hydrogen storage?. *Inorganic Chemistry*, **2015**, 54, 4120-5	5.1	44
75	The diammoniate of diborane: crystal structure and hydrogen release. *Chemical Communications*, **2010**, 46, 8564-6	5.8	44
74	A solvent-switched in situ confinement approach for immobilizing highly-active ultrafine palladium nanoparticles: boosting catalytic hydrogen evolution. *Journal of Materials Chemistry A*, **2018**, 6, 5544-5549	13	42
73	Materials for hydrogen storage: structure and dynamics of borane ammonia complex. *Dalton Transactions*, **2008**, 4514-22	4.3	41
72	In Situ Multinuclear NMR Spectroscopic Studies of the Thermal Decomposition of Ammonia Borane in Solution. *Angewandte Chemie*, **2008**, 120, 7603-7606	3.6	41
71	Are aroylnitrenes ground-state singlets? Photochemistry of .beta.-naphthoyl azide. *Journal of the American Chemical Society*, **1987**, 109, 5814-5820	16.4	40
70	A thermodynamic and kinetic study of the heterolytic activation of hydrogen by frustrated borane-amine Lewis pairs. *Dalton Transactions*, **2013**, 42, 615-9	4.3	39
69	Growth of crystalline polyaminoborane through catalytic dehydrogenation of ammonia borane on FeB nanoalloy. *Chemistry - A European Journal*, **2010**, 16, 12814-7	4.8	39
68	Model compound studies of the beta-O-4 linkage in lignin: absolute rate expressions for beta-scission of phenoxyl radical from 1-phenyl-2-phenoxyethanol-1-yl radical. *Journal of Organic Chemistry*, **2002**, 67, 7937-45	4.2	37
67	Theoretical investigations on the formation and dehydrogenation reaction pathways of H(NH2BH2)(n)H (n = 1-4) oligomers: importance of dihydrogen interactions. *Inorganic Chemistry*, **2010**, 49, 7710-20	5.1	36
66	Decomposition Pathway of Ammonia Borane on the Surface of Nano-BN. *Journal of Physical Chemistry C*, **2010**, 114, 13935-13941	3.8	36
65	Hyperpolarized 129Xe NMR Investigation of Ammonia Borane in Mesoporous Silica. *Journal of Physical Chemistry C*, **2009**, 113, 6485-6490	3.8	36
64	Control of hydrogen release and uptake in amine borane molecular complexes: thermodynamics of ammonia borane, ammonium borohydride, and the diammoniate of diborane. *Faraday Discussions*, **2011**, 151, 157-69; discussion 199-212	3.6	34
63	Pressure-induced complexation of NH(3)BH(3)-H(2). *Journal of Chemical Physics*, **2009**, 131, 224515	3.9	34
62	Hydrogen Dynamics and Characterization of the Tetragonal-to-Orthorhombic Phase Transformation in Ammonia Borane. *Journal of Physical Chemistry C*, **2009**, 113, 5872-5878	3.8	34

61	Catalytic reduction of polar substrates without metals: A thermodynamic and kinetic study of heterolytic activation of hydrogen by vacancies in frustrated Lewis pairs. *Catalysis Today*, **2015**, 251, 28-33	5.3	33
60	Automated gas burette system for evolved hydrogen measurements. *Review of Scientific Instruments*, **2008**, 79, 084103	1.7	32
59	Challenges and opportunities for using formate to store, transport, and use hydrogen. *Journal of Energy Chemistry*, **2020**, 41, 216-224	12	32
58	Characterization and mechanistic studies of the dehydrogenation of NHxBHx materials. *Current Opinion in Solid State and Materials Science*, **2011**, 15, 73-79	12	31
57	Decomposition of NH3BH3 at sub-ambient pressures: A combined thermogravimetry–differential thermal analysis–mass spectrometry study. *Journal of Power Sources*, **2010**, 195, 1615-1618	8.9	29
56	Thermochemistry of aqueous hydroxyl radical from advances in photoacoustic calorimetry and ab initio continuum solvation theory. *Journal of the American Chemical Society*, **2004**, 126, 3680-1	16.4	29
55	Immobilization of highly active bimetallic PdAu nanoparticles onto nanocarbons for dehydrogenation of formic acid. *Journal of Materials Chemistry A*, **2019**, 7, 18835-18839	13	28
54	Comparison of Diffusion Coefficients of Aryl Carbonyls and Aryl Alcohols in Hydroxylic Solvents. Evidence that the Diffusion of Ketyl Radicals in Hydrogen-Bonding Solvents Is Not Anomalous?. *Journal of Physical Chemistry A*, **2001**, 105, 5948-5953	2.8	27
53	Quasielastic neutron scattering of NH3 and BH3 rotational dynamics in orthorhombic ammonia borane. *Chemical Physics Letters*, **2008**, 459, 85-88	2.5	26
52	A new angle into time-resolved photoacoustic spectroscopy: A layered prism cell increases experimental flexibility. *Review of Scientific Instruments*, **1998**, 69, 2246-2258	1.7	26
51	3-Methyl-1,2-BN-cyclopentane: a promising H2 storage material?. *Dalton Transactions*, **2013**, 42, 611-4	4.3	25
50	Experimental and computational studies on collective hydrogen dynamics in ammonia borane: incoherent inelastic neutron scattering. *Journal of Chemical Physics*, **2009**, 130, 024507	3.9	25
49	Complexation Chemistry in N,N-Dimethylformamide-Based Molecular Inks for Chalcogenide Semiconductors and Photovoltaic Devices. *Journal of the American Chemical Society*, **2019**, 141, 298-308	16.4	25
48	Dynamics of ammonia borane using neutron scattering. *Physica B: Condensed Matter*, **2006**, 385-386, 266-268	2.8	23
47	Solvent-Induced Scission of Diarylmethanes in Dihydroarene Donor Solvents: An Experimental and Mechanistic Modeling Study of Hydrogen-Transfer Pathways. *Energy & Fuels*, **1995**, 9, 420-428	4.1	21
46	Nanoconfinement of Molecular Magnesium Borohydride Captured in a Bipyridine-Functionalized Metal-Organic Framework. *ACS Nano*, **2020**, 14, 10294-10304	16.7	20
45	Role of Solvents on the Thermodynamics and Kinetics of Forming Frustrated Lewis Pairs. *Journal of Physical Chemistry Letters*, **2012**, 3, 3312-3319	6.4	19
44	Methods to stabilize and destabilize ammonium borohydride. *Dalton Transactions*, **2013**, 42, 680-7	4.3	18

43	Interaction of ammonia borane with Li2NH and Li3N. *Dalton Transactions*, **2010**, 39, 720-2	4.3	18
42	Solvent Cage Recombination of 4-Benzoylphenylthiyl Radicals: Fast Intersystem Crossing of Triplet Sulfur-Centered Radical Pairs. *The Journal of Physical Chemistry*, **1995**, 99, 869-871		18
41	Releasing Hydrogen at High Pressures from Liquid Carriers: Aspects for the H2 Delivery to Fueling Stations. *Energy & Fuels*, **2018**, 32, 10008-10015	4.1	17
40	High-pressure hydrogen interactions with polyaminoborane and polyiminoborane. *ChemPhysChem*, **2010**, 11, 93-6	3.2	17
39	Reversible Hydrogen Uptake/Release over a Sodium Phenoxide-Cyclohexanolate Pair. *Angewandte Chemie - International Edition*, **2019**, 58, 3102-3107	16.4	17
38	Bonding in boranes and their interaction with molecular hydrogen at extreme conditions. *Journal of Chemical Physics*, **2009**, 131, 144508	3.9	16
37	Calorimetric Study of the Activation of Hydrogen by Tris(pentafluorophenyl)borane and Trimesitylphosphine. *Journal of Physical Chemistry A*, **2017**, 121, 8785-8790	2.8	15
36	Development of an Autothermal Formate-Based Hydrogen Generator: From Optimization of Formate Dehydrogenation Conditions to Thermal Integration with Fuel Cells. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 9846-9856	8.3	14
35	Lewis Base Complexes of Magnesium Borohydride: Enhanced Kinetics and Product Selectivity upon Hydrogen Release. *Inorganics*, **2017**, 5, 89	2.9	14
34	Mechanistic investigations of iron/sulfur-catalyzed bond scission in aromatic hydrocarbons. A catalytic hydrogen atom transfer step involving a late transition state. *Catalysis Today*, **1996**, 31, 105-111	5.3	14
33	The photochemistry of 3-nitrobenzoyl and 4-nitrobenzoyl azides: possible reagents for photoaffinity labeling. *Photochemistry and Photobiology*, **1988**, 47, 497-501	3.6	14
32	Capacity enhancement of aqueous borohydride fuels for hydrogen storage in liquids. *Journal of Alloys and Compounds*, **2015**, 645, S196-S199	5.7	13
31	Listening to Colloidal Silica Samples: Simultaneous Measurement of Absorbed and Scattered Light Using Pulsed-Laser Photoacoustics. *Applied Spectroscopy*, **2000**, 54, 1142-1150	3.1	13
30	Measurement of select radical processes in hydrocarbon pyrolysis. *Journal of Analytical and Applied Pyrolysis*, **2000**, 54, 37-64	6	12
29	Understanding Vibrational Anharmonicity and Phonon Dispersion in Solid Ammonia Borane. *Journal of Physical Chemistry C*, **2012**, 116, 5926-5931	3.8	10
28	Mechanistic investigation on the formation and dehydrogenation of calcium amidoborane ammoniate. *ChemSusChem*, **2012**, 5, 927-31	8.3	10
27	Counting particles by means of optoacoustics: Potential limits in real solutions. *Review of Scientific Instruments*, **2003**, 74, 628-631	1.7	10
26	Experimental and theoretical study of molecular response of amine bases in organic solvents. *Journal of Physical Chemistry B*, **2014**, 118, 4883-8	3.4	9

25	Spectroscopic Studies of Tributylstannyl Radical. Rates of Formation, Termination, and Abstraction Determined by Transient Absorption Spectroscopy. *Organometallics*, **2004**, 23, 2080-2086	3.8	9
24	Absolute rate constants for reactions of tributylstannyl radicals with bromoalkanes, episulfides, and alpha-halomethyl-episulfides, -cyclopropanes, and -oxiranes: new rate expressions for sulfur and bromine atom abstraction. *Journal of Organic Chemistry*, **2004**, 69, 1020-7	4.2	9
23	Physi-Sorption of H2 on Pure and Boron□Doped Graphene Monolayers: A Dispersion□Corrected DFT Study. *Journal of Carbon Research*, **2020**, 6, 15	3.3	8
22	Kinetic and Thermodynamic Study of the Reduction of 1,1-Diphenylethylene by a Thermally Frustrated Diethyl Ether-BCF Lewis Pair. *Israel Journal of Chemistry*, **2015**, 55, 196-201	3.4	8
21	Nanojoules, nanoliters and nanosecond calorimetry. *Journal of Photochemistry and Photobiology A: Chemistry*, **1999**, 125, 13-19	4.7	8
20	First-Principles Prediction of Intermediate Products in the Decomposition of Metal Amidoboranes. *Journal of Physical Chemistry C*, **2012**, 116, 26728-26734	3.8	7
19	Thermal Conversion of Unsolvated Mg(B3H8)2 to BH4□In the Presence of MgH2. *ACS Applied Energy Materials*, **2021**, 4, 3737-3747	6.1	7
18	Blending materials composed of boron, nitrogen and carbon to transform approaches to liquid hydrogen stores. *Dalton Transactions*, **2016**, 45, 6196-203	4.3	6
17	Tunable ultraviolet visible photoacoustic detection. *Analytica Chimica Acta*, **2001**, 434, 217-222	6.6	6
16	□eS□Assisted Scission of Strong Bonds in Phenoxydiphenylmethanes. Competition between Hydrogen Atom Transfer and Free Radical Rearrangement Pathways. *Energy & Fuels*, **1999**, 13, 927-933	4.1	5
15	Heterolytic Scission of Hydrogen Within a Crystalline Frustrated Lewis Pair. *Inorganic Chemistry*, **2020**, 59, 15295-15301	5.1	5
14	Heterolysis of H2 Across a Classical Lewis Pair, 2,6-Lutidine?BCl3 : Synthesis, Characterization, and Mechanism. *Chemistry - A European Journal*, **2015**, 21, 15713-9	4.8	4
13	The tetragonal-to-orthorhombic phase transformation in ammonia borane and in its deuterium substituted compounds. *Journal of Alloys and Compounds*, **2011**, 509, S709-S713	5.7	4
12	An investigation of the structural phase transition of ammonia borane. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2009**, 521-522, 169-171	5.3	4
11	Mechanistic Studies of Hydrogen Release from Solid Amine Borane Materials. *Materials Research Society Symposia Proceedings*, **2006**, 927, 1		4
10	Structural and reorientational dynamics of tetrahydroborate (BH) and tetrahydrofuran (THF) in a Mg(BH)□THF adduct: neutron-scattering characterization. *Physical Chemistry Chemical Physics*, **2019**, 22, 368-378	3.6	3
9	Reversible Hydrogen Uptake/Release over a Sodium Phenoxide□Cyclohexanolate Pair. *Angewandte Chemie*, **2019**, 131, 3134-3139	3.6	2
8	Hydrogen isotope effects on the structural phase transition of NH3BH3. *International Journal of Hydrogen Energy*, **2011**, 36, 7927-7931	6.7	2

7	Effects of Glymes on the Distribution of Mg(B10H10) and Mg(B12H12) from the Thermolysis of Mg(BH4)2. *Inorganics*, **2021**, 9, 41	2.9	2
6	Mg(BH4)2-Based Hybrid Metal□Organic Borohydride System Exhibiting Enhanced Chemical Stability in Melt. *ACS Applied Energy Materials*, **2021**, 4, 1704-1713	6.1	2
5	Role of aromatic structure in pathways of hydrogen transfer and bond cleavage in coal liquefaction: Theoretical studies.. *Coal Science and Technology*, **1995**, 24, 1411-1414		1
4	Analysis of Intermediates and Products from the Dehydrogenation of Mg(BH).. *Journal of Physical Chemistry A*, **2022**,	2.8	1
3	A comparison of hydrogen release kinetics from 5- and 6-membered 1,2-BN-cycloalkanes.. *RSC Advances*, **2021**, 11, 34132-34136	3.7	1
2	First-Principles Elucidation of Initial Dehydrogenation Pathways in Mg(BH).. *Journal of Physical Chemistry Letters*, **2022**, 1908-1913	6.4	0
1	High-capacity hydrogen storage in lithium and sodium amidoboranes **2010**, 276-279		