Daniel Rettenwander

List of Publications by Year
in descending order

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76 papers	3,480 citations	172207 29 h-index	138251 58 g-index
81 all docs	81 docs citations	81 times ranked	3229 citing authors

#	Article	IF	Citations
1	Mechanism of Lithium Metal Penetration through Inorganic Solid Electrolytes. Advanced Energy Materials, 2017, 7, 1701003.	10.2	780
2	Structural and Electrochemical Consequences of Al and Ga Cosubstitution in Li₇La₃Zr₂O₁₂ Solid Electrolytes. Chemistry of Materials, 2016, 28, 2384-2392.	3.2	258
3	Lithium Metal Penetration Induced by Electrodeposition through Solid Electrolytes: Example in Single-Crystal Li₆La₃ZrTaO₁₂Garnet. Journal of the Electrochemical Society, 2018, 165, A3648-A3655.	1.3	172
4	Crystal Structure of Garnet-Related Li-Ion Conductor Li_{7â€“3x}Ga_xLa₃Zr₂O₁₂: Fast Li-Ion Conduction Caused by a Different Cubic Modification?. Chemistry of Materials, 2016, 28, 1861-1871.	3.2	168
5	Substitutional disorder: structure and ion dynamics of the argyrodites Li₆PS₅Cl, Li₆PS₅Br and Li₆PS₅I. Physical Chemistry Chemical Physics, 2019, 21, 8489-8507.	1.3	133
6	DFT Study of the Role of Al³⁺ in the Fast Ion-Conductor Li_{7â€“3x}Al³⁺_xLa₃Zr₂O₁₂ Garnet. Chemistry of Materials, 2014, 26, 2617-2623.	3.2	108
7	Fast Li-Ion-Conducting Garnet-Related Li_{7â€“3x}Fe_xLa₃Zr₂O₁₂ with Uncommon I4̄3d Structure. Chemistry of Materials, 2016, 28, 5943-5951.	3.2	98
8	A microcontact impedance study on NASICON-type Li_{1+x}Al_xTi_{2â˜’x}(PO₄)₃(0 â‰¤ x â‰¤ 0.5) single crystals. Journal of Materials Chemistry A, 2016, 4, 1506-1513.	5.2	97
9	Synthesis, Crystal Chemistry, and Electrochemical Properties of Li_{7â€“2x}La₃Zr_{2â€“x}Mo_xO₁₂ (x = 0.1â€“0.4): Stabilization of the Cubic Garnet Polymorph via Substitution of Zr⁴⁺ by Mo⁶⁺. Inorganic Chemistry, 2015, 54, 10440-10449.	1.9	95
10	A Synthesis and Crystal Chemical Study of the Fast Ion Conductor Li_{7â€“3x}Ga_xLa₃ Zr₂O₁₂ with x = 0.08 to 0.84. Inorganic Chemistry, 2014, 53, 6264-6269.	1.9	93
11	Superionic Diffusion through Frustrated Energy Landscape. CheM, 2019, 5, 2450-2460.	5.8	92
12	The natural critical current density limit for Li₇La₃Zr₂O₁₂ garnets. Journal of Materials Chemistry A, 2020, 8, 15782-15788.	5.2	90
13	Interface Instability of Fe-Stabilized Li₇La₃Zr₂O₁₂ versus Li Metal. Journal of Physical Chemistry C, 2018, 122, 3780-3785.	1.5	83
14	Synthesis and Crystal Chemistry of the Fast Li-Ion Conductor Li₇La₃Zr₂O₁₂ Doped with Fe. Inorganic Chemistry, 2013, 52, 8005-8009.	1.9	71
15	Untangling the Structure and Dynamics of Lithium-Rich Anti-Perovskites Envisaged as Solid Electrolytes for Batteries. Chemistry of Materials, 2018, 30, 8134-8144.	3.2	70
16	Site Occupation of Ga and Al in Stabilized Cubic Li_{7â€“3(x+y)}Ga_xAl_yLa₃Zr₂O₁₂ Garnets As Deduced from ²⁷Al and ⁷¹Ga MAS NMR at Ultrahigh Magnetic Fields. Chemistry of Materials, 2015, 27, 3135-3142.	3.2	65
17	Oxygen Vacancies in Fast Lithium-Ion Conducting Garnets. Chemistry of Materials, 2017, 29, 7189-7196.	3.2	63
18	Ion Dynamics in Solid Electrolytes: NMR Reveals the Elementary Steps of Li⁺ Hopping in the Garnet Li_{6.5}La₃Zr_{1.75}Mo_{0.25}O₁₂. Chemistry of Materials, 2015, 27, 6571-6582.	3.2	60

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19	Solid Electrolytes: Extremely Fast Charge Carriers in Garnetâ€Type Li₆La₃ZrTaO₁₂ Single Crystals. Annalen Der Physik, 2017, 529, 1700140.	0.9	60
20	A single crystal X-ray and powder neutron diffraction study on NASICON-type Li1+Al Ti2â^'(PO4)3 (0Ââ‰ÂxÂâ‰Â0.5) crystals: Implications on ionic conductivity. Solid State Sciences, 2016, 60, 99-107.	1.5	57
21	Synthesis, Crystal Structure, and Stability of Cubic Li_{7â€“x}La₃Zr_{2â€“x}Bi_xO₁₂. Inorganic Chemistry, 2016, 55, 12211-12219.	1.9	48
22	The origin of conductivity variations in Al-stabilized Li7La3Zr2O12 ceramics. Solid State Ionics, 2018, 319, 203-208.	1.3	46
23	Structure and Vibrational Dynamics of NASICON-Type LiTi₂(PO₄)₃. Journal of Physical Chemistry C, 2017, 121, 3697-3706.	1.5	42
24	Bulk and grain-boundary ionic conductivity in sodium zirconophosphosilicate Na3Zr2(SiO4)2PO4 (NASICON). Chemical Physics Letters, 2018, 701, 147-150.	1.2	37
25	Ion dynamics in Al-Stabilized Li7La3Zr2O12 single crystals â€“ Macroscopic transport and the elementary steps of ion hopping. Energy Storage Materials, 2020, 24, 220-228.	9.5	37
26	Relativistic effects in triphenylbismuth and their influence on molecular structure and spectroscopic properties. Physical Chemistry Chemical Physics, 2012, 14, 15520.	1.3	35
27	The Electronic Conductivity of Single Crystalline Gaâ€Stabilized Cubic Li₇La₃Zr₂O₁₂: A Technologically Relevant Parameter for Allâ€Solidâ€State Batteries. Advanced Materials Interfaces, 2020, 7, 2000450.	1.9	33
28	The solubility and site preference of Fe3+ in Li7â^'3Fe La3Zr2O12 garnets. Journal of Solid State Chemistry, 2015, 230, 266-271.	1.4	32
29	Producing High Concentrations of Hydrogen in Palladium via Electrochemical Insertion from Aqueous and Solid Electrolytes. Chemistry of Materials, 2019, 31, 4234-4245.	3.2	32
30	Low-temperature synthesis of CuFeO2 (delafossite) at 70 Â°C: A new process solely by precipitation and ageing. Journal of Solid State Chemistry, 2016, 233, 390-396.	1.4	31
31	Local Li-ion conductivity changes within Al stabilized Li₇La₃Zr₂O₁₂ and their relationship to three-dimensional variations of the bulk composition. Journal of Materials Chemistry A, 2019, 7, 6818-6831.	5.2	30
32	Nuclear Spin Relaxation in Nanocrystalline Î²-Li₃PS₄ Reveals Low-Dimensional Li Diffusion in an Isotropic Matrix. Chemistry of Materials, 2018, 30, 7575-7586.	3.2	29
33	Crystal chemistry of "Li7 La3 Zr2 O12" garnet doped with Al, Ga, and Fe: a short review on local structures as revealed by NMR and MÃ¶ÃŸbauer spectroscopy studies. European Journal of Mineralogy, 2016, 28, 619-629.	0.4	24
34	Highly Conductive Garnet-Type Electrolytes: Access to Li_{6.5}La₃Zr_{1.5}Ta_{0.5}O₁₂ Prepared by Molten Salt and Solid-State Methods. ACS Applied Materials & Interfaces, 2020, 12, 48580-48590.	4.0	24
35	Purification of heavy metal loaded wastewater from electroplating industry under synthesis of delafossite (ABO2) by â€œLt-delafossite processâ€. Water Research, 2016, 100, 98-104.	5.3	22
36	Fast Na ion transport triggered by rapid ion exchange on local length scales. Scientific Reports, 2018, 8, 11970.	1.6	22

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37	Early diagenetic quartz formation at a deep iron oxidation front in the Eastern Equatorial Pacific â€“ A modern analogue for banded iron/chert formations?. Geochimica Et Cosmochimica Acta, 2014, 137, 188-207.	1.6	20
38	Microelectrodes for local conductivity and degradation measurements on Al stabilized Li7La3Zr2O12 garnets. Journal of Electroceramics, 2017, 38, 176-181.	0.8	18
39	Lithium ion dynamics in LiZr₂(PO₄)₃ and Li_{1.4}Ca_{0.2}Zr_{1.8}(PO₄)₃. Dalton Transactions, 2019, 48, 9376-9387.	1.6	17
40	Proton Bulk Diffusion in Cubic Li₇La₃Zr₂O₁₂ Garnets as Probed by Single X-ray Diffraction. Journal of Physical Chemistry C, 2019, 123, 1094-1098.	1.5	17
41	Investigating the electrochemical stability of Li₇La₃Zr₂O₁₂ solid electrolytes using field stress experiments. Journal of Materials Chemistry A, 2021, 9, 15226-15237.	5.2	17
42	Arrhenius Behavior of the Bulk Na-Ion Conductivity in Na₃Sc₂(PO₄)₃ Single Crystals Observed by Microcontact Impedance Spectroscopy. Chemistry of Materials, 2018, 30, 1776-1781.	3.2	16
43	Blacklight sintering of ceramics. Materials Horizons, 2022, 9, 1717-1726.	6.4	15
44	Dislocations in ceramic electrolytes for solid-state Li batteries. Scientific Reports, 2021, 11, 8949.	1.6	14
45	Wet-Environment-Induced Structural Alterations in Single- and Polycrystalline LLZTO Solid Electrolytes Studied by Diffraction Techniques. ACS Applied Materials & Interfaces, 2021, 13, 350-359.	4.0	14
46	Role of Filler Content and Morphology in LLZO/PEO Membranes. Frontiers in Energy Research, 2021, 9, .	1.2	11
47	Lowering the Interfacial Resistance in Li6.4La3Zr1.4Ta0.6O12|Poly(Ethylene Oxide) Composite Electrolytes. Cell Reports Physical Science, 2020, 1, 100214.	2.8	10
48	Facile synthesis of Al-stabilized lithium garnets by a solution-combustion technique for all solid-state batteries. Materials Advances, 2021, 2, 5181-5188.	2.6	10
49	Anomalies in Bulk Ion Transport in the Solid Solutions of Li₇La₃M₂O₁₂ (M = Hf, Sn) and Li₅La₃Ta₂O₁₂. Journal of Physical Chemistry C, 2020, 124, 16796-16805.	1.5	9
50	Water as a monomer: synthesis of an aliphatic polyethersulfone from divinyl sulfone and water. Chemical Science, 2022, 13, 6920-6928.	3.7	8
51	One Step Closer to Realizing Solid-State Batteries with Cubic Li7La3Zr2O12 Garnets. CheM, 2019, 5, 1695-1696.	5.8	7
52	Apparatus for operando x-ray diffraction of fuel electrodes in high temperature solid oxide electrochemical cells. Review of Scientific Instruments, 2019, 90, 023910.	0.6	6
53	Spatially resolved stoichiometry determination of Li₇La₃Zr₂O₁₂ solid-state electrolytes using LA-ICP-OES. Journal of Analytical Atomic Spectrometry, 2020, 35, 972-983.	1.6	6
54	Single-crystal neutron and X-ray diffraction study of garnet-type solid-state electrolyte Li₆La₃ZrTaO₁₂: an in situ temperature-dependence investigation (2.5 â‰¤ T â‰¤ 873â€…K). Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials, 2021, 77, 123-130.	0.5	6

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55	Aging Behavior of Al- and Ga- Stabilized Li7La3Zr2O12 Garnet-Type, Solid-State Electrolyte Based on Powder and Single Crystal X-ray Diffraction. Crystals, 2021, 11, 721.	1.0	5
56	On the dependence of ionic transport on crystal orientation in NaSICON-type solid electrolytes. JPhys Energy, 2020, 2, 035003.	2.3	4
57	Deep hydration of an Li_{7â€“3x}La₃Zr₂ M ^{III} _xO₁₂ solid-state electrolyte material: a case study on Al- and Ga-stabilized LLZO. Acta Crystallographica Section C, Structural Chemistry, 2022, 78, 1-6.	0.2	4
58	Study on the structural phase transitions in NaSICON-type compounds using Ag₃Sc₂(PO₄)₃ as a model system. Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials, 2021, 77, 10-22.	0.5	2
59	1. Lithium ionâ€“conducting oxide garnets. , 2017, , 3-22.		1
60	Lithium-Ion Transport in Nanocrystalline Spinel-Type Li[InxLiy]Br4 as Seen by Conductivity Spectroscopy and NMR. Frontiers in Chemistry, 2020, 8, 100.	1.8	1
61	Fast Na Ion Transport Triggered By Rapid Ion Exchange on Local Length Scales. SSRN Electronic Journal, 0, , .	0.4	1
62	Synthesis of Li₇La₃Zr₂O₁₂ Li-Ion Conducting Electrolytes By a Rapid Solution-Combustion Method. ECS Meeting Abstracts, 2020, MA2020-02, 941-941.	0.0	1
63	On the Dependence of Ionic Transport on Crystal Orientation in Nasicon-Type Solid Electrolytes. ECS Meeting Abstracts, 2020, MA2020-02, 946-946.	0.0	1
64	Editorial for the JECR special issue on all solid-state batteries. Journal of Electroceramics, 2017, 38, 125-127.	0.8	0
65	Lithiumâ€Festelektrolyte fÃ¼r Energiespeicher. Nachrichten Aus Der Chemie, 2018, 66, 499-504.	0.0	0
66	An Operando calorimeter for high temperature electrochemical cells. JPhys Energy, 2021, 3, 034007.	2.3	0
67	Enabling High-Rate Plating in Solid-State Li Batteries By Interface Engineering and Pulse Plating. ECS Meeting Abstracts, 2021, MA2021-01, 434-434.	0.0	0
68	Co3+/La3+ Cross-Diffusion at the Li7La3Zr2O12 | LiCoO2 Interface. ECS Meeting Abstracts, 2021, MA2021-01, 436-436.	0.0	0
69	(Invited) Cation Transport across Interfaces in Solid-State Li Batteries. ECS Meeting Abstracts, 2021, MA2021-01, 154-154.	0.0	0
70	High-Performance Composite Polymer Electrolyte Membranes for Solid-State Lithium-Metal Batteries. ECS Meeting Abstracts, 2021, MA2021-01, 433-433.	0.0	0
71	Criteria for Lithium â€œDendriteâ€•Propagation Evaluated in Single Crystal Solid Electrolytes. ECS Meeting Abstracts, 2018, , .	0.0	0
72	Degradation of Li-Oxide Garnets in Humidity, Air and Aqueous Solutions: A Study Using a Large Li6.4La3ZrTaO12 Single Crystal. ECS Meeting Abstracts, 2018, , .	0.0	0

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73	Ion Dynamics in Al-Doped Cubic Li7La3Zr2O12 Garnet-Type Single Crystals. ECS Meeting Abstracts, 2018, , .	0.0	0
74	Go in and Go out â€" Change in Local Structure and Diffusivity in Monoclinic Li3+X V2(PO4)3 upon Li Insertion and Extraction. ECS Meeting Abstracts, 2018, , .	0.0	0
75	Very High Lithium Diffusion in LiTi2(PS4)3 through Energy Landscape Frustration. ECS Meeting Abstracts, 2020, MA2020-01, 79-79.	0.0	0
76	Lowering the Interfacial Resistance in LLZTO:PEO Electrolytes By Covalent Surface Modifications. ECS Meeting Abstracts, 2020, MA2020-02, 962-962.	0.0	0