JÃ¼rgen Fleig

List of Publications by Year
in descending order

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80	4,645	101543	98798
papers	citations	36	67
		h-index	g-index

80	80	80	4161
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Solid Oxide Fuel Cell Cathodes: Polarization Mechanisms and Modeling of the Electrochemical Performance. Annual Review of Materials Research, 2003, 33, 361-382.	9.3	403
2	Chemical Heterogeneities on La_{0.6}Sr_{0.4}CoO_{3â^'Î´} Thin Filmsâ€"Correlations to Cathode Surface Activity and Stability. Chemistry of Materials, 2012, 24, 1116-1127.	6.7	284
3	Structural and Electrochemical Consequences of Al and Ga Cosubstitution in Li₇La₃Zr₂O₁₂ Solid Electrolytes. Chemistry of Materials, 2016, 28, 2384-2392.	6.7	258
4	Tensile Lattice Strain Accelerates Oxygen Surface Exchange and Diffusion in La_{1â€"x}Sr_xCoO_{3â^'Î´} Thin Films. ACS Nano, 2013, 7, 3276-3286.	14.6	211
5	Space charge conduction: Simple analytical solutions for ionic and mixed conductors and application to nanocrystalline ceria. Physical Chemistry Chemical Physics, 2003, 5, 2268-2273.	2.8	154
6	Real-time impedance monitoring of oxygen reduction during surface modification of thinÂfilmÂcathodes. Nature Materials, 2017, 16, 640-645.	27.5	146
7	Optimized La_{0.6}Sr_{0.4}CoO_{3â€"Î´} Thinâ€Film Electrodes with Extremely Fast Oxygenâ€Reduction Kinetics. Advanced Functional Materials, 2009, 19, 3151-3156.	14.9	133
8	Ambient Pressure XPS Study of Mixed Conducting Perovskite-Type SOFC Cathode and Anode Materials under Well-Defined Electrochemical Polarization. Journal of Physical Chemistry C, 2016, 120, 1461-1471.	3.1	132
9	Microcontact Impedance Spectroscopy at Single Grain Boundaries in Feâ€Doped SrTiO₃ Polycrystals. Journal of the American Ceramic Society, 2001, 84, 521-530.	3.8	126
10	Mechanisms of Performance Degradation of (La,Sr)(Co,Fe)O_{3-Î´}Solid Oxide Fuel Cell Cathodes. Journal of the Electrochemical Society, 2016, 163, F581-F585.	2.9	118
11	Enhancing Electrochemical Waterâ€Splitting Kinetics by Polarizationâ€Driven Formation of Nearâ€Surface Iron(0): An Inâ€…Situ XPS Study on Perovskiteâ€Type Electrodes. Angewandte Chemie - International Edition, 2015, 54, 2628-2632.	13.8	110
12	Surface Chemistry of Perovskite-Type Electrodes During High Temperature CO₂ Electrolysis Investigated by Operando Photoelectron Spectroscopy. ACS Applied Materials & Interfaces, 2017, 9, 35847-35860.	8.0	107
13	Finiteâ€Element Calculations on the Impedance of Electroceramics with Highly Resistive Grain Boundaries: I, Laterally Inhomogeneous Grain Boundaries. Journal of the American Ceramic Society, 1999, 82, 3485-3493.	3.8	105
14	Cation diffusion in La0.6Sr0.4CoO3â^'Î´ below 800 Â°C and its relevance for Sr segregation. Physical Chemistry Chemical Physics, 2014, 16, 2715.	2.8	104
15	Electrical and Structural Characterization of a Lowâ€Angle Tilt Grain Boundary in Ironâ€Doped Strontium Titanate. Journal of the American Ceramic Society, 2003, 86, 922-928.	3.8	103
16	On the currentâ€"voltage characteristics of charge transfer reactions at mixed conducting electrodes on solid electrolytes. Physical Chemistry Chemical Physics, 2005, 7, 2027-2037.	2.8	102
17	Surface chemistry of La_{0.6}Sr_{0.4}CoO_{3â^'Î´} thin films and its impact on the oxygen surface exchange resistance. Journal of Materials Chemistry A, 2015, 3, 22759-22769.	10.3	102
18	Fast Li-Ion-Conducting Garnet-Related Li_{7â€"3x}Fe_xLa₃Zr₂O₁₂ with Uncommon I4Ì…3d Structure. Chemistry of Materials, 2016, 28, 5943-5951.	6.7	98

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19	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.	4.0	95
20	Fast oxygen exchange and diffusion kinetics of grain boundaries in Sr-doped LaMnO₃thin films. Physical Chemistry Chemical Physics, 2015, 17, 7659-7669.	2.8	92
21	Investigation of O2 reduction on Pt/YSZ by means of thin film microelectrodes: The geometry dependence of the electrode impedance. Solid State Ionics, 2010, 181, 684-693.	2.7	88
22	A novel ToF-SIMS operation mode for sub 100nm lateral resolution: Application and performance. Applied Surface Science, 2014, 289, 407-416.	6.1	81
23	Resistance Degradation of Ironâ€Doped Strontium Titanate Investigated by Spatially Resolved Conductivity Measurements. Journal of the American Ceramic Society, 2000, 83, 1969-1976.	3.8	80
24	Dislocations Accelerate Oxygen Ion Diffusion in La_{0.8}Sr_{0.2}MnO₃ Epitaxial Thin Films. ACS Nano, 2017, 11, 11475-11487.	14.6	80
25	The Effect of Acceptor and Donor Doping on Oxygen Vacancy Concentrations in Lead Zirconate Titanate (PZT). Materials, 2016, 9, 945.	2.9	66
26	SrTiO₃: A Model Electroceramic. International Journal of Materials Research, 2003, 94, 218-225.	0.8	65
27	The Chemical Evolution of the La0.6Sr0.4CoO3â^Î´ Surface Under SOFC Operating Conditions and Its Implications for Electrochemical Oxygen Exchange Activity. Topics in Catalysis, 2018, 61, 2129-2141.	2.8	65
28	Electrical resistance of low-angle tilt grain boundaries in acceptor-doped SrTiO3 as a function of misorientation angle. Journal of Applied Physics, 2005, 97, 053502.	2.5	63
29	Oxygen Vacancies in Fast Lithium-Ion Conducting Garnets. Chemistry of Materials, 2017, 29, 7189-7196.	6.7	63
30	A novel ToF-SIMS operation mode for improved accuracy and lateral resolution of oxygen isotope measurements on oxides. Journal of Analytical Atomic Spectrometry, 2013, 28, 1080.	3.0	58
31	Investigation of the oxygen exchange mechanism on Pt|yttria stabilized zirconia at intermediate temperatures: Surface path versus bulk path. Electrochimica Acta, 2011, 56, 9727-9740.	5.2	47
32	Understanding electrochemical switchability of perovskite-type exsolution catalysts. Nature Communications, 2020, 11, 4801.	12.8	46
33	The Electrochemical Properties of Sr(Ti,Fe)O_{3-Î´}for Anodes in Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2017, 164, F364-F371.	2.9	41
34	Voltage and partial pressure dependent defect chemistry in (La,Sr)FeO_{3â^Î´} thin films investigated by chemical capacitance measurements. Physical Chemistry Chemical Physics, 2018, 20, 12016-12026.	2.8	41
35	Microcontact impedance measurements of individual highly conductive grain boundaries: General aspects and application to AgCl. Physical Chemistry Chemical Physics, 1999, 1, 3315-3320.	2.8	39
36	Visualization of oxygen reduction sites at Pt electrodes on YSZ by means of 18O tracer incorporation: the width of the electrochemically active zone. Physical Chemistry Chemical Physics, 2010, 12, 12734.	2.8	38

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37	Comparison of Electrochemical Properties of La_{0.6}Sr_{0.4}FeO_{3-Î´}Thin Film Electrodes: Oxidizing vs. Reducing Conditions. Journal of the Electrochemical Society, 2015, 162, F317-F326.	2.9	38
38	The Superior Properties of La_{0.6}Ba_{0.4}CoO_{3-Î´}Thin Film Electrodes for Oxygen Exchange in Comparison to La_{0.6}Sr_{0.4}CoO_{3-Î´}. Journal of the Electrochemical Society, 2016, 163, F564-F573.	2.9	36
39	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.	10.3	30
40	The Relation of Microstructure, Materials Properties and Impedance of SOFC Electrodes: A Case Study of Ni/GDC Anodes. Energies, 2020, 13, 987.	3.1	30
41	Thin film cathodes in SOFC research: How to identify oxygen reduction pathways?. Journal of Materials Research, 2013, 28, 2085-2105.	2.6	28
42	Electrochemical properties of La0.6Sr0.4CoO3â^'Î´ thin films investigated by complementary impedance spectroscopy and isotope exchange depth profiling. Solid State Ionics, 2014, 256, 38-44.	2.7	28
43	Electrochemical XPS investigation of metal exsolution on SOFC electrodes: Controlling the electrode oxygen partial pressure in ultra-high-vacuum. Surface Science, 2019, 680, 43-51.	1.9	28
44	How To Get Mechanistic Information from Partial Pressure-Dependent Currentâ€“Voltage Measurements of Oxygen Exchange on Mixed Conducting Electrodes. Chemistry of Materials, 2018, 30, 4242-4252.	6.7	27
45	Water-Induced Decoupling of Tracer and Electrochemical Oxygen Exchange Kinetics on Mixed Conducting Electrodes. Journal of Physical Chemistry Letters, 2016, 7, 2826-2831.	4.6	24
46	Oxide Ion Transport in Donor-Doped Pb(ZrxTi1â^'x)O3: The Role of Grain Boundaries. Journal of the American Ceramic Society, 2011, 94, 1173-1181.	3.8	22
47	Electronic and Ionic Conductivity of La_{0.95}Sr_{0.05}Ga_{0.95}Mg_{0.05}O_{3-Î´}(LSGM) Single Crystals. Journal of the Electrochemical Society, 2016, 163, F1189-F1197.	2.9	22
48	A solid oxide photoelectrochemical cell with UV light-driven oxygen storage in mixed conducting electrodes. Journal of Materials Chemistry A, 2017, 5, 1637-1649.	10.3	21
49	Investigating oxygen reduction pathways on pristine SOFC cathode surfaces by in situ PLD impedance spectroscopy. Journal of Materials Chemistry A, 2022, 10, 2305-2319.	10.3	20
50	Water-Gas Shift and Methane Reactivity on Reducible Perovskite-Type Oxides. Journal of Physical Chemistry C, 2015, 119, 11739-11753.	3.1	19
51	In Situ Impedance Analysis of Oxygen Exchange on Growing La_{0.6}Sr_{0.4}CoO_{3â^'Î´} Thin Films. ACS Applied Energy Materials, 2018, 1, 4522-4535.	5.1	19
52	Local Conductivity of Nitrogen-Graded Zirconia. Journal of the American Ceramic Society, 2005, 88, 3067-3074.	3.8	18
53	Oxide Ion Transport in Donorâ€Doped <scp><scp>Pb</scp></scp>(<scp><scp>Zr</scp></scp>_x<scp><scp>Ti</scp></scp>_{1â^'x})<scp>O</scp>₃ Nearâ€Surface Diffusion Properties. Journal of the American Ceramic Society, 2012, 95, 1692-1700.	3.8	18
54	Oxygen exchange kinetics and nonstoichiometry of pristine La_{0.6}Sr_{0.4}CoO_{3â^'Î´} thin films unaltered by degradation. Journal of Materials Chemistry A, 2020, 8, 7968-7979.	10.3	18

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55	Substrate stoichiometry changes during pulsed laser deposition: a case study on SrTiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si4.svg"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Acta Materialia, 2021, 203, 116461.	7.9	17
56	Investigating the electrochemical stability of Li₇La₃Zr₂O₁₂ solid electrolytes using field stress experiments. Journal of Materials Chemistry A, 2021, 9, 15226-15237.	10.3	17
57	Current-Voltage Characteristics of Platinum Model Electrodes on Yttria-Stabilized Zirconia. Journal of the Electrochemical Society, 2012, 159, B502-B513.	2.9	15
58	The Current-Voltage Characteristics and Partial Pressure Dependence of Defect Controlled Electrochemical Reactions on Mixed Conducting Oxides. Journal of the Electrochemical Society, 2019, 166, F831-F846.	2.9	15
59	On the variability of oxygen exchange kinetics of platinum model electrodes on yttria stabilized zirconia. Solid State Ionics, 2013, 247-248, 56-65.	2.7	14
60	Exploring point defects and trap states in undoped SrTiO3 single crystals. Journal of the European Ceramic Society, 2022, 42, 1510-1521.	5.7	14
61	Correlation between hydrogen production rate, current, and electrode overpotential in a solid oxide electrolysis cell with La0.6Sr0.4FeO3â^'Î´ thin-film cathode. Monatshefte FÃ¼r Chemie, 2014, 145, 1055-1061.	1.8	13
62	Apparent Oxygen Uphill Diffusion in La_{0.8}Sr_{0.2}MnO₃ Thin Films upon Cathodic Polarization. ChemElectroChem, 2015, 2, 1487-1494.	3.4	13
63	Operando X-ray Investigation of Electrode/Electrolyte Interfaces in Model Solid Oxide Fuel Cells. Chemistry of Materials, 2016, 28, 3727-3733.	6.7	12
64	Oxygen Ion Conduction in Bulk and Grain Boundaries of Nominally Donorâ€Doped Lead Zirconate Titanate (<scp>PZT</scp>): A Combined Impedance and Tracer Diffusion Study. Journal of the American Ceramic Society, 2015, 98, 3259-3269.	3.8	11
65	High Oxygen Exchange Activity of Pristine La_{0.6}Sr_{0.4}FeO_{3â€“Î´}ÂFilms and Its Degradation. Journal of the Electrochemical Society, 2020, 167, 124509.	2.9	11
66	Abâ€initio Structure Determination of the New Ion Conductor K₂Al₂O₃F₂ from Powder Diffraction Data. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2011, 637, 41-45.	1.2	10
67	Dynamic etching of soluble surface layers with on-line inductively coupled plasma mass spectrometry detection â€“ a novel approach for determination of complex metal oxide surface cation stoichiometry. Journal of Analytical Atomic Spectrometry, 2016, 31, 1638-1646.	3.0	10
68	SrTiO3 based high temperature solid oxide solar cells: Photovoltages, photocurrents and mechanistic insight. Solid State Ionics, 2021, 368, 115700.	2.7	10
69	Defect chemistry and transport properties of Nd-doped Pb(ZrxTi1â^'x)O3. Journal of Electroceramics, 2014, 33, 221-229.	2.0	9
70	Defect energetics in the SrTiO3-LaCrO3 system. Solid State Ionics, 2021, 361, 115570.	2.7	9
71	Piezoelectric properties and conductivity of Pb(Zr,Ti)O3 with SrOâ€“WO3 additive. Journal of Materials Science, 2010, 45, 1473-1477.	3.7	8
72	Strain-induced structure and oxygen transport interactions in epitaxial La0.6Sr0.4CoO3â^'Î´ thin films. Communications Materials, 2020, 1, .	6.9	8

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73	La0.6Sr0.4CoO3-Î´(LSC) Thin Film Electrodes with Very Fast Oxygen Reduction Kinetics Prepared by aÂSol-Gel Route. Zeitschrift Fur Physikalische Chemie, 2012, 226, 889-899.	2.8	7
74	Conventional and Microcontact Impedance Studies of Mnâ€“Zn Ferrite Ceramics. Journal of Materials Research, 2004, 19, 864-871.	2.6	6
75	Mapping electrochemically driven gas exchange of mixed conducting SrTi0.7Fe0.3O3â^'Î´ and Ce0.8Gd0.2O1.9 thin films by 18O tracer incorporation under reducing atmosphere. Solid State Ionics, 2015, 273, 25-29.	2.7	6
76	Performance modulation through selective, homogenous surface doping of lanthanum strontium ferrite electrodes revealed by in situ PLD impedance measurements. Journal of Materials Chemistry A, 2022, 10, 2973-2986.	10.3	6
77	Quantitative analysis of the platinum surface decoration on lanthanum strontium iron oxide thin films via online-LASIL-ICP-MS. Microchemical Journal, 2021, 166, 106236.	4.5	5
78	Cation non-stoichiometry in Fe:SrTiO₃ thin films and its effect on the electrical conductivity. Nanoscale Advances, 2021, 3, 6114-6127.	4.6	4
79	A Way for Determining the Effective Three Phase Boundary Width of Solid State Electrochemical Reactions from the Primary and Secondary Current Distribution at Microelectrodes. Zeitschrift Fur Physikalische Chemie, 2007, 221, 1149-1159.	2.8	3
80	Monitoring Active and Resistive Zones of SOFC Cathodes by Voltage Driven Tracer Incorporation. ECS Transactions, 2011, 35, 2217-2226.	0.5	2