

# Hiroki Miyaoka

## List of Publications by Year in descending order

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123  
papers

2,341  
citations

185998

28  
h-index

264894

42  
g-index

126  
all docs

126  
docs citations

126  
times ranked

1899  
citing authors

#	ARTICLE	IF	CITATIONS
1	Hydrogen absorption of catalyzed magnesium below room temperature. International Journal of Hydrogen Energy, 2013, 38, 13728-13733.	3.8	112
2	Ammonia, a Switch for Controlling High Ionic Conductivity in Lithium Borohydride Ammoniates. Joule, 2018, 2, 1522-1533.	11.7	87
3	Review on Ammonia Absorption Materials: Metal Hydrides, Halides, and Borohydrides. ACS Applied Energy Materials, 2018, 1, 232-242.	2.5	80
4	Highly purified hydrogen production from ammonia for PEM fuel cell. International Journal of Hydrogen Energy, 2018, 43, 14486-14492.	3.8	76
5	Structure and catalytic properties of Ni/MWCNTs and Ni/AC catalysts for hydrogen production via ammonia decomposition. International Journal of Hydrogen Energy, 2014, 39, 277-287.	3.8	66
6	How does $\text{TiF}_4$ affect the decomposition of $\text{MgH}_2$ and its complex variants? An XPS investigation. Journal of Materials Chemistry A, 2017, 5, 15543-15551.	5.2	65
7	Metal hydride-based materials towards high performance negative electrodes for all-solid-state lithium-ion batteries. Chemical Communications, 2015, 51, 9773-9776.	2.2	64
8	Surface modification of $\text{MgH}_2$ by $\text{ZrCl}_4$ to tailor the reversible hydrogen storage performance. International Journal of Hydrogen Energy, 2017, 42, 6152-6159.	3.8	61
9	Recyclable hydrogen storage system composed of ammonia and alkali metal hydride. International Journal of Hydrogen Energy, 2009, 34, 9760-9764.	3.8	59
10	Comparative Study of Structural Changes in $\text{NH}_3\text{BH}_3$ , $\text{LiNH}_2\text{BH}_3$ , and $\text{KNH}_2\text{BH}_3$ During Dehydrogenation Process. Journal of Physical Chemistry C, 2012, 116, 5957-5964.	1.5	57
11	Enhancement of hydrogen desorption kinetics in magnesium hydride by doping with lithium metatitanate. Journal of Alloys and Compounds, 2017, 711, 400-405.	2.8	57
12	Superior Hydrogen Exchange Effect in the $\text{MgH}_2\text{-LiBH}_4$ System. Journal of Physical Chemistry C, 2010, 114, 13132-13135.	1.5	48
13	Solid state NMR study on the thermal decomposition pathway of sodium amidoborane $\text{NaNH}_2\text{BH}_3$ . Journal of Materials Chemistry, 2011, 21, 2609.	6.7	48
14	Catalysis of nickel nanoparticles with high thermal stability for ammonia decomposition. Applied Catalysis A: General, 2015, 491, 184-188.	2.2	48
15	Anode properties of magnesium hydride catalyzed with niobium oxide for an all solid-state lithium-ion battery. Chemical Communications, 2013, 49, 7174.	2.2	47
16	High compressed hydrogen production via direct electrolysis of liquid ammonia. International Journal of Hydrogen Energy, 2016, 41, 14529-14534.	3.8	46
17	Thermal decomposition of alkaline-earth metal hydride and ammonia borane composites. International Journal of Hydrogen Energy, 2010, 35, 12405-12409.	3.8	45
18	Bulk-Type All-Solid-State Lithium-Ion Batteries: Remarkable Performances of a Carbon Nanofiber-Supported $\text{MgH}_2$ Composite Electrode. ACS Applied Materials & Interfaces, 2017, 9, 2261-2266.	4.0	45

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19	Electron Spin Resonance Investigation of Hydrogen Absorption in Ball-Milled Graphite. <i>Journal of Physical Chemistry C</i> , 2009, 113, 5409-5416.	1.5	41
20	Molecular hydrogen carrier with activated nanohydride and ammonia. <i>Journal of Materials Research</i> , 2009, 24, 2185-2190.	1.2	41
21	Study of cyclic performance of V-Ti-Cr alloys employed for hydrogen compressor. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 2881-2889.	3.8	40
22	Study on the thermal decomposition of NaBH <sub>4</sub> catalyzed by ZrCl <sub>4</sub> . <i>International Journal of Hydrogen Energy</i> , 2017, 42, 22432-22437.	3.8	37
23	Hybrid nickel-metal hydride/hydrogen battery. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 4263-4270.	3.8	36
24	Destabilization of lithium hydride by the substitution of group 14 elements: A review. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 5969-5978.	3.8	34
25	Thermodynamics on Ammonia Absorption of Metal Halides and Borohydrides. <i>Journal of Physical Chemistry C</i> , 2014, 118, 18412-18416.	1.5	32
26	Activation on Ammonia Absorbing Reaction for Magnesium Chloride. <i>Journal of Physical Chemistry C</i> , 2015, 119, 26296-26302.	1.5	32
27	Electrochemical Performance of Titanium Hydride for Bulk-Type All-Solid-State Lithium-Ion Batteries. <i>Materials Transactions</i> , 2016, 57, 755-757.	0.4	31
28	Improvement of hydrogen desorption kinetics in the LiH-NH <sub>3</sub> system by addition of KH. <i>Chemical Communications</i> , 2011, 47, 12227.	2.2	30
29	A new synthesis route of ammonia production through hydrolysis of metal Nitrides. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 24897-24903.	3.8	30
30	Hydrogen storage properties of lithium silicon alloy synthesized by mechanical alloying. <i>Journal of Power Sources</i> , 2011, 196, 504-507.	4.0	29
31	Destabilization of LiH by Li Insertion into Ge. <i>Journal of Physical Chemistry C</i> , 2013, 117, 5650-5657.	1.5	28
32	Low-temperature water-splitting by sodium redox reaction. <i>International Journal of Hydrogen Energy</i> , 2012, 37, 17709-17714.	3.8	27
33	Synthesis and characterization of lithium-carbon compounds for hydrogen storage. <i>Journal of Alloys and Compounds</i> , 2011, 509, 719-723.	2.8	26
34	The reaction process of hydrogen absorption and desorption on the nanocomposite of hydrogenated graphite and lithium hydride. <i>Nanotechnology</i> , 2009, 20, 204021.	1.3	24
35	Improved hydrogen release from magnesium borohydride by ZrCl <sub>4</sub> additive. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 22342-22347.	3.8	24
36	MgH <sub>2</sub> -CoO: a conversion-type composite electrode for LiBH <sub>4</sub> -based all-solid-state lithium ion batteries. <i>RSC Advances</i> , 2018, 8, 23468-23474.	1.7	24

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37	Micro-alloyed Mg <sub>2</sub> Ni for better performance as negative electrode of Ni-MH battery and hydrogen storage. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 5220-5226.	3.8	23
38	Doping effect of Nb species on hydrogen desorption properties of AlH <sub>3</sub> . <i>Journal of Alloys and Compounds</i> , 2018, 734, 55-59.	2.8	23
39	Synthesis and characterization of magnesium-carbon compounds for hydrogen storage. <i>Carbon</i> , 2013, 56, 50-55.	5.4	20
40	Development of Mg Li B based advanced material for onboard hydrogen storage solution. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 3963-3970.	3.8	20
41	Thermodynamic and structural properties of ball-milled mixtures composed of nano-structural graphite and alkali(-earth) metal hydride. <i>Journal of Alloys and Compounds</i> , 2007, 432, 303-307.	2.8	19
42	Anode properties of Al <sub>2</sub> O <sub>3</sub> -added MgH <sub>2</sub> for all-solid-state lithium-ion batteries. <i>Journal of Solid State Electrochemistry</i> , 2015, 19, 3639-3644.	1.2	19
43	Catalytic hydrolysis of sodium borohydride on Co catalysts. <i>International Journal of Energy Research</i> , 2016, 40, 2078-2090.	2.2	19
44	Characterization of hydrogen absorption/desorption states on lithium-carbon-hydrogen system by neutron diffraction. <i>Journal of Applied Physics</i> , 2008, 104, 053511.	1.1	18
45	Nitrogen Dissociation via Reaction with Lithium Alloys. <i>ACS Omega</i> , 2017, 2, 1081-1088.	1.6	18
46	Hydrogen desorption properties of Li-B-N-H system synthesized by mechanical milling. <i>International Journal of Hydrogen Energy</i> , 2008, 33, 3128-3131.	3.8	17
47	Improvement of reaction kinetics by metal chloride on ammonia and lithium hydride system. <i>International Journal of Hydrogen Energy</i> , 2012, 37, 16025-16030.	3.8	17
48	Anomalous hydrogen absorption on non-stoichiometric iron-carbon compound. <i>Journal of Alloys and Compounds</i> , 2010, 507, 547-550.	2.8	16
49	Ammonia Synthesis via Non-Equilibrium Reaction of Lithium Nitride in Hydrogen Flow Condition. <i>Materials Transactions</i> , 2015, 56, 410-414.	0.4	16
50	Catalytic effect of bis (cyclopentadienyl) nickel II on the improvement of the hydrogenation-dehydrogenation of Mg-MgH <sub>2</sub> system. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 17178-17183.	3.8	16
51	Synthesis of nickel nanoparticles with excellent thermal stability in micropores of zeolite. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 13579-13586.	3.8	15
52	Correlation between electrochemical behavior and hydrogen storage properties of Li-Sn system. <i>Journal of Alloys and Compounds</i> , 2013, 580, S211-S215.	2.8	15
53	Catalytic modification in dehydrogenation properties of KSiH <sub>3</sub> . <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 26163-26167.	1.3	15
54	Two-Peak Mystery of LiNH <sub>2</sub> -NaH Dehydrogenation Is Solved? A Study of the Analogous Sodium Amide/Lithium Hydride System. <i>Journal of Physical Chemistry C</i> , 2016, 120, 27903-27909.	1.5	15

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55	Synthesis, Characterization, and Structure of a Reduced Preyssler-type Polyoxometalate. <i>Chemistry Letters</i> , 2017, 46, 602-604.	0.7	14
56	Proton-based solid acids for ammonia absorption in ammonia water. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 22189-22194.	3.8	13
57	Pseudo catalytic ammonia synthesis by lithium-tin alloy. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 6806-6812.	3.8	13
58	Hydrogen storage properties of nano-structural carbon and metal hydrides composites. <i>Physica B: Condensed Matter</i> , 2006, 383, 51-52.	1.3	12
59	Compressed hydrogen production via reaction between liquid ammonia and alkali metal hydride. <i>International Journal of Hydrogen Energy</i> , 2011, 36, 8217-8220.	3.8	12
60	Thermal decomposition of sodium amide. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 5213-5219.	3.8	12
61	Structural and Electronic Interplay in the Gap Formation in $\text{CeRhAs}_{1-x}\text{Sb}_x$ ( $0 \leq x \leq 1$ ). <i>Journal of the Physical Society of Japan</i> , 2004, 73, 262-268.	0.7	10
62	Catalysis of Lithium Chloride and Alkali Metal Borohydrides on Hydrogen Generation of Ammonia and Lithium Hydride System. <i>Journal of Physical Chemistry C</i> , 2015, 119, 19922-19927.	1.5	10
63	Evaluation of the enthalpy change due to hydrogen desorption for $\text{M-N-H}$ ( $\text{M} = \text{Li, Mg, Ca}$ ) systems by differential scanning calorimetry. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 1516-1522.	3.8	10
64	Effective Factor on Catalysis of Niobium Oxide for Magnesium. <i>ACS Omega</i> , 2020, 5, 21906-21912.	1.6	10
65	Thermodynamic and Spectroscopic Analyses of Zirconium Phosphate-Absorbed Ammonia. <i>Journal of Physical Chemistry C</i> , 2021, 125, 3758-3763.	1.5	10
66	Tailoring the absorption-desorption properties of $\text{KSiH}_3$ compound using nano-metals (Ni, Co, Nb) as catalyst. <i>Journal of Alloys and Compounds</i> , 2015, 645, S144-S147.	2.8	9
67	Improvement of Kinetics of Ammonia Synthesis at Ambient Pressure by the Chemical Looping Process of Lithium Hydride. <i>Journal of Physical Chemistry C</i> , 2022, 126, 2403-2409.	1.5	9
68	Synthesis, structural characterization, and hydrogen desorption properties of $\text{Na}[\text{Al}(\text{NH}_2)_4]$ . <i>International Journal of Hydrogen Energy</i> , 2017, 42, 6173-6180.	3.8	8
69	Vanadium Hydride as Conversion Type Negative Electrode for All-Solid-State Lithium-Ion-Battery. <i>Materials Transactions</i> , 2019, 60, 2183-2187.	0.4	8
70	Hydrogen Sorption and Cyclic Compressor Performance of $\text{V}_{40}\text{Ti}_{21.5}\text{Cr}_{33.5}\text{M}_{5}\text{O}_{0.2}$ ( $\text{M} = \text{Nb, Zr, Fe}$ ) Alloys. <i>Nihon Enerugi Gakkaishi/Journal of the Japan Institute of Energy</i> , 2019, 98, 157-164.		8
71	Concentration-composition-isotherm for the ammonia absorption process of zirconium phosphate. <i>RSC Advances</i> , 2020, 10, 20882-20885.	1.7	8
72	Systematic Study on Nitrogen Dissociation and Ammonia Synthesis by Lithium and Group 14 Element Alloys. <i>ACS Applied Energy Materials</i> , 2022, 5, 4765-4773.	2.5	8

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73	Thermodynamic Characterization on Hydrogen Absorption and Desorption Reactions of Lithium " Silicon Alloy. Materials Science Forum, 0, 654-656, 2815-2818.	0.3	7
74	Hydrogen Desorption Reaction between Hydrogen-Containing Functional Groups and Lithium Hydride. Journal of Physical Chemistry C, 2010, 114, 8668-8674.	1.5	7
75	Ammonia suppression during decomposition of sodium amide by the addition of metal hydride. International Journal of Hydrogen Energy, 2017, 42, 22388-22394.	3.8	7
76	Room-Temperature Hydrogen Absorption of Titanium with Surface Modification by Organic Solvents. Journal of Physical Chemistry C, 2019, 123, 19269-19274.	1.5	7
77	Critical Temperature and Pressure Conditions of Degradation during Thermochemical Hydrogen Compression: A Case Study of V-Based Hydrogen Storage Alloy. Energies, 2020, 13, 2324.	1.6	7
78	Catalytic Activities of Various Niobium Oxides for Hydrogen Absorption/Desorption Reactions of Magnesium. ACS Omega, 2021, 6, 23564-23569.	1.6	7
79	Lithium hydrazide as a potential compound for hydrogen storage. International Journal of Hydrogen Energy, 2012, 37, 5750-5753.	3.8	6
80	Thermochemical Energy Storage by Water-splitting Via Redox Reaction of Alkali Metals. Energy Procedia, 2014, 49, 927-934.	1.8	6
81	Kinetic Modification on Hydrogen Desorption of Lithium Hydride and Magnesium Amide System. Materials, 2015, 8, 3896-3909.	1.3	6
82	Synthesis of sodium-magnesium amidoborane by sodium amide: An investigation of functional properties for hydrogen/ammonia storage. Journal of Alloys and Compounds, 2019, 801, 645-650.	2.8	6
83	Temperature rise of LaNi <sub>5</sub> -based alloys by hydrogen adsorption. Chemical Communications, 2021, 57, 9374-9377.	2.2	6
84	Hydrogen Storage Materials. , 2013, , 99-136.		5
85	Hydrogen production via thermochemical water-splitting by lithium redox reaction. Journal of Alloys and Compounds, 2013, 580, S410-S413.	2.8	5
86	Hydrogen Desorption Isobar Properties of Ti <sub>1.1</sub> CrMn at High Temperatures and Pressures. Materials Transactions, 2018, 59, 855-857.	0.4	5
87	Eutectic Phenomenon of LiNH <sub>2</sub> -KH Composite in MH-NH <sub>3</sub> Hydrogen Storage System. Molecules, 2019, 24, 1348.	1.7	5
88	Eutectic melting in x(2LiBH <sub>4</sub> -MgH <sub>2</sub> ) hydrogen storage system by the addition of KH. International Journal of Hydrogen Energy, 2020, 45, 17000-17005.	3.8	5
89	Hydrogen storage behavior of TiFe alloy activated by different methods. Materials Letters: X, 2021, 9, 100061.	0.3	5
90	Effects of Metal Oxide Additives on Anode Properties of Magnesium Hydride for All-Solid-State Lithium Ion Batteries. Nihon Enerugi Gakkaishi/Journal of the Japan Institute of Energy, 2014, 93, 926-930.	0.2	5

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91	<i>Operando</i> spectroscopic analyses for the ammonia absorption process of sodium borohydride. <i>Chemical Communications</i> , 2019, 55, 2150-2153.	2.2	4
92	The catalytic effect of ZrCl <sub>4</sub> on thermal dehydrogenation LiAlD <sub>4</sub> . <i>International Journal of Hydrogen Energy</i> , 2020, 45, 14413-14417.	3.8	4
93	Microscopic characterization of metal-carbon-hydrogen composites (metal-Li, Mg). <i>Journal of Applied Physics</i> , 2013, 114, 093509.	1.1	3
94	<i>In-Situ</i> XAS for Niobium Oxide Catalyst on Hydrogen Absorption and Desorption of Magnesium. <i>Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals</i> , 2015, 79, 107-111.	0.2	3
95	Hydrogen Ab/Desorption of LiH-KH Composite and Ammonia System. <i>Materials Transactions</i> , 2016, 57, 1215-1219.	0.4	3
96	Surface-Controlled Conversion of Ammonia Borane from Boron Nitride. <i>Energies</i> , 2020, 13, 5569.	1.6	3
97	Surface modification effects of graphite for selective hydrogen absorption by titanium at room temperature. <i>Chemical Communications</i> , 2020, 56, 7237-7240.	2.2	3
98	Development of Ca-Mg-H <sub>2</sub> -ZrCl <sub>4</sub> composite for hydrogen storage applications. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 34362-34368.	3.8	3
99	Analysis of sodium generation by sodium oxide decomposition on corrosion resistance materials: a new approach towards sodium redox water-splitting cycle. <i>RSC Advances</i> , 2021, 11, 21017-21022.	1.7	3
100	Improvement of Hydrogenation and Dehydrogenation Kinetics on MgH <sub>2</sub> by the Catalytic Effect of ZrO <sub>2</sub> . <i>Applied Mechanics and Materials</i> , 0, 117-119, 1195-1198.	0.2	2
101	Improved hydrogen desorption from lithium hydrazide by alkali metal hydride. <i>Journal of Alloys and Compounds</i> , 2013, 580, S320-S323.	2.8	2
102	Correlation between particle size and hydrogen generation properties on ammonia and lithium hydride system. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 14911-14915.	3.8	2
103	Thermochemical Water Splitting by Concentrated Solar Power. <i>Lecture Notes in Energy</i> , 2016, , 137-151.	0.2	2
104	Synthesis of Highly Activated Magnesium by Niobium and Tantalum Gel Oxide Catalyst. <i>Materials Transactions</i> , 2021, 62, 284-289.	0.4	2
105	Electron tunneling experiments on La-substituted Kondo-semiconductor CeRhAs. <i>Physica B: Condensed Matter</i> , 2006, 383, 26-27.	1.3	1
106	Hydrogen Exchange Effect in MgH <sub>2</sub> -LiBH <sub>4</sub> System. <i>Materials Science Forum</i> , 2010, 654-656, 2855-2858.	0.3	1
107	Catalytic Effect of Niobium Oxide on Hydrogen Absorption and Desorption Process for Magnesium. <i>Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals</i> , 2013, 77, 636-640.	0.2	1
108	Synthesis of Calcium Borohydride by Milling Hydrogenation of Hydride and Boride. <i>Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals</i> , 2013, 77, 609-614.	0.2	1

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109	Thermochemical Water-splitting Reaction by Alkali Metal-Cobalt Oxide. Nihon Enerugi Gakkaishi/Journal of the Japan Institute of Energy, 2013, 92, 909-912.	0.2	1
110	Understanding the mechanism of photochromism in double-layer metal oxide using X-ray photoelectron spectroscopy. Chemical Physics Letters, 2020, 739, 136973.	1.2	1
111	Synergetic NH <sub>3</sub> absorption properties of the NaBH <sub>4</sub> –LiBH <sub>4</sub> mixed system. Chemical Communications, 2021, 57, 6003-6006.	2.2	1
112	Room-Temperature Hydrogen Absorption of Ti with Robust Surface Coated by Hexagonal Boron Nitride. ACS Applied Energy Materials, 2022, 5, 951-957.	2.5	1
113	Tunneling measurements of CeRhAs single crystal. Physica B: Condensed Matter, 2006, 378-380, 786-787.	1.3	0
114	Hydrogen storage properties in a composite of lithium hydride and boron nitride with hydrocarbon groups. Journal of Alloys and Compounds, 2007, 446-447, 39-43.	2.8	0
115	In-situ TEM Observation for Reaction of LiH with NH <sub>3</sub> by Means of Environmental Cell. Materials Research Society Symposia Proceedings, 2009, 1216, 1.	0.1	0
116	Hydrogen Storage Properties of Hydrogenated Graphite and Lithium Hydride Nanocomposite. , 0, , .		0
117	Microstructure and hydrogen desorption characteristics of hydrogenated Sch <sub>2</sub> MBn (M=Al and Ca) systems synthesized by mechanical milling. International Journal of Hydrogen Energy, 2013, 38, 6744-6749.	3.8	0
118	Chemical Hydrogen Storage of Carbon Material. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2013, 77, 552-558.	0.2	0
119	Ammonia Synthesis via Non-Equilibrium Reaction of Lithium Nitride in Hydrogen Flow Condition. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2013, 77, 580-584.	0.2	0
120	Hydrogen Production via Thermochemical Water Splitting Process by Alkali Metal Redox Cycle. Nihon Enerugi Gakkaishi/Journal of the Japan Institute of Energy, 2021, 100, 29-44.	0.2	0
121	Hydrogen and Materials Characteristic in Solids III. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2016, 80, 719-719.	0.2	0
122	Corrosion performance of carbide/nitride/oxide (C/N/O)-based reactor during thermochemical hydrogen production by Na redox reaction. Journal of Alloys and Compounds, 2022, , 165732.	2.8	0
123	Regeneration Process of Ammonia-Absorbed Zirconium Phosphate to Zirconium Phosphate. ACS Omega, 2022, 7, 20881-20885.	1.6	0