

# Kee Sung Han

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

99  
papers

6,048  
citations

35  
h-index

77  
g-index

104  
ext. papers

7,477  
ext. citations

11.5  
avg, IF

5.7  
L-index

#	Paper	IF	Citations
99	An automated framework for high-throughput predictions of NMR chemical shifts within liquid solutions. <i>Nature Computational Science</i> , <b>2022</b> , 2, 112-122		0
98	Understanding the Solvation-Dependent Properties of Cyclic Ether Multivalent Electrolytes Using High-Field NMR and Quantum Chemistry.. <i>Jacs Au</i> , <b>2022</b> , 2, 917-932		1
97	Sulfone-based electrolytes for high energy density lithium-ion batteries. <i>Journal of Power Sources</i> , <b>2022</b> , 527, 231171	8.9	7
96	Deep eutectic solvent-based polymer electrolyte for solid-state lithium metal batteries. <i>Journal of Energy Chemistry</i> , <b>2022</b> , 70, 363-372	12	1
95	Concentration-dependent ion correlations impact the electrochemical behavior of calcium battery electrolytes.. <i>Physical Chemistry Chemical Physics</i> , <b>2021</b> ,	3.6	3
94	Role of a Multivalent Ion-Solvent Interaction on Restricted Mg Diffusion in Dimethoxyethane Electrolytes. <i>Journal of Physical Chemistry B</i> , <b>2021</b> , 125, 12574-12583	3.4	4
93	Pulsed Field Gradient Nuclear Magnetic Resonance and Diffusion Analysis in Battery Research. <i>Chemistry of Materials</i> , <b>2021</b> , 33, 8562-8590	9.6	3
92	Factors Influencing Preferential Anion Interactions during Solvation of Multivalent Cations in Ethereal Solvents. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 6005-6012	3.8	8
91	Quantifying Species Populations in Multivalent Borohydride Electrolytes. <i>Journal of Physical Chemistry B</i> , <b>2021</b> , 125, 3644-3652	3.4	7
90	Advanced Low-Flammable Electrolytes for Stable Operation of High-Voltage Lithium-Ion Batteries. <i>Angewandte Chemie</i> , <b>2021</b> , 133, 13109-13116	3.6	6
89	Advanced Low-Flammable Electrolytes for Stable Operation of High-Voltage Lithium-Ion Batteries. <i>Angewandte Chemie - International Edition</i> , <b>2021</b> , 60, 12999-13006	16.4	20
88	Diversity-oriented synthesis of polymer membranes with ion solvation cages. <i>Nature</i> , <b>2021</b> , 592, 225-231	50.4	24
87	Concentration-Dependent Solvation Structure and Dynamics of Aqueous Sulfuric Acid Using Multinuclear NMR and DFT. <i>Journal of Physical Chemistry B</i> , <b>2021</b> , 125, 5089-5099	3.4	0
86	Rational Design of Electrolytes for Long-Term Cycling of Si Anodes over a Wide Temperature Range. <i>ACS Energy Letters</i> , <b>2021</b> , 6, 387-394	20.1	22
85	Origin of Unusual Acidity and Li Diffusivity in a Series of Water-in-Salt Electrolytes. <i>Journal of Physical Chemistry B</i> , <b>2020</b> , 124, 5284-5291	3.4	14
84	Cotton Fiber-Based Sorbents for Treating Crude Oil Spills. <i>ACS Omega</i> , <b>2020</b> , 5, 13894-13901	3.9	11
83	A lithium-sulfur battery with a solution-mediated pathway operating under lean electrolyte conditions. <i>Nano Energy</i> , <b>2020</b> , 76, 105041	17.1	14

82	Probing Conformational Evolution and Associated Dynamics of Mg(N(SO <sub>2</sub> CF <sub>3</sub> ) <sub>2</sub> ) <sub>2</sub> Dimethoxyethane Adduct Using Solid-State <sup>19</sup> F and <sup>1</sup> H NMR. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 4999-5008	3.8	6
81	Metal-Organic Framework-Based Microfluidic Impedance Sensor Platform for Ultrasensitive Detection of Perfluorooctanesulfonate. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 10503-10514	9.5	38
80	Reversible Electrochemical Interface of Mg Metal and Conventional Electrolyte Enabled by Intermediate Adsorption. <i>ACS Energy Letters</i> , <b>2020</b> , 5, 200-206	20.1	17
79	Enabling Natural Graphite in High-Voltage Aqueous Graphite    Zn Metal Dual-Ion Batteries. <i>Advanced Energy Materials</i> , <b>2020</b> , 10, 2001256	21.8	18
78	Controlling Ion Coordination Structure and Diffusion Kinetics for Optimized Electrode-Electrolyte Interphases and High-Performance Si Anodes. <i>Chemistry of Materials</i> , <b>2020</b> , 32, 8956-8964	9.6	10
77	Role of Solvent Rearrangement on Mg Solvation Structures in Dimethoxyethane Solutions using Multimodal NMR Analysis. <i>Journal of Physical Chemistry Letters</i> , <b>2020</b> , 11, 6443-6449	6.4	12
76	Enabling Ether-Based Electrolytes for Long Cycle Life of Lithium-Ion Batteries at High Charge Voltage. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 54893-54903	9.5	18
75	Aqueous Dual-Ion Batteries: Enabling Natural Graphite in High-Voltage Aqueous Graphite    Zn Metal Dual-Ion Batteries (Adv. Energy Mater. 41/2020). <i>Advanced Energy Materials</i> , <b>2020</b> , 10, 2070169	21.8	
74	Impact of ionic liquid on lithium ion battery with a solid poly(ionic liquid) pentablock terpolymer as electrolyte and separator. <i>Polymer</i> , <b>2020</b> , 209, 122975	3.9	5
73	Subtle changes in hydrogen bond orientation result in glassification of carbon capture solvents. <i>Physical Chemistry Chemical Physics</i> , <b>2020</b> , 22, 19009-19021	3.6	2
72	Adsorption and Thermal Decomposition of Electrolytes on Nanometer Magnesium Oxide: An in Situ C MAS NMR Study. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 38689-38696	9.5	12
71	Tailored crosslinking of Poly(ethylene oxide) enables mechanical robustness and improved sodium-ion conductivity. <i>Energy Storage Materials</i> , <b>2019</b> , 21, 85-96	19.4	31
70	Joint Charge Storage for High-Rate Aqueous Zinc-Manganese Dioxide Batteries. <i>Advanced Materials</i> , <b>2019</b> , 31, e1900567	24	163
69	Probing the Sorption of Perfluorooctanesulfonate Using Mesoporous Metal-Organic Frameworks from Aqueous Solutions. <i>Inorganic Chemistry</i> , <b>2019</b> , 58, 8339-8346	5.1	28
68	Lithium Insertion Mechanism in Iron Fluoride Nanoparticles Prepared by Catalytic Decomposition of Fluoropolymer. <i>ACS Applied Energy Materials</i> , <b>2019</b> , 2, 1832-1843	6.1	12
67	Evolution of Ion-Ion Interactions and Structures in Smectic Ionic Liquid Crystals. <i>Journal of Physical Chemistry C</i> , <b>2019</b> , 123, 20547-20557	3.8	6
66	Structure and Dynamics of Polysulfide Clusters in a Nonaqueous Solvent Mixture of 1,3-Dioxolane and 1,2-Dimethoxyethane. <i>Chemistry of Materials</i> , <b>2019</b> , 31, 2308-2319	9.6	36
65	Enhanced Capacities of Mixed Fatty Acid-Modified Sawdust Aggregators for Remediation of Crude Oil Spill. <i>ACS Omega</i> , <b>2019</b> , 4, 412-420	3.9	2

64	Addressing Passivation in Lithium-Sulfur Battery Under Lean Electrolyte Condition. <i>Advanced Functional Materials</i> , <b>2018</b> , 28, 1707234	15.6	111
63	Mechanism of Formation of Li <sub>7</sub> P <sub>3</sub> S <sub>11</sub> Solid Electrolytes through Liquid Phase Synthesis. <i>Chemistry of Materials</i> , <b>2018</b> , 30, 990-997	9.6	90
62	High-Voltage Lithium-Metal Batteries Enabled by Localized High-Concentration Electrolytes. <i>Advanced Materials</i> , <b>2018</b> , 30, e1706102	24	452
61	Tailored Reaction Route by Micropore Confinement for LiS Batteries Operating under Lean Electrolyte Conditions. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1800590	21.8	42
60	Controlled Synthesis of Sulfur-Rich Polymeric Selenium Sulfides as Promising Electrode Materials for Long-Life, High-Rate Lithium Metal Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 29565-29573	9.5	30
59	Al Pulsed Field Gradient, Diffusion-NMR Spectroscopy of Solvation Dynamics and Ion Pairing in Alkaline Aluminate Solutions. <i>Journal of Physical Chemistry B</i> , <b>2018</b> , 122, 10907-10912	3.4	11
58	Detrimental Effects of Chemical Crossover from the Lithium Anode to Cathode in Rechargeable Lithium Metal Batteries. <i>ACS Energy Letters</i> , <b>2018</b> , 3, 2921-2930	20.1	51
57	Lean Electrolyte Batteries: Addressing Passivation in Lithium-Sulfur Battery Under Lean Electrolyte Condition (Adv. Funct. Mater. 38/2018). <i>Advanced Functional Materials</i> , <b>2018</b> , 28, 1870275	15.6	5
56	Electrode Edge Effects and the Failure Mechanism of Lithium-Metal Batteries. <i>ChemSusChem</i> , <b>2018</b> , 11, 3821-3828	8.3	25
55	Lithium-Pretreated Hard Carbon as High-Performance Sodium-Ion Battery Anodes. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1801441	21.8	69
54	Non-flammable electrolytes with high salt-to-solvent ratios for Li-ion and Li-metal batteries. <i>Nature Energy</i> , <b>2018</b> , 3, 674-681	62.3	357
53	Manipulating Adsorption/Insertion Mechanisms in Nanostructured Carbon Materials for High-Efficiency Sodium Ion Storage. <i>Advanced Energy Materials</i> , <b>2017</b> , 7, 1700403	21.8	486
52	Improving Lithium-Sulfur Battery Performance under Lean Electrolyte through Nanoscale Confinement in Soft Swellable Gels. <i>Nano Letters</i> , <b>2017</b> , 17, 3061-3067	11.5	99
51	Operando Solid-State NMR Observation of Solvent-Mediated Adsorption-Reaction of Carbohydrates in Zeolites. <i>ACS Catalysis</i> , <b>2017</b> , 7, 3489-3500	13.1	56
50	Molecular Level Structure and Dynamics of Electrolytes Using <sup>17</sup> O Nuclear Magnetic Resonance Spectroscopy <b>2017</b> , 71-82		2
49	Elucidating the Solvation Structure and Dynamics of Lithium Polysulfides Resulting from Competitive Salt and Solvent Interactions. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 3375-3379	9.6	78
48	Ammonium Additives to Dissolve Lithium Sulfide through Hydrogen Binding for High-Energy Lithium-Sulfur Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 4290-4295	9.5	51
47	Controlling Solid-Liquid Conversion Reactions for a Highly Reversible Aqueous Zinc-Iodine Battery. <i>ACS Energy Letters</i> , <b>2017</b> , 2, 2674-2680	20.1	96

46	Non-encapsulation approach for high-performance LiS batteries through controlled nucleation and growth. <i>Nature Energy</i> , <b>2017</b> , 2, 813-820	62.3	256
45	Effects of Anion Mobility on Electrochemical Behaviors of Lithium-Sulfur Batteries. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 9023-9029	9.6	28
44	Evaluating Transport Properties and Ionic Dissociation of LiPF <sub>6</sub> in Concentrated Electrolyte. <i>Journal of the Electrochemical Society</i> , <b>2017</b> , 164, A2434-A2440	3.9	25
43	Long term stability of Li-S batteries using high concentration lithium nitrate electrolytes. <i>Nano Energy</i> , <b>2017</b> , 40, 607-617	17.1	114
42	One-Pot Process in Scalable Bath for Water-Dispersed ZnS Nanocrystals with the Tailored Size. <i>Journal of Nanoscience and Nanotechnology</i> , <b>2017</b> , 17, 2943-2950	1.3	
41	Reversible aqueous zinc/manganese oxide energy storage from conversion reactions. <i>Nature Energy</i> , <b>2016</b> , 1,	62.3	1461
40	Preferential Solvation of an Asymmetric Redox Molecule. <i>Journal of Physical Chemistry C</i> , <b>2016</b> , 120, 27834-27839	3.4	27839
39	Toward the design of high voltage magnesium-lithium hybrid batteries using dual-salt electrolytes. <i>Chemical Communications</i> , <b>2016</b> , 52, 5379-82	5.8	49
38	Molecular Storage of Mg Ions with Vanadium Oxide Nanoclusters. <i>Advanced Functional Materials</i> , <b>2016</b> , 26, 3446-3453	15.6	50
37	Restricting the Solubility of Polysulfides in Li-S Batteries Via Electrolyte Salt Selection. <i>Advanced Energy Materials</i> , <b>2016</b> , 6, 1600160	21.8	57
36	Effect of the Anion Activity on the Stability of Li Metal Anodes in Lithium-Sulfur Batteries. <i>Advanced Functional Materials</i> , <b>2016</b> , 26, 3059-3066	15.6	89
35	Facilitated Ion Transport in Smectic Ordered Ionic Liquid Crystals. <i>Advanced Materials</i> , <b>2016</b> , 28, 9301-9307	17.1	29
34	Use of steric encumbrance to develop conjugated nanoporous polymers for metal-free catalytic hydrogenation. <i>Chemical Communications</i> , <b>2016</b> , 52, 11919-11922	5.8	11
33	Enabling room temperature sodium metal batteries. <i>Nano Energy</i> , <b>2016</b> , 30, 825-830	17.1	182
32	Highly active electrolytes for rechargeable Mg batteries based on a [Mg <sub>2</sub> (EtCl) <sub>2</sub> ] <sup>2+</sup> cation complex in dimethoxyethane. <i>Physical Chemistry Chemical Physics</i> , <b>2015</b> , 17, 13307-14	3.6	108
31	Solvation structure and transport properties of alkali cations in dimethyl sulfoxide under exogenous static electric fields. <i>Journal of Chemical Physics</i> , <b>2015</b> , 142, 224502	3.9	8
30	Nanocomposite polymer electrolyte for rechargeable magnesium batteries. <i>Nano Energy</i> , <b>2015</b> , 12, 750-759	17.1	86
29	Diffusional motion of redox centers in carbonate electrolytes. <i>Journal of Chemical Physics</i> , <b>2014</b> , 141, 104509	3.9	21

28	Synthesis and Characterization of Lithium Bis(fluoromalonato)borate for Lithium-Ion Battery Applications. <i>Advanced Energy Materials</i> , <b>2014</b> , 4, 1301368	21.8	37
27	Distribution of 1-Butyl-3-methylimidazolium Bistrifluoromethylsulfoni- <i>mide</i> in Mesoporous Silica As a Function of Pore Filling. <i>Journal of Physical Chemistry C</i> , <b>2013</b> , 117, 15754-15762	3.8	29
26	Dynamic and structural properties of room-temperature ionic liquids near silica and carbon surfaces. <i>Langmuir</i> , <b>2013</b> , 29, 9744-9	4	55
25	Synthesis of porous, nitrogen-doped adsorption/diffusion carbonaceous membranes for efficient CO <sub>2</sub> separation. <i>Macromolecular Rapid Communications</i> , <b>2013</b> , 34, 452-9	4.8	41
24	New tricks for old molecules: development and application of porous N-doped, carbonaceous membranes for CO <sub>2</sub> separation. <i>Advanced Materials</i> , <b>2013</b> , 25, 4152-8	24	58
23	Conversion of glucose into levulinic acid with solid metal(IV) phosphate catalysts. <i>Journal of Catalysis</i> , <b>2013</b> , 304, 123-134	7.3	161
22	Carbon Membranes: New Tricks for Old Molecules: Development and Application of Porous N-doped, Carbonaceous Membranes for CO <sub>2</sub> Separation (Adv. Mater. 30/2013). <i>Advanced Materials</i> , <b>2013</b> , 25, 4200-4200	24	
21	Optimum lithium-ion conductivity in cubic Li <sub>7</sub> La <sub>3</sub> Hf <sub>2</sub> TaO <sub>12</sub> . <i>Journal of Power Sources</i> , <b>2012</b> , 209, 184-188	8.9	60
20	Rotational and translational dynamics of rhodamine 6G in a pyrrolidinium ionic liquid: a combined time-resolved fluorescence anisotropy decay and NMR study. <i>Journal of Physical Chemistry B</i> , <b>2012</b> , 116, 7883-90	3.4	35
19	Rotational and Translational Dynamics of N-Butyl-N-methylpiperidinium Trifluoromethanesulfoni- <i>mide</i> Ionic Liquids Studied by NMR and MD Simulations. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 20779-20786	3.8	15
18	Efficient CO <sub>2</sub> capture by porous, nitrogen-doped carbonaceous adsorbents derived from task-specific ionic liquids. <i>ChemSusChem</i> , <b>2012</b> , 5, 1912-7	8.3	84
17	Observation of Methanol Behavior in Fuel Cells In Situ by NMR Spectroscopy. <i>Angewandte Chemie</i> , <b>2012</b> , 124, 3908-3911	3.6	3
16	Observation of methanol behavior in fuel cells in situ by NMR spectroscopy. <i>Angewandte Chemie - International Edition</i> , <b>2012</b> , 51, 3842-5	16.4	22
15	Physicochemical properties of imidazolium-derived ionic liquids with different C-2 substitutions. <i>Physical Chemistry Chemical Physics</i> , <b>2011</b> , 13, 21503-10	3.6	46
14	A low-temperature crossover in water dynamics in an aqueous LiCl solution: diffusion probed by neutron spin-echo and nuclear magnetic resonance. <i>Journal of Physical Chemistry B</i> , <b>2010</b> , 114, 16737-43	3.4	29
13	Enhanced local density of states at the Fermi level of the surface platinum in carbon-supported platinum particles by Nafion ionomer. <i>Electrochemistry Communications</i> , <b>2009</b> , 11, 466-468	5.1	1
12	Heat treatment and potential cycling effects on surface morphology, particle size, and catalytic activity of Pt/C catalysts studied by <sup>13</sup> C NMR, TEM, XRD and CV. <i>Electrochemistry Communications</i> , <b>2007</b> , 9, 317-324	5.1	50
11	Metal Particle Size Effects and Metal-Support Interaction in Electrochemically Treated Pt/C Catalysts Investigated by <sup>13</sup> C NMR. <i>Journal of the Electrochemical Society</i> , <b>2005</b> , 152, J131	3.9	11

10	<sup>13</sup> C NMR Study of Vortex Dynamics in LuNi <sub>2</sub> B <sub>2</sub> C. <i>International Journal of Modern Physics B</i> , <b>2003</b> , 17, 3387-3391	1.1	1
9	Influence of metal cleaning on the particle size and surface morphology of platinum black studied by NMR, TEM and CV techniques. <i>Electrochimica Acta</i> , <b>2001</b> , 47, 519-523	6.7	10
8	<sup>11</sup> B NMR study of TbNi <sub>2</sub> B <sub>2</sub> C. <i>Journal of Magnetism and Magnetic Materials</i> , <b>2001</b> , 226-230, 272-274	2.8	2
7	<sup>63,65</sup> Cu NQR study of Zn and Ni doped YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> . <i>Physica C: Superconductivity and Its Applications</i> , <b>2000</b> , 341-348, 2123-2124	1.3	
6	Local field distribution in YNi <sub>2</sub> B <sub>2</sub> C superconductor. <i>Physica C: Superconductivity and Its Applications</i> , <b>2000</b> , 341-348, 2137-2138	1.3	
5	Vortex structure and dynamics in YNi <sub>2</sub> B <sub>2</sub> C single crystal by <sup>11</sup> B NMR. <i>Physical Review B</i> , <b>2000</b> , 62, 123-126	3.3	14
4	Vortex dynamics in YNi <sub>2</sub> B <sub>2</sub> C single crystal by <sup>11</sup> B NMR. <i>International Journal of Modern Physics B</i> , <b>1999</b> , 13, 3682-3687	1.1	4
3	Relaxation mechanisms for <sup>63,65</sup> Cu nuclear quadrupole resonance in Zn-doped YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> . <i>Physical Review B</i> , <b>1999</b> , 59, 11217-11220	3.3	9
2	Suppression of antiferromagnetic spin fluctuation in Zn-substituted YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> . <i>Physica C: Superconductivity and Its Applications</i> , <b>1999</b> , 320, 245-252	1.3	4
1	Solvation Structure and Dynamics of Mg(TFSI) <sub>2</sub> Aqueous Electrolyte. <i>Energy and Environmental Materials</i> ,	1.3	6