Kee Sung Han

List of Publications by Year
in descending order

101 papers	8,986 citations	76196 40 h-index	40881 93 g-index
104 all docs	104 docs citations	104 times ranked	9519 citing authors

#	Article	IF	Citations
1	Solvation Structure and Dynamics of Mg(TFSI)₂ Aqueous Electrolyte. Energy and Environmental Materials, 2022, 5, 295-304.	7.3	19
2	Concentration-dependent ion correlations impact the electrochemical behavior of calcium battery electrolytes. Physical Chemistry Chemical Physics, 2022, 24, 674-686.	1.3	13
3	An automated framework for high-throughput predictions of NMR chemical shifts within liquid solutions. Nature Computational Science, 2022, 2, 112-122.	3.8	4
4	Understanding the Solvation-Dependent Properties of Cyclic Ether Multivalent Electrolytes Using High-Field NMR and Quantum Chemistry. Jacs Au, 2022, 2, 917-932.	3.6	5
5	Sulfone-based electrolytes for high energy density lithium-ion batteries. Journal of Power Sources, 2022, 527, 231171.	4.0	21
6	Deep eutectic solvent-based polymer electrolyte for solid-state lithium metal batteries. Journal of Energy Chemistry, 2022, 70, 363-372.	7.1	32
7	Microsized Pore Structure Determination in EPDM Rubbers Using High-Pressure ¹²⁹Xe NMR Techniques. Journal of Physical Chemistry B, 2022, , .	1.2	6
8	Interfacial Engineering with a Nanoparticle-Decorated Porous Carbon Structure on Î²â€³-Alumina Solid-State Electrolytes for Molten Sodium Batteries. ACS Applied Materials & Interfaces, 2022, 14, 25534-25544.	4.0	8
9	Halide sublattice dynamics drive Li-ion transport in antiperovskites. Journal of Materials Chemistry A, 2022, 10, 15731-15742.	5.2	3
10	Rational Design of Electrolytes for Long-Term Cycling of Si Anodes over a Wide Temperature Range. ACS Energy Letters, 2021, 6, 387-394.	8.8	58
11	Factors Influencing Preferential Anion Interactions during Solvation of Multivalent Cations in Ethereal Solvents. Journal of Physical Chemistry C, 2021, 125, 6005-6012.	1.5	17
12	Quantifying Species Populations in Multivalent Borohydride Electrolytes. Journal of Physical Chemistry B, 2021, 125, 3644-3652.	1.2	17
13	Advanced Lowâ€Flammable Electrolytes for Stable Operation of Highâ€Voltage Lithiumâ€Ion Batteries. Angewandte Chemie, 2021, 133, 13109-13116.	1.6	16
14	Advanced Lowâ€Flammable Electrolytes for Stable Operation of Highâ€Voltage Lithiumâ€Ion Batteries. Angewandte Chemie - International Edition, 2021, 60, 12999-13006.	7.2	70
15	Diversity-oriented synthesis of polymer membranes with ion solvation cages. Nature, 2021, 592, 225-231.	13.7	83
16	Concentration-Dependent Solvation Structure and Dynamics of Aqueous Sulfuric Acid Using Multinuclear NMR and DFT. Journal of Physical Chemistry B, 2021, 125, 5089-5099.	1.2	5
17	Role of a Multivalent Ionâ€“Solvent Interaction on Restricted Mg²⁺ Diffusion in Dimethoxyethane Electrolytes. Journal of Physical Chemistry B, 2021, 125, 12574-12583.	1.2	7
18	Pulsed Field Gradient Nuclear Magnetic Resonance and Diffusion Analysis in Battery Research. Chemistry of Materials, 2021, 33, 8562-8590.	3.2	20

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19	Reversible Electrochemical Interface of Mg Metal and Conventional Electrolyte Enabled by Intermediate Adsorption. ACS Energy Letters, 2020, 5, 200-206.	8.8	44
20	Enabling Natural Graphite in Highâ€Voltage Aqueous Graphite || Zn Metal Dualâ€Ion Batteries. Advanced Energy Materials, 2020, 10, 2001256.	10.2	43
21	Controlling Ion Coordination Structure and Diffusion Kinetics for Optimized Electrode-Electrolyte Interphases and High-Performance Si Anodes. Chemistry of Materials, 2020, 32, 8956-8964.	3.2	24
22	Role of Solvent Rearrangement on Mg²⁺ Solvation Structures in Dimethoxyethane Solutions using Multimodal NMR Analysis. Journal of Physical Chemistry Letters, 2020, 11, 6443-6449.	2.1	27
23	Enabling Ether-Based Electrolytes for Long Cycle Life of Lithium-Ion Batteries at High Charge Voltage. ACS Applied Materials & Interfaces, 2020, 12, 54893-54903.	4.0	35
24	Aqueous Dualâ€Ion Batteries: Enabling Natural Graphite in Highâ€Voltage Aqueous Graphite || Zn Metal Dualâ€Ion Batteries (Adv. Energy Mater. 41/2020). Advanced Energy Materials, 2020, 10, 2070169.	10.2	1
25	Impact of ionic liquid on lithium ion battery with a solid poly(ionic liquid) pentablock terpolymer as electrolyte and separator. Polymer, 2020, 209, 122975.	1.8	11
26	Subtle changes in hydrogen bond orientation result in glassification of carbon capture solvents. Physical Chemistry Chemical Physics, 2020, 22, 19009-19021.	1.3	3
27	Origin of Unusual Acidity and Li⁺ Diffusivity in a Series of Water-in-Salt Electrolytes. Journal of Physical Chemistry B, 2020, 124, 5284-5291.	1.2	26
28	Cotton Fiber-Based Sorbents for Treating Crude Oil Spills. ACS Omega, 2020, 5, 13894-13901.	1.6	25
29	A lithium-sulfur battery with a solution-mediated pathway operating under lean electrolyte conditions. Nano Energy, 2020, 76, 105041.	8.2	25
30	Probing Conformational Evolution and Associated Dynamics of Mg(N(SO₂CF₃)₂)₂Â·Dimethoxyethane Adduct Using Solid-State ¹⁹F and ¹H NMR. Journal of Physical Chemistry C, 2020, 124, 4999-5008.	1.5	13
31	Metalâ€“Organic Framework-Based Microfluidic Impedance Sensor Platform for Ultrasensitive Detection of Perfluorooctanesulfonate. ACS Applied Materials & Interfaces, 2020, 12, 10503-10514.	4.0	77
32	Evolution of Ionâ€“Ion Interactions and Structures in Smectic Ionic Liquid Crystals. Journal of Physical Chemistry C, 2019, 123, 20547-20557.	1.5	8
33	Adsorption and Thermal Decomposition of Electrolytes on Nanometer Magnesium Oxide: An in Situ 13C MAS NMR Study. ACS Applied Materials & Interfaces, 2019, 11, 38689-38696.	4.0	19
34	Tailored crosslinking of Poly(ethylene oxide) enables mechanical robustness and improved sodium-ion conductivity. Energy Storage Materials, 2019, 21, 85-96.	9.5	43
35	Joint Charge Storage for Highâ€Rate Aqueous Zincâ€“Manganese Dioxide Batteries. Advanced Materials, 2019, 31, e1900567.	11.1	299
36	Probing the Sorption of Perfluorooctanesulfonate Using Mesoporous Metalâ€“Organic Frameworks from Aqueous Solutions. Inorganic Chemistry, 2019, 58, 8339-8346.	1.9	51

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37	Lithium Insertion Mechanism in Iron Fluoride Nanoparticles Prepared by Catalytic Decomposition of Fluoropolymer. ACS Applied Energy Materials, 2019, 2, 1832-1843.	2.5	21
38	Structure and Dynamics of Polysulfide Clusters in a Nonaqueous Solvent Mixture of 1,3-Dioxolane and 1,2-Dimethoxyethane. Chemistry of Materials, 2019, 31, 2308-2319.	3.2	54
39	Enhanced Capacities of Mixed Fatty Acid-Modified Sawdust Aggregators for Remediation of Crude Oil Spill. ACS Omega, 2019, 4, 412-420.	1.6	5
40	Addressing Passivation in Lithiumâ€“Sulfur Battery Under Lean Electrolyte Condition. Advanced Functional Materials, 2018, 28, 1707234.	7.8	143
41	Mechanism of Formation of Li₇P₃S₁₁ Solid Electrolytes through Liquid Phase Synthesis. Chemistry of Materials, 2018, 30, 990-997.	3.2	118
42	Highâ€Voltage Lithiumâ€Metal Batteries Enabled by Localized Highâ€Concentration Electrolytes. Advanced Materials, 2018, 30, e1706102.	11.1	761
43	²⁷Al Pulsed Field Gradient, Diffusionâ€“NMR Spectroscopy of Solvation Dynamics and Ion Pairing in Alkaline Aluminate Solutions. Journal of Physical Chemistry B, 2018, 122, 10907-10912.	1.2	15
44	Detrimental Effects of Chemical Crossover from the Lithium Anode to Cathode in Rechargeable Lithium Metal Batteries. ACS Energy Letters, 2018, 3, 2921-2930.	8.8	89
45	Lean Electrolyte Batteries: Addressing Passivation in Lithiumâ€“Sulfur Battery Under Lean Electrolyte Condition (Adv. Funct. Mater. 38/2018). Advanced Functional Materials, 2018, 28, 1870275.	7.8	5
46	Electrode Edge Effects and the Failure Mechanism of Lithiumâ€Metal Batteries. ChemSusChem, 2018, 11, 3821-3828.	3.6	35
47	Lithiumâ€Pretreated Hard Carbon as Highâ€Performance Sodiumâ€Ion Battery Anodes. Advanced Energy Materials, 2018, 8, 1801441.	10.2	105
48	Non-flammable electrolytes with high salt-to-solvent ratios for Li-ion and Li-metal batteries. Nature Energy, 2018, 3, 674-681.	19.8	557
49	Tailored Reaction Route by Micropore Confinement for Liâ€“S Batteries Operating under Lean Electrolyte Conditions. Advanced Energy Materials, 2018, 8, 1800590.	10.2	55
50	Controlled Synthesis of Sulfur-Rich Polymeric Selenium Sulfides as Promising Electrode Materials for Long-Life, High-Rate Lithium Metal Batteries. ACS Applied Materials & Interfaces, 2018, 10, 29565-29573.	4.0	51
51	Manipulating Adsorptionâ€“Insertion Mechanisms in Nanostructured Carbon Materials for Highâ€Efficiency Sodium Ion Storage. Advanced Energy Materials, 2017, 7, 1700403.	10.2	662
52	Improving Lithiumâ€“Sulfur Battery Performance under Lean Electrolyte through Nanoscale Confinement in Soft Swellable Gels. Nano Letters, 2017, 17, 3061-3067.	4.5	122
53	Operando Solid-State NMR Observation of Solvent-Mediated Adsorption-Reaction of Carbohydrates in Zeolites. ACS Catalysis, 2017, 7, 3489-3500.	5.5	70
54	Elucidating the Solvation Structure and Dynamics of Lithium Polysulfides Resulting from Competitive Salt and Solvent Interactions. Chemistry of Materials, 2017, 29, 3375-3379.	3.2	117

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55	Ammonium Additives to Dissolve Lithium Sulfide through Hydrogen Binding for High-Energy Lithiumâ€“Sulfur Batteries. ACS Applied Materials & Interfaces, 2017, 9, 4290-4295.	4.0	74
56	Controlling Solidâ€“Liquid Conversion Reactions for a Highly Reversible Aqueous Zincâ€“Iodine Battery. ACS Energy Letters, 2017, 2, 2674-2680.	8.8	207
57	Non-encapsulation approach for high-performance Liâ€“S batteries through controlled nucleation and growth. Nature Energy, 2017, 2, 813-820.	19.8	326
58	Effects of Anion Mobility on Electrochemical Behaviors of Lithiumâ€“Sulfur Batteries. Chemistry of Materials, 2017, 29, 9023-9029.	3.2	35
59	Evaluating Transport Properties and Ionic Dissociation of LiPF₆in Concentrated Electrolyte. Journal of the Electrochemical Society, 2017, 164, A2434-A2440.	1.3	32
60	Long term stability of Li-S batteries using high concentration lithium nitrate electrolytes. Nano Energy, 2017, 40, 607-617.	8.2	160
61	One-Pot Process in Scalable Bath for Water-Dispersed ZnS Nanocrystals with the Tailored Size. Journal of Nanoscience and Nanotechnology, 2017, 17, 2943-2950.	0.9	0
62	Molecular Storage of Mg Ions with Vanadium Oxide Nanoclusters. Advanced Functional Materials, 2016, 26, 3446-3453.	7.8	65
63	Restricting the Solubility of Polysulfides in Liâ€S Batteries Via Electrolyte Salt Selection. Advanced Energy Materials, 2016, 6, 1600160.	10.2	66
64	Effect of the Anion Activity on the Stability of Li Metal Anodes in Lithiumâ€Sulfur Batteries. Advanced Functional Materials, 2016, 26, 3059-3066.	7.8	117
65	Facilitated Ion Transport in Smectic Ordered Ionic Liquid Crystals. Advanced Materials, 2016, 28, 9301-9307.	11.1	36
66	Use of steric encumbrance to develop conjugated nanoporous polymers for metal-free catalytic hydrogenation. Chemical Communications, 2016, 52, 11919-11922.	2.2	17
67	Enabling room temperature sodium metal batteries. Nano Energy, 2016, 30, 825-830.	8.2	248
68	Reversible aqueous zinc/manganese oxide energy storage from conversion reactions. Nature Energy, 2016, 1, .	19.8	2,186
69	Preferential Solvation of an Asymmetric Redox Molecule. Journal of Physical Chemistry C, 2016, 120, 27834-27839.	1.5	18
70	Toward the design of high voltage magnesiumâ€“lithium hybrid batteries using dual-salt electrolytes. Chemical Communications, 2016, 52, 5379-5382.	2.2	60
71	Nanocomposite polymer electrolyte for rechargeable magnesium batteries. Nano Energy, 2015, 12, 750-759.	8.2	121
72	Highly active electrolytes for rechargeable Mg batteries based on a [Mg₂(Î¼-Cl)₂]²⁺ cation complex in dimethoxyethane. Physical Chemistry Chemical Physics, 2015, 17, 13307-13314.	1.3	126

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73	Solvation structure and transport properties of alkali cations in dimethyl sulfoxide under exogenous static electric fields. Journal of Chemical Physics, 2015, 142, 224502.	1.2	12
74	Diffusional motion of redox centers in carbonate electrolytes. Journal of Chemical Physics, 2014, 141, 104509.	1.2	24
75	Synthesis and Characterization of Lithium Bis(fluoromalonato)borate for Lithiumâ€Ion Battery Applications. Advanced Energy Materials, 2014, 4, 1301368.	10.2	43
76	Distribution of 1-Butyl-3-methylimidazolium Bistrifluoromethylsulfonimide in Mesoporous Silica As a Function of Pore Filling. Journal of Physical Chemistry C, 2013, 117, 15754-15762.	1.5	37
77	Dynamic and Structural Properties of Room-Temperature Ionic Liquids near Silica and Carbon Surfaces. Langmuir, 2013, 29, 9744-9749.	1.6	59
78	Synthesis of Porous, Nitrogenâ€Doped Adsorption/Diffusion Carbonaceous Membranes for Efficient CO₂ Separation. Macromolecular Rapid Communications, 2013, 34, 452-459.	2.0	46
79	New Tricks for Old Molecules: Development and Application of Porous Nâ€doped, Carbonaceous Membranes for CO₂ Separation. Advanced Materials, 2013, 25, 4152-4158.	11.1	71
80	Conversion of glucose into levulinic acid with solid metal(IV) phosphate catalysts. Journal of Catalysis, 2013, 304, 123-134.	3.1	189
81	Carbon Membranes: New Tricks for Old Molecules: Development and Application of Porous Nâ€doped, Carbonaceous Membranes for CO₂ Separation (Adv. Mater. 30/2013). Advanced Materials, 2013, 25, 4200-4200.	11.1	0
82	Rotational and Translational Dynamics of Rhodamine 6G in a Pyrrolidinium Ionic Liquid: A Combined Time-Resolved Fluorescence Anisotropy Decay and NMR Study. Journal of Physical Chemistry B, 2012, 116, 7883-7890.	1.2	37
83	Rotational and Translational Dynamics of <i>N</i>-Butyl-<i>N</i>-methylpiperidinium Trifluoromethanesulfonimide Ionic Liquids Studied by NMR and MD Simulations. Journal of Physical Chemistry C, 2012, 116, 20779-20786.	1.5	16
84	Efficient CO₂ Capture by Porous, Nitrogenâ€Doped Carbonaceous Adsorbents Derived from Taskâ€Specific Ionic Liquids. ChemSusChem, 2012, 5, 1912-1917.	3.6	92
85	Observation of Methanol Behavior in Fuel Cells Inâ€...Situ by NMR Spectroscopy. Angewandte Chemie - International Edition, 2012, 51, 3842-3845.	7.2	26
86	Optimum lithium-ion conductivity in cubic Li7â^'xLa3Hf2â^'xTaxO12. Journal of Power Sources, 2012, 209, 184-188.	4.0	70
87	Physicochemical properties of imidazolium-derived ionic liquids with different C-2 substitutions. Physical Chemistry Chemical Physics, 2011, 13, 21503.	1.3	48
88	A Low-Temperature Crossover in Water Dynamics in an Aqueous LiCl Solution: Diffusion Probed by Neutron Spinâ^'Echo and Nuclear Magnetic Resonance. Journal of Physical Chemistry B, 2010, 114, 16737-16743.	1.2	30
89	Enhanced local density of states at the Fermi level of the surface platinum in carbon-supported platinum particles by Nafion ionomer. Electrochemistry Communications, 2009, 11, 466-468.	2.3	1
90	1H NMR Measurements of the Phase Transition of (NH4)3H(SO4)2 Single Crystals. Journal of the Korean Physical Society, 2008, 52, 427-430.	0.3	0

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91	Heat treatment and potential cycling effects on surface morphology, particle size, and catalytic activity of Pt/C catalysts studied by 13C NMR, TEM, XRD and CV. Electrochemistry Communications, 2007, 9, 317-324.	2.3	59
92	Metal Particle Size Effects and Metal-Support Interaction in Electrochemically Treated Pt/C Catalysts Investigated by [sup 13]C NMR. Journal of the Electrochemical Society, 2005, 152, J131.	1.3	12
93	13C NMR Study of Vortex Dynamics in LuNi2B2C. International Journal of Modern Physics B, 2003, 17, 3387-3391.	1.0	1
94	Influence of metal cleaning on the particle size and surface morphology of platinum black studied by NMR, TEM and CV techniques. Electrochimica Acta, 2001, 47, 519-523.	2.6	12
95	11B NMR study of TbNi2B2C. Journal of Magnetism and Magnetic Materials, 2001, 226-230, 272-274.	1.0	2
96	63,65Cu NQR study of Zn and Ni doped YBa2Cu3O7. Physica C: Superconductivity and Its Applications, 2000, 341-348, 2123-2124.	0.6	0
97	Local field distribution in YNi2B2C superconductor. Physica C: Superconductivity and Its Applications, 2000, 341-348, 2137-2138.	0.6	0
98	Vortex structure and dynamics inYNi2B2Csingle crystalby11B NMR. Physical Review B, 2000, 62, 123-126.	1.1	14
99	Vortex dynamics in YNi2B2C single crystal by 11B NMR. International Journal of Modern Physics B, 1999, 13, 3682-3687.	1.0	4
100	Relaxation mechanisms for63,65Cunuclear quadrupole resonance in Zn-dopedYBa2Cu3O7. Physical Review B, 1999, 59, 11217-11220.	1.1	9
101	Suppression of antiferromagnetic spin fluctuation in Zn-substituted YBa2Cu3O7. Physica C: Superconductivity and Its Applications, 1999, 320, 245-252.	0.6	5