Jeff Sakamoto

List of Publications by Year
in descending order

120 papers	9,711 citations	41344 49 h-index	38395 95 g-index
122 all docs	122 docs citations	122 times ranked	6714 citing authors

#	Article	IF	Citations
1	The effect of aspect ratio on the mechanical behavior of Li metal in solid-state cells. Journal of Power Sources, 2022, 520, 230831.	7.8	20
2	Correlating Stability and Performance of NaSICON Membranes for Aqueous Redox Flow Batteries. ACS Applied Materials & Interfaces, 2022, 14, 19332-19341.	8.0	3
3	Increasing the Pressureâ€Free Stripping Capacity of the Lithium Metal Anode in Solidâ€Stateâ€Batteries by Carbon Nanotubes. Advanced Energy Materials, 2022, 12, .	19.5	21
4	(Digital Presentation) Evaluating Stability and Performance of Nasicon Membranes for Crossover Mitigation in Aqueous Redox-Flow Batteries. ECS Meeting Abstracts, 2022, MA2022-01, 1997-1997.	0.0	0
5	Combining Operando Techniques to Probe Chemo-Mechanical Evolution at Buried Solid/Solid Interfaces. ECS Meeting Abstracts, 2022, MA2022-01, 1636-1636.	0.0	0
6	(Invited) The Stability and Kinetics of the Li/Solid Electrolyte Interface. ECS Meeting Abstracts, 2022, MA2022-01, 1640-1640.	0.0	0
7	Understanding Coupled Electro-Chemo-Mechanics during I n Situ Li Metal Anode Formation in Anode-Free Solid-State Batteries. ECS Meeting Abstracts, 2022, MA2022-01, 1630-1630.	0.0	0
8	Electrochemical Desalination Using a Hybrid Redox Flow Cell. ECS Meeting Abstracts, 2022, MA2022-01, 2285-2285.	0.0	0
9	Fast Li-Ion Conduction in Spinel-Structured Solids. Molecules, 2021, 26, 2625.	3.8	4
10	Dependence of Solid-State Metal Battery Thermodynamics on Interfacial Mechanics. ECS Meeting Abstracts, 2021, MA2021-01, 319-319.	0.0	0
11	Safety Considerations of Lithium Metal Solid State Batteries. ECS Meeting Abstracts, 2021, MA2021-01, 291-291.	0.0	0
12	Local electronic structure variation resulting in Li â€˜filamentâ€™ formation within solid electrolytes. Nature Materials, 2021, 20, 1485-1490.	27.5	226
13	Operando analysis of the molten Li|LLZO interface: Understanding how the physical properties of Li affect the critical current density. Matter, 2021, 4, 1947-1961.	10.0	62
14	Transitioning solid-state batteries from lab to market: Linking electro-chemo-mechanics with practical considerations. Joule, 2021, 5, 1371-1390.	24.0	92
15	The Effect of Mechanical State on the Equilibrium Potential of Alkali Metal/Ceramic Singleâ€Ion Conductor Systems. Advanced Energy Materials, 2021, 11, 2101355.	19.5	14
16	Characterization of hot-pressed von Alpen type NASICON ceramic electrolytes. Solid State Ionics, 2021, 369, 115712.	2.7	14
17	Characterizing the mechanical behavior of lithium in compression. Journal of Materials Research, 2021, 36, 729-739.	2.6	15
18	Enabling 6C Fast Charging of Liâ€Ion Batteries with Graphite/Hard Carbon Hybrid Anodes. Advanced Energy Materials, 2021, 11, 2003336.	19.5	116

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19	Evolving contact mechanics and microstructure formation dynamics of the lithium metal-Li7La3Zr2O12 interface. Nature Communications, 2021, 12, 6369.	12.8	26
20	Investigation of the Effect of Electrode Design and Material Parameters on the Homogeneity of Reaction Current Density Distribution in Hybrid Anodes Using Continuum Scale Modeling. ECS Meeting Abstracts, 2021, MA2021-02, 414-414.	0.0	0
21	(Invited) Optimization of Highly Ordered Laser-Patterned Electrode (HOLE) Design for Achieving Enhanced Fast Charging Performance in Graphite Anodes with > 3mAh/cm2 loading. ECS Meeting Abstracts, 2021, MA2021-02, 469-469.	0.0	0
22	The effect of lanthanoid defects on anionic solvation of Li in Li6.5La2+xZr1.5Ta0.5O12 from xÂ=Â0 to xÂ=Â1.2 garnet. Solid State Ionics, 2020, 345, 115170.	2.7	9
23	Hexagonal-WO3 nanorods encapsulated in nitrogen and sulfur co-doped reduced graphene oxide as a high-performance anode material for lithium ion batteries. Journal of Solid State Chemistry, 2020, 282, 121068.	2.9	11
24	Sodium Plating from Naâ€Î²â€³â€Alumina Ceramics at Room Temperature, Paving the Way for Fastâ€Charging Allâ€Solidâ€State Batteries. Advanced Energy Materials, 2020, 10, 1902899.	19.5	99
25	Correlating the effect of dopant type (Al, Ga, Ta) on the mechanical and electrical properties of hot-pressed Li-garnet electrolyte. Journal of the European Ceramic Society, 2020, 40, 1999-2006.	5.7	46
26	Enabling â€œlithium-freeâ€•manufacturing of pure lithium metal solid-state batteries through in situ plating. Nature Communications, 2020, 11, 5201.	12.8	101
27	Kinetic versus Thermodynamic Stability of LLZO in Contact with Lithium Metal. Chemistry of Materials, 2020, 32, 10207-10215.	6.7	68
28	Electrochemical and Surface Chemistry Analysis of Lithium Lanthanum Zirconium Tantalum Oxide (LLZTO)/Liquid Electrolyte (LE) Interfaces. Journal of Power Sources, 2020, 474, 228598.	7.8	33
29	Mapping hot-pressed Li6.25Al0.25La3Zr2O12 (LLZO) grains and grain boundaries through a simple thermal grooving technique. Journal of Asian Ceramic Societies, 2020, 8, 793-803.	2.3	6
30	Solidâ€State Batteries: Correlating Macro and Atomic Structure with Elastic Properties and Ionic Transport of Glassy Li₂Sâ€P₂S₅ (LPS) Solid Electrolyte for Solidâ€State Li Metal Batteries (Adv. Energy Mater. 19/2020). Advanced Energy Materials, 2020, 10, 2070085.	19.5	1
31	Analysis of elastic, plastic, and creep properties of sodium metal and implications for solid-state batteries. Materialia, 2020, 12, 100792.	2.7	20
32	Electro-chemo-mechanical evolution of sulfide solid electrolyte/Li metal interfaces: operando analysis and ALD interlayer effects. Journal of Materials Chemistry A, 2020, 8, 6291-6302.	10.3	61
33	Li Penetration in Ceramic Solid Electrolytes: Operando Microscopy Analysis of Morphology, Propagation, and Reversibility. Matter, 2020, 2, 1025-1048.	10.0	240
34	Efficient fast-charging of lithium-ion batteries enabled by laser-patterned three-dimensional graphite anode architectures. Journal of Power Sources, 2020, 471, 228475.	7.8	168
35	Mixed Electronic and Ionic Conduction Properties of Lithium Lanthanum Titanate. Advanced Functional Materials, 2020, 30, 1909140.	14.9	51
36	Correlating Macro and Atomic Structure with Elastic Properties and Ionic Transport of Glassy Li₂Sâ€P₂S₅ (LPS) Solid Electrolyte for Solidâ€State Li Metal Batteries. Advanced Energy Materials, 2020, 10, 2000335.	19.5	56

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37	Modeling of Li-Ion Batteries with Highly-Ordered Hierarchical Electrode Design. ECS Meeting Abstracts, 2020, MA2020-01, 2728-2728.	0.0	0
38	(Invited) Stabilizing Li Anodes using LLZO Membrane Technology. ECS Meeting Abstracts, 2020, MA2020-01, 54-54.	0.0	0
39	Investigating the Mechanical Properties of Na Metal for Solid-State Batteries. ECS Meeting Abstracts, 2020, MA2020-01, 2840-2840.	0.0	0
40	Electrochemical Formation of Li Metal Anodes to Enable Li-Free Manufacturing of Solid-State Batteries. ECS Meeting Abstracts, 2020, MA2020-01, 293-293.	0.0	1
41	Enabling Fast Charging Lithium-Ion Batteries through Highly Ordered Laser-Patterned Electrode Design. ECS Meeting Abstracts, 2020, MA2020-01, 413-413.	0.0	0
42	The Effects of Electric Field Distribution on the Interface Stability in Solid Electrolytes. Journal of the Electrochemical Society, 2020, 167, 140501.	2.9	11
43	Enabling > 4C Fast Charging of Li-Ion Batteries with Graphite/Hard Carbon Hybrid Anodes to Overcome Energy/Power Density Tradeoffs. ECS Meeting Abstracts, 2020, MA2020-02, 539-539.	0.0	1
44	Deformation and Stresses in Solid-State Composite Battery Cathodes. ECS Meeting Abstracts, 2020, MA2020-02, 995-995.	0.0	0
45	(Invited) Enabling Fast Charging Li-ion Batteries through Three-dimensional Graphite Anode Design. ECS Meeting Abstracts, 2020, MA2020-02, 537-537.	0.0	0
46	Characterizing the Li-Solid-Electrolyte Interface Dynamics as a Function of Stack Pressure and Current Density. Joule, 2019, 3, 2165-2178.	24.0	298
47	Controlling Ionic Transport through the PEO-LiTFSI/LLZTO Interface. Electrochemical Society Interface, 2019, 28, 63-69.	0.4	72
48	Interfacial Reactions and Performance of Li₇La₃Zr₂O₁₂-Stabilized Liâ€“Sulfur Hybrid Cell. ACS Applied Materials & Interfaces, 2019, 11, 42042-42048.	8.0	34
49	Deformation and stresses in solid-state composite battery cathodes. Journal of Power Sources, 2019, 440, 227116.	7.8	26
50	Engineering a platform for nerve regeneration with direct application to nerve repair technology. Biomaterials, 2019, 216, 119263.	11.4	18
51	Elucidating the mobility of H⁺and Li⁺ions in (Li_{6.25â”x}H_xAl_{0.25})La₃Zr₂O₁₂viacorrelative neutron and electron spectroscopy. Energy and Environmental Science, 2019, 12, 945-951.	33.0	48
52	Dopantâ€Dependent Stability of Garnet Solid Electrolyte Interfaces with Lithium Metal. Advanced Energy Materials, 2019, 9, 1803440.	19.5	217
53	More pressure needed. Nature Energy, 2019, 4, 827-828.	39.5	32
54	The mechanics of scaling-up multichannel scaffold technology for clinical nerve repair. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 91, 247-254.	3.1	19

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55	Temperature dependent flux balance of the Li/Li7La3Zr2O12 interface. Electrochimica Acta, 2019, 296, 842-847.	5.2	120
56	Biomimetic 3D-printed scaffolds for spinal cord injury repair. Nature Medicine, 2019, 25, 263-269.	30.7	460
57	Elastic, plastic, and creep mechanical properties of lithium metal. Journal of Materials Science, 2019, 54, 2585-2600.	3.7	247
58	Mechanical Properties of Lithium Metal for Next Generation Batteries. ECS Meeting Abstracts, 2019, MA2019-01, 161-161.	0.0	1
59	Direct Observation of Lithium Dendrite Morphology, Propagation, and Reversibility in Garnet Solid Electrolytes Via Operando Video Microscopy. ECS Meeting Abstracts, 2019, , .	0.0	0
60	Enabling Fast Charging Lithium-Ion Batteries through the Rational Design of 3-D Anode Architectures. ECS Meeting Abstracts, 2019, , .	0.0	1
61	Atomic Layer Deposition of Ultrathin Glassy Lithium Borate-Carbonate Solid Electrolytes. ECS Meeting Abstracts, 2019, , .	0.0	0
62	Safety Assessment of Solid State Batteries. ECS Meeting Abstracts, 2019, , .	0.0	0
63	Characterization of Tin Phosphide Films for All-Solid-State Battery Anode Fabricated By Aerosol Deposition. ECS Meeting Abstracts, 2019, , .	0.0	0
64	Dramatic reduction in the densification temperature of garnet-type solid electrolytes. Ionics, 2018, 24, 1861-1868.	2.4	14
65	Correlating the interface resistance and surface adhesion of the Li metal-solid electrolyte interface. Journal of Power Sources, 2018, 377, 7-11.	7.8	85
66	Mechanical behavior of Li-ion-conducting crystalline oxide-based solid electrolytes: a brief review. Ionics, 2018, 24, 1271-1276.	2.4	136
67	Crystal Orientation-Dependent Reactivity of Oxide Surfaces in Contact with Lithium Metal. ACS Applied Materials & Interfaces, 2018, 10, 17471-17479.	8.0	9
68	Improving Li-ion battery charge rate acceptance through highly ordered hierarchical electrode design. Ionics, 2018, 24, 2935-2943.	2.4	34
69	Elucidating Ion Transport in Lithium-Ion Conductors by Combining Vibrational Spectroscopy in STEM and Neutron Scattering. Microscopy and Microanalysis, 2018, 24, 1496-1497.	0.4	0
70	Atomic layer deposition and first principles modeling of glassy Li₃BO₃â€“Li₂CO₃ electrolytes for solid-state Li metal batteries. Journal of Materials Chemistry A, 2018, 6, 19425-19437.	10.3	48
71	Preparation of a Li7La3Zr1.5Nb0.5O12 Garnet Solid Electrolyte Ceramic by using Sol-gel Powder Synthesis and Hot Pressing and Its Characterization. Journal of the Korean Physical Society, 2018, 73, 1535-1540.	0.7	11
72	Evaluating the Effects of Temperature and Pressure on Li/PEO-LiTFSI Interfacial Stability and Kinetics. Journal of the Electrochemical Society, 2018, 165, A2801-A2806.	2.9	61

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73	Demonstration of high current densities and extended cycling in the garnet Li7La3Zr2O12 solid electrolyte. Journal of Power Sources, 2018, 396, 314-318.	7.8	127
74	Electrochemical Window of the Li-Ion Solid Electrolyte Li₇La₃Zr₂O₁₂. ACS Energy Letters, 2017, 2, 462-468.	17.4	255
75	Cast-in-place, ambiently-dried, silica-based, high-temperature insulation. Acta Materialia, 2017, 127, 450-462.	7.9	12
76	Mechanical and physical properties of LiNi0.33Mn0.33Co0.33O2 (NMC). Journal of the European Ceramic Society, 2017, 37, 3213-3217.	5.7	90
77	Atomic Layer Deposition of the Solid Electrolyte Garnet Li₇La₃Zr₂O₁₂. Chemistry of Materials, 2017, 29, 3785-3792.	6.7	149
78	Impact of air exposure and surface chemistry on Liâ€“Li₇La₃Zr₂O₁₂ interfacial resistance. Journal of Materials Chemistry A, 2017, 5, 13475-13487.	10.3	300
79	Study on the mechanical properties of porous tin oxide. Ceramics International, 2017, 43, 10913-10918.	4.8	12
80	Mechanical properties of individual phases of ZrB2-ZrC eutectic composite measured by nanoindentation. Journal of the European Ceramic Society, 2017, 37, 4223-4227.	5.7	29
81	Effect of Processing Conditions of 75Li2S-25P2S5 Solid Electrolyte on its DC Electrochemical Behavior. Electrochimica Acta, 2017, 237, 144-151.	5.2	103
82	Elastic properties of lithium cobalt oxide (LiCoO₂). Journal of Asian Ceramic Societies, 2017, 5, 113-117.	2.3	87
83	Intergranular Li metal propagation through polycrystalline Li6.25Al0.25La3Zr2O12 ceramic electrolyte. Electrochimica Acta, 2017, 223, 85-91.	5.2	520
84	Electrical, mechanical and chemical behavior of Li1.2Zr1.9Sr0.1(PO4)3. Solid State Ionics, 2017, 300, 38-45.	2.7	30
85	Controlling and correlating the effect of grain size with the mechanical and electrochemical properties of Li₇La₃Zr₂O₁₂solid-state electrolyte. Journal of Materials Chemistry A, 2017, 5, 21491-21504.	10.3	202
86	Surface Chemistry Mechanism of Ultra-Low Interfacial Resistance in the Solid-State Electrolyte Li₇La₃Zr₂O₁₂. Chemistry of Materials, 2017, 29, 7961-7968.	6.7	612
87	Peripheral nerve growth within a hydrogel microchannel scaffold supported by a kinkâ€resistant conduit. Journal of Biomedical Materials Research - Part A, 2017, 105, 3392-3399.	4.0	33
88	Integrating Novel Microscopy into Battery Research: From Atomic Resolution to In Situ and Functional Imaging. Microscopy and Microanalysis, 2017, 23, 1998-1999.	0.4	0
89	Electrochemical Stability of Li6.5La3Zr1.5M0.5O12 (Mâ€‰=â€‰Nb or Ta) against Metallic Lithium. Frontiers in Energy Research, 2016, 4, .	2.3	62
90	The Effect of Relative Density on the Mechanical Properties of Hotâ€Pressed Cubic <scp><scp>Li</scp></scp>₇<scp><scp>La</scp></scp>₃<scp><scp>Zr</scp></scp>₂<sc Journal of the American Ceramic Society, 2016, 99, 1367-1374.	3.8	130

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91	Characterizing the degradation of alginate hydrogel for use in multilumen scaffolds for spinal cord repair. Journal of Biomedical Materials Research - Part A, 2016, 104, 611-619.	4.0	52
92	In-situ, non-destructive acoustic characterization of solid state electrolyte cells. Journal of Power Sources, 2016, 324, 126-133.	7.8	54
93	Mg/O₂ Battery Based on the Magnesiumâ€“Aluminum Chloride Complex (MACC) Electrolyte. Chemistry of Materials, 2016, 28, 7629-7637.	6.7	25
94	Interfacial Stability of Li Metalâ€“Solid Electrolyte Elucidated via in Situ Electron Microscopy. Nano Letters, 2016, 16, 7030-7036.	9.1	309
95	A Comparative Study on the Synthesis of Al-Doped Li6.2La3Zr2O12 Powder as a Solid Electrolyte Using Solâ€“Gel Synthesis and Solid-State Processing. Journal of Nanoscience and Nanotechnology, 2016, 16, 11662-11668.	0.9	15
96	BDNF gene delivery within and beyond templated agarose multi-channel guidance scaffolds enhances peripheral nerve regeneration. Journal of Neural Engineering, 2016, 13, 066011.	3.5	36
97	Characterizing the Liâ€“Li7La3Zr2O12 interface stability and kinetics as a function of temperature and current density. Journal of Power Sources, 2016, 302, 135-139.	7.8	446
98	Elastic Properties of the Solid Electrolyte Li₇La₃Zr₂O₁₂(LLZO). Chemistry of Materials, 2016, 28, 197-206.	6.7	445
99	Microstructure and Liâ€Ion Conductivity of Hotâ€Pressed Cubic Li₇La₃Zr₂O₁₂. Journal of the American Ceramic Society, 2015, 98, 1209-1214.	3.8	114
100	Thermoelectric properties of Sn substituted p-type Nd filled skutterudites. Journal of Alloys and Compounds, 2015, 639, 68-73.	5.5	17
101	A Tale of Two Sites: On Defining the Carrier Concentration in Garnetâ€Based Ionic Conductors for Advanced Li Batteries. Advanced Energy Materials, 2015, 5, 1500096.	19.5	143
102	Structure and Stoichiometry in Supervalent Doped Li₇La₃Zr₂O₁₂. Chemistry of Materials, 2015, 27, 3658-3665.	6.7	99
103	Super-ionic Conducting Oxide Electrolytes. Materials and Energy, 2015, , 391-414.	0.1	5
104	Transport properties of LiCoPO4 and Fe-substituted LiCoPO4. Journal of Power Sources, 2014, 254, 204-208.	7.8	45
105	Hierarchically structured TiO₂ for Ba-filled skutterudite with enhanced thermoelectric performance. Journal of Materials Chemistry A, 2014, 2, 20629-20635.	10.3	50
106	Tetragonal vs. cubic phase stability in Al â€“ free Ta doped Li₇La₃Zr₂O₁₂ (LLZO). Journal of Materials Chemistry A, 2014, 2, 13431-13436.	10.3	273
107	Augmenting protein release from layer-by-layer functionalized agarose hydrogels. Carbohydrate Polymers, 2014, 103, 377-384.	10.2	18
108	A preliminary investigation of fracture toughness of Li7La3Zr2O12 and its comparison to other solid Li-ionconductors. Materials Letters, 2013, 96, 117-120.	2.6	87

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109	Synthesis of nano-scale fast ion conducting cubic Li₇La₃Zr₂O₁₂. Nanotechnology, 2013, 24, 424005.	2.6	108
110	The effect of 24c-site (A) cation substitution on the tetragonalâ€“cubic phase transition in Li7â^'La3â^'A Zr2O12 garnet-based ceramic electrolyte. Journal of Power Sources, 2013, 230, 261-266.	7.8	116
111	Templated agarose scaffolds for the support of motor axon regeneration into sites of complete spinal cord transection. Biomaterials, 2013, 34, 1529-1536.	11.4	135
112	Synthesis and Characterization of Telluride Aerogels: Effect of Gelation on Thermoelectric Performance of Bi₂Te₃ and Bi_{2â€“x}Sb_xTe₃ Nanostructures. Journal of Physical Chemistry C, 2012, 116, 17431-17439.	3.1	34
113	Enhanced thermoelectric properties of Ba-filled skutterudites by grain size reduction and Ag nanoparticle inclusion. Journal of Materials Chemistry, 2012, 22, 2958-2964.	6.7	87
114	Mechanical properties of the solid Li-ion conducting electrolyte: Li0.33La0.57TiO3. Journal of Materials Science, 2012, 47, 5970-5977.	3.7	106
115	Iridium and Lead Doped Ruthenium Oxide Catalysts for Oxygen Evolution. ECS Transactions, 2009, 25, 1371-1382.	0.5	10
116	The Role of Acetic Acid and Glycerol in the Synthesis of Amorphous MgO Aerogels. Journal of the American Ceramic Society, 2009, 92, 1011-1016.	3.8	12
117	Templated Agarose Scaffolds Support Linear Axonal Regeneration. Tissue Engineering, 2006, 12, 2777-2787.	4.6	159
118	Tests results and performance comparisons of coated and un-coated skutterudite based segmented unicouples. Energy Conversion and Management, 2006, 47, 174-200.	9.2	102
119	Non-hydrolytic solâ€“gel synthesis and electrochemical characterization of tin-based oxide aerogels. Journal of Power Sources, 2003, 115, 19-26.	7.8	32
120	Challenges for and Pathways toward Li-Metal-Based All-Solid-State Batteries. ACS Energy Letters, 0, , 1399-1404.	17.4	228