Donald R Sadoway

List of Publications by Year
in descending order

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114 papers	7,922 citations	46918 47 h-index	49773 87 g-index
120 all docs	120 docs citations	120 times ranked	6815 citing authors

#	Article	IF	Citations
1	Identification of cathode materials for lithium batteries guided by first-principles calculations. Nature, 1998, 392, 694-696.	13.7	760
2	TEM Study of Electrochemical Cyclingâ€Induced Damage and Disorder in LiCoO2 Cathodes for Rechargeable Lithium Batteries. Journal of the Electrochemical Society, 1999, 146, 473-480.	1.3	613
3	Liquid Metal Batteries: Past, Present, and Future. Chemical Reviews, 2013, 113, 2075-2099.	23.0	413
4	Lithiumâ€“antimonyâ€“lead liquid metal battery for grid-level energy storage. Nature, 2014, 514, 348-350.	13.7	351
5	Rubbery Block Copolymer Electrolytes for Solidâ€State Rechargeable Lithium Batteries. Journal of the Electrochemical Society, 1999, 146, 32-37.	1.3	293
6	Capture and electrochemical conversion of CO2 to value-added carbon and oxygen by molten salt electrolysis. Energy and Environmental Science, 2013, 6, 1538.	15.6	262
7	Magnesiumâ€“Antimony Liquid Metal Battery for Stationary Energy Storage. Journal of the American Chemical Society, 2012, 134, 1895-1897.	6.6	250
8	Solid polymer electrolytes incorporating cubic Li7La3Zr2O12 for all-solid-state lithium rechargeable batteries. Electrochimica Acta, 2017, 258, 1106-1114.	2.6	193
9	Melt-Formable Block Copolymer Electrolytes for Lithium Rechargeable Batteries. Journal of the Electrochemical Society, 2001, 148, A537.	1.3	187
10	A new anode material for oxygen evolution in molten oxide electrolysis. Nature, 2013, 497, 353-356.	13.7	186
11	LiAl y Co1â€‰â^'â€‰y â€‰Oâ€‰2 â€‰(â€‰â€‰Râ€‰3Ì„mâ€‰)â€‰ Intercalation Cathode for Rechargeable Lithium Batteries. Electrochemical Society, 1999, 146, 862-868.	1.3	173
12	Inert anodes for the Hall-HÃ©roult cell: The ultimate materials challenge. Jom, 2001, 53, 34-35.	0.9	155
13	Self-healing Liâ€“Bi liquid metal battery for grid-scale energy storage. Journal of Power Sources, 2015, 275, 370-376.	4.0	149
14	Liquid Metal Electrodes for Energy Storage Batteries. Advanced Energy Materials, 2016, 6, 1600483.	10.2	139
15	Effect of Counter Ion Placement on Conductivity in Single-Ion Conducting Block Copolymer Electrolytes. Journal of the Electrochemical Society, 2005, 152, A158.	1.3	135
16	Electrochemical Cyclingâ€Induced Spinel Formation in Highâ€Chargeâ€Capacity Orthorhombic LiMnO2. Journal of the Electrochemical Society, 1999, 146, 3217-3223.	1.3	125
17	Self-doped block copolymer electrolytes for solid-state, rechargeable lithium batteries. Journal of Power Sources, 2001, 97-98, 621-623.	4.0	116
18	Calcium-based multi-element chemistry for grid-scale electrochemical energy storage. Nature Communications, 2016, 7, 10999.	5.8	113

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19	Oriented silver oxidenanostructures synthesized through a template-free electrochemical route. Journal of Materials Chemistry, 2011, 21, 432-438.	6.7	103
20	Production of Oxygen Gas and Liquid Metal by Electrochemical Decomposition of Molten Iron Oxide. Journal of the Electrochemical Society, 2011, 158, E51.	1.3	101
21	A thermochemical analysis of the production of anhydrous MgCl2. Journal of Light Metals, 2001, 1, 111-117.	0.8	100
22	Calciumâ€“bismuth electrodes for large-scale energy storage (liquid metal batteries). Journal of Power Sources, 2013, 241, 239-248.	4.0	99
23	Block and graft copolymer electrolytes for high-performance, solid-state, lithium batteries. Journal of Power Sources, 2004, 129, 1-3.	4.0	98
24	Electrical Resistivities of Monocrystalline and Polycrystalline TiB2. Journal of the American Ceramic Society, 1984, 67, 705-708.	1.9	94
25	Rubbery Graft Copolymer Electrolytes for Solid-State, Thin-Film Lithium Batteries. Journal of the Electrochemical Society, 2005, 152, A1.	1.3	89
26	Electrolysis of Molten Iron Oxide with an Iridium Anode: The Role of Electrolyte Basicity. Journal of the Electrochemical Society, 2011, 158, E101.	1.3	87
27	Single-ion conducting polymerâ€“silicate nanocomposite electrolytes for lithium battery applications. Electrochimica Acta, 2005, 50, 2125-2134.	2.6	84
28	New opportunities for metals extraction and waste treatment by electrochemical processing in molten salts. Journal of Materials Research, 1995, 10, 487-492.	1.2	80
29	Block Copolymer Electrolytes Synthesized by Atom Transfer Radical Polymerization for Solid-State, Thin-Film Lithium Batteries. Electrochemical and Solid-State Letters, 2002, 5, A85.	2.2	80
30	Graft copolymer-based lithium-ion battery for high-temperature operation. Journal of Power Sources, 2011, 196, 5604-5610.	4.0	73
31	Anisotropic Structure and Transport in Self-Assembled Layered Polymerâ”Clay Nanocomposites. Langmuir, 2007, 23, 8515-8521.	1.6	70
32	Electrodeposition of crystalline silicon films from silicon dioxide for low-cost photovoltaic applications. Nature Communications, 2019, 10, 5772.	5.8	70
33	Electron microscopic characterization of electrochemically cycled LiCoO2 and Li(Al,Co)O2 battery cathodes. Journal of Power Sources, 1999, 81-82, 594-598.	4.0	67
34	Metallothermic reduction as an electronically mediated reaction. Journal of Materials Research, 1998, 13, 3372-3377.	1.2	66
35	Electrochemical deoxidation of yttrium-oxygen solid solutions. Journal of Alloys and Compounds, 1996, 237, 150-154.	2.8	65
36	Title is missing!. Journal of Applied Electrochemistry, 1998, 28, 1365-1369.	1.5	65

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37	Synthesis and characterization of LiAlyCo1â^'yO2 and LiAlyNi1â^'yO2. Journal of Power Sources, 1999, 81-82, 589-593.	4.0	64
38	Synthesis of LiCoO2 by Decomposition and Intercalation of Hydroxides. Journal of the Electrochemical Society, 1998, 145, 887-891.	1.3	62
39	Faradaically selective membrane for liquid metal displacement batteries. Nature Energy, 2018, 3, 127-131.	19.8	60
40	A high-accuracy, calibration-free technique for measuring the electrical conductivity of liquids. Review of Scientific Instruments, 1998, 69, 3308-3313.	0.6	59
41	Mixing in a liquid metal electrode. Physics of Fluids, 2014, 26, .	1.6	59
42	Calcium-Antimony Alloys as Electrodes for Liquid Metal Batteries. Journal of the Electrochemical Society, 2014, 161, A1898-A1904.	1.3	54
43	Thermodynamic properties of calciumâ€“bismuth alloys determined by emf measurements. Electrochimica Acta, 2012, 60, 154-162.	2.6	52
44	Determination and modeling of the thermodynamic properties of liquid calciumâ€“antimony alloys. Electrochimica Acta, 2012, 76, 8-15.	2.6	52
45	Solâ^'Gel Synthesis of Vanadium Oxide within a Block Copolymer Matrix. Chemistry of Materials, 2006, 18, 2828-2833.	3.2	51
46	Thermodynamic properties of calciumâ€“magnesium alloys determined by emf measurements. Electrochimica Acta, 2013, 91, 293-301.	2.6	49
47	Block Copolymer-Templated Nanocomposite Electrodes for Rechargeable Lithium Batteries. Journal of the Electrochemical Society, 2002, 149, A1610.	1.3	48
48	Electrolysis of a molten semiconductor. Nature Communications, 2016, 7, 12584.	5.8	47
49	Direct Electrolysis of Molten Lunar Regolith for the Production of Oxygen and Metals on the Moon. ECS Transactions, 2010, 28, 367-373.	0.3	46
50	Toward new technologies for the production of lithium. Jom, 1998, 50, 24-26.	0.9	45
51	Portable Power: Advanced Rechargeable Lithium Batteries. MRS Bulletin, 2002, 27, 590-596.	1.7	42
52	The eelectrochemical processing of refractory metals. Jom, 1991, 43, 15-19.	0.9	40
53	Magnetic characterization of Î»-MnO2 and Li2Mn2O4 prepared by electrochemical cycling of LiMn2O4. Journal of Applied Physics, 2000, 87, 7382-7388.	1.1	40
54	Electrochemical growth of a corrosion-resistant multi-layer scale to enable an oxygen-evolution inert anode in molten carbonate. Electrochimica Acta, 2018, 279, 250-257.	2.6	40

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55	Electrochemically controlled transport of lithium through ultrathin SiO2. Journal of Applied Physics, 2005, 98, 023516.	1.1	39
56	All-Solid-State Lithium Battery Fitted with Polymer Electrolyte Enhanced by Solid Plasticizer and Conductive Ceramic Filler. Journal of the Electrochemical Society, 2018, 165, A3558-A3565.	1.3	39
57	The double-walled nature of TiO 2 nanotubes and formation of tube-in-tube structures â€“ a characterization of different tube morphologies. Electrochimica Acta, 2017, 231, 721-731.	2.6	38
58	Design and Testing of an Impedance-Based Sensor for Monitoring Drug Delivery. Journal of the Electrochemical Society, 2005, 152, H6.	1.3	37
59	Low-Temperature Molten Salt Electrolytes for Membrane-Free Sodium Metal Batteries. Journal of the Electrochemical Society, 2015, 162, A2729-A2736.	1.3	34
60	Electrical Conductivity Measurements of Molten Alkalineâ€Earth Fluorides. Journal of the Electrochemical Society, 1992, 139, 1027-1033.	1.3	33
61	Transference number measurements of TiO2â€“BaO melts by stepped-potential chronoamperometry. Electrochimica Acta, 2001, 46, 3351-3358.	2.6	32
62	Synthesis and Characterization of Single-Ion Graft Copolymer Electrolytes. Journal of the Electrochemical Society, 2005, 152, A2281.	1.3	32
63	Electrochemical Determination of the Thermodynamic Properties of Lithium-Antimony Alloys. Journal of the Electrochemical Society, 2015, 162, A421-A425.	1.3	32
64	A borate decorated anion-immobilized solid polymer electrolyte for dendrite-free, long-life Li metal batteries. Journal of Materials Chemistry A, 2019, 7, 19970-19976.	5.2	32
65	Recycling ZnTe, CdTe, and Other Compound Semiconductors by Ambipolar Electrolysis. Journal of the American Chemical Society, 2011, 133, 19971-19975.	6.6	31
66	Application of the Molecular Interaction Volume Model (MIVM) to Calcium-Based Liquid Alloys of Systems Forming High-Melting Intermetallics. Journal of the American Chemical Society, 2013, 135, 8260-8265.	6.6	31
67	A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1997, 28, 1141-1149.	1.0	28
68	Synthesis of nanoscale particles of Ta and Nb₃Al by homogeneous reduction in liquid ammonia. Journal of Materials Research, 2001, 16, 2544-2549.	1.2	27
69	Liquidâ€Tinâ€Assisted Molten Salt Electrodeposition of Photoresponsive nâ€Type Silicon Films. Advanced Functional Materials, 2018, 28, 1703551.	7.8	27
70	Integration of Information Literacy Components into a Large First-Year Lecture-Based Chemistry Course. Journal of Chemical Education, 2012, 89, 487-491.	1.1	25
71	Positive current collector for Li||Sb-Pb liquid metal battery. Journal of Power Sources, 2017, 357, 158-163.	4.0	25
72	High energy density, thin-film, rechargeable lithium batteries for marine field operations. Journal of Power Sources, 2001, 97-98, 674-676.	4.0	23

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73	Numerical simulation of mass transfer enhancement in liquid metal batteries by means of electro-vortex flow. Journal of Power Sources Advances, 2020, 1, 100004.	2.6	23
74	Modeling discontinuous potential distributions using the finite volume method, and application to liquid metal batteries. Electrochimica Acta, 2019, 318, 857-864.	2.6	22
75	Liquid metal battery storage in an offshore wind turbine: Concept and economic analysis. Renewable and Sustainable Energy Reviews, 2021, 149, 111387.	8.2	21
76	The electrodeposition of improved molybdenum coatings from molten salts by the use of electrolyte additives. Journal of Applied Electrochemistry, 1988, 18, 823-830.	1.5	19
77	Raman spectroscopic investigation of alkali-metal hexachloro compounds of refractory metals. Inorganic Chemistry, 1985, 24, 3881-3884.	1.9	18
78	Electrochemical Synthesis of Diamondlike Carbon Films. Journal of the Electrochemical Society, 2008, 155, E49.	1.3	18
79	Charge-Transfer Kinetics of Alloying in Mg-Sb and Li-Bi Liquid Metal Electrodes. Journal of the Electrochemical Society, 2017, 164, A2665-A2669.	1.3	18
80	Microstructure Effects on the Electrochemical Kinetics of Vanadium Pentoxide Thin-Film Cathodes. Journal of the Electrochemical Society, 2006, 153, A1372.	1.3	17
81	Magnetic characterization of orthorhombic LiMnO2 and electrochemically transformed spinel LixMnO2 (x<1). Journal of Physics and Chemistry of Solids, 2003, 64, 2525-2533.	1.9	14
82	Communicationâ€"Molten Amide-Hydroxide-Iodide Electrolyte for a Low-Temperature Sodium-Based Liquid Metal Battery. Journal of the Electrochemical Society, 2017, 164, A535-A537.	1.3	14
83	Cell voltage model for Li-Bi liquid metal batteries. Applied Energy, 2022, 309, 118331.	5.1	14
84	Stability of Iridium Anode in Molten Oxide Electrolysis for Ironmaking: Influence of Slag Basicity. ECS Transactions, 2010, 33, 219-230.	0.3	11
85	The synthesis and properties of the hexachloroniobates and hexachlorotantalates of Na, K, Rb, and Cs. Canadian Journal of Chemistry, 1978, 56, 2013-2018.	0.6	10
86	Relative Dielectric Constant Measurements in the Butyronitrileâ€€hloroethane System at Subambient Temperatures. Journal of the Electrochemical Society, 1997, 144, 2392-2398.	1.3	10
87	Polarization in Cells Containing Single-Ion Graft Copolymer Electrolytes. Journal of the Electrochemical Society, 2006, 153, A1098.	1.3	10
88	Electrochemical Characterization of Vanadium Oxide Nanostructured Electrode. Journal of the Electrochemical Society, 2008, 155, A488.	1.3	10
89	Thermodynamic properties of the alkali metal hexachloroniobate and hexachlorotantalate compounds by vapour pressure measurements. Canadian Journal of Chemistry, 1978, 56, 2538-2545.	0.6	9
90	On binaryP-T phase diagrams. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1983, 14, 231-237.	0.5	9

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91	Copper sulfate reference electrode. Journal of Electroanalytical Chemistry, 2011, 659, 143-150.	1.9	9
92	E-logpO2 diagrams for ironmaking by molten oxide electrolysis. Electrochimica Acta, 2017, 247, 1088-1094.	2.6	8
93	Self-discharge mitigation in a liquid metal displacement battery. Journal of Energy Chemistry, 2022, 66, 390-396.	7.1	6
94	A new experimental technique for the study of turbulent electromagnetically driven flows. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1980, 11, 334-336.	0.5	4
95	Densities in the Liquid Hydrogen Chloride Solvent System. The Journal of Physical Chemistry, 1996, 100, 5956-5963.	2.9	4
96	Charge Asymmetrical Ternary Molten Salt Systems: Theory of Dilute Solutions. Journal of the Electrochemical Society, 1975, 122, 515-520.	1.3	3
97	Large introductory science courses & digital libraries. , 2005, , .		3
98	Phase Separation Kinetics in Immiscible Liquids. Materials Research Society Symposia Proceedings, 1986, 87, 281.	0.1	2
99	Super ionic conduction in alkali metal hexachloro niobates and tantalates. Solid State Ionics, 1988, 28-30, 271-275.	1.3	2
100	Metallurgical Electrochemistry: The Interface between Materials Science and Molten Salt Chemistry. Materials Science Forum, 1991, 73-75, 555-560.	0.3	2
101	Phase Diagram of Butyronitrileâ^'Chloroethane Determined by Differential Thermal Analysis. The Journal of Physical Chemistry, 1996, 100, 19628-19631.	2.9	2
102	Cross-disciplinary molecular science education in introductory science courses. , 2008, , .		2
103	Quantitative determination of tantalum in niobium by neutron activation analysis. Canadian Journal of Chemistry, 1980, 58, 537-538.	0.6	1
104	Electrical conductivity and thermal stability measurements of a mixed perovskite oxide system. Journal of Applied Physics, 1982, 53, 3686-3689.	1.1	1
105	Approaches to an Integrated Undergraduate Education in Materials Science and Engineering. Materials Research Society Symposia Proceedings, 1985, 66, 3.	0.1	1
106	The Use of Molten Salts as Physical Models for the Study of Solidification in Metals and Semiconductors. Materials Research Society Symposia Proceedings, 1986, 87, 173.	0.1	1
107	Phase diagram studies of the systems KCl-K3MoCl6 and LiCl-K3MoCl6. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1986, 17, 231-232.	0.5	1
108	Use of MatML with software applications for e-learning. , 2004, , .		1

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109	NSF NSDL Materials Digital Library & MSE Education. Materials Research Society Symposia Proceedings, 2005, 909, 1.	0.1	1
110	Electrical Conductivity Measurements of Molten Alkaline-Earth Fluorides. ECS Proceedings Volumes, 1990, 1990-17, 174-178.	0.1	0
111	MatDL.org: The Materials Digital Library and the National Science Digital Library Program. Materials Research Society Symposia Proceedings, 2004, 827, 231.	0.1	0
112	Instruction Online: Core Components for Re-Use. ACS Symposium Series, 2010, , 235-262.	0.5	0
113	Solid-state Graft Copolymer Electrolytes for Lithium Battery Applications. Journal of Visualized Experiments, 2013, , .	0.2	0
114	Towards a design tool for self-heated cells producing liquid metal by electrolysis. , 2011, , 387-392.		0