

# JÃ¼rgen Fleig

## List of Publications by Year in descending order

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80  
papers

4,645  
citations

101543

36  
h-index

98798

67  
g-index

80  
all docs

80  
docs citations

80  
times ranked

4161  
citing authors

#	ARTICLE	IF	CITATIONS
1	Exploring point defects and trap states in undoped SrTiO <sub>3</sub> single crystals. Journal of the European Ceramic Society, 2022, 42, 1510-1521.	5.7	14
2	Investigating oxygen reduction pathways on pristine SOFC cathode surfaces by <i>in situ</i> PLD impedance spectroscopy. Journal of Materials Chemistry A, 2022, 10, 2305-2319.	10.3	20
3	Performance modulation through selective, homogenous surface doping of lanthanum strontium ferrite electrodes revealed by <i>in situ</i> PLD impedance measurements. Journal of Materials Chemistry A, 2022, 10, 2973-2986.	10.3	6
4	Substrate stoichiometry changes during pulsed laser deposition: a case study on SrTiO <sub>3</sub> . Acta Materialia, 2021, 203, 116461.	7.9	17
5	Cation non-stoichiometry in Fe:SrTiO <sub>3</sub> thin films and its effect on the electrical conductivity. Nanoscale Advances, 2021, 3, 6114-6127.	4.6	4
6	Defect energetics in the SrTiO <sub>3</sub> -LaCrO <sub>3</sub> system. Solid State Ionics, 2021, 361, 115570.	2.7	9
7	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
8	SrTiO <sub>3</sub> based high temperature solid oxide solar cells: Photovoltages, photocurrents and mechanistic insight. Solid State Ionics, 2021, 368, 115700.	2.7	10
9	Investigating the electrochemical stability of Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> solid electrolytes using field stress experiments. Journal of Materials Chemistry A, 2021, 9, 15226-15237.	10.3	17
10	Understanding electrochemical switchability of perovskite-type exsolution catalysts. Nature Communications, 2020, 11, 4801.	12.8	46
11	Strain-induced structure and oxygen transport interactions in epitaxial La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3</sub> thin films. Communications Materials, 2020, 1, .	6.9	8
12	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
13	Oxygen exchange kinetics and nonstoichiometry of pristine La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3</sub> thin films unaltered by degradation. Journal of Materials Chemistry A, 2020, 8, 7968-7979.	10.3	18
14	High Oxygen Exchange Activity of Pristine La <sub>0.6</sub> Sr <sub>0.4</sub> FeO <sub>3</sub> Films and Its Degradation. Journal of the Electrochemical Society, 2020, 167, 124509.	2.9	11
15	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
16	Local Li-ion conductivity changes within Al stabilized Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> and their relationship to three-dimensional variations of the bulk composition. Journal of Materials Chemistry A, 2019, 7, 6818-6831.	10.3	30
17	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
18	Voltage and partial pressure dependent defect chemistry in (La,Sr)FeO <sub>3</sub> thin films investigated by chemical capacitance measurements. Physical Chemistry Chemical Physics, 2018, 20, 12016-12026.	2.8	41

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19	In Situ Impedance Analysis of Oxygen Exchange on Growing La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3</sub> Thin Films. ACS Applied Energy Materials, 2018, 1, 4522-4535.	5.1	19
20	The Chemical Evolution of the La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3</sub> Surface Under SOFC Operating Conditions and Its Implications for Electrochemical Oxygen Exchange Activity. Topics in Catalysis, 2018, 61, 2129-2141.	2.8	65
21	How To Get Mechanistic Information from Partial Pressure-Dependent Current-Voltage Measurements of Oxygen Exchange on Mixed Conducting Electrodes. Chemistry of Materials, 2018, 30, 4242-4252.	6.7	27
22	The Electrochemical Properties of Sr(Ti,Fe)O <sub>3</sub> for Anodes in Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2017, 164, F364-F371.	2.9	41
23	Real-time impedance monitoring of oxygen reduction during surface modification of thin film cathodes. Nature Materials, 2017, 16, 640-645.	27.5	146
24	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
25	Dislocations Accelerate Oxygen Ion Diffusion in La <sub>0.8</sub> Sr <sub>0.2</sub> MnO <sub>3</sub> Epitaxial Thin Films. ACS Nano, 2017, 11, 11475-11487.	14.6	80
26	Surface Chemistry of Perovskite-Type Electrodes During High Temperature CO <sub>2</sub> Electrolysis Investigated by Operando Photoelectron Spectroscopy. ACS Applied Materials & Interfaces, 2017, 9, 35847-35860.	8.0	107
27	Oxygen Vacancies in Fast Lithium-Ion Conducting Garnets. Chemistry of Materials, 2017, 29, 7189-7196.	6.7	63
28	The Effect of Acceptor and Donor Doping on Oxygen Vacancy Concentrations in Lead Zirconate Titanate (PZT). Materials, 2016, 9, 945.	2.9	66
29	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
30	Electronic and Ionic Conductivity of La <sub>0.95</sub> Sr <sub>0.05</sub> Ga <sub>0.95</sub> Mg <sub>0.05</sub> O <sub>3</sub> (LSGM) Single Crystals. Journal of the Electrochemical Society, 2016, 163, F1189-F1197.	2.9	22
31	The Superior Properties of La <sub>0.6</sub> Ba <sub>0.4</sub> CoO <sub>3</sub> Thin Film Electrodes for Oxygen Exchange in Comparison to La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3</sub> . Journal of the Electrochemical Society, 2016, 163, F564-F573.	2.9	36
32	Operando X-ray Investigation of Electrode/Electrolyte Interfaces in Model Solid Oxide Fuel Cells. Chemistry of Materials, 2016, 28, 3727-3733.	6.7	12
33	Dynamic etching of soluble surface layers with on-line inductively coupled plasma mass spectrometry detection – a novel approach for determination of complex metal oxide surface cation stoichiometry. Journal of Analytical Atomic Spectrometry, 2016, 31, 1638-1646.	3.0	10
34	Fast Li-Ion-Conducting Garnet-Related Li <sub>3</sub> Fe <sub>2</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> with Uncommon Structure. Chemistry of Materials, 2016, 28, 5943-5951.	6.7	98
35	Mechanisms of Performance Degradation of (La,Sr)(Co,Fe)O <sub>3</sub> Solid Oxide Fuel Cell Cathodes. Journal of the Electrochemical Society, 2016, 163, F581-F585.	2.9	118
36	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

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37	Structural and Electrochemical Consequences of Al and Ga Cosubstitution in $\text{Li}_{0.7}\text{La}_{0.3}\text{Zr}_{0.2}\text{O}_{12}$ Solid Electrolytes. <i>Chemistry of Materials</i> , 2016, 28, 2384-2392.	6.7	258
38	Apparent Oxygen Uphill Diffusion in $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3$ Thin Films upon Cathodic Polarization. <i>ChemElectroChem</i> , 2015, 2, 1487-1494.	3.4	13
39	Oxygen Ion Conduction in Bulk and Grain Boundaries of Nominally Donor-Doped Lead Zirconate Titanate (PZT): A Combined Impedance and Tracer Diffusion Study. <i>Journal of the American Ceramic Society</i> , 2015, 98, 3259-3269.	3.8	11
40	Comparison of Electrochemical Properties of $\text{La}_{0.6}\text{Sr}_{0.4}\text{FeO}_{3-\delta}$ Thin Film Electrodes: Oxidizing vs. Reducing Conditions. <i>Journal of the Electrochemical Society</i> , 2015, 162, F317-F326.	2.9	38
41	Fast oxygen exchange and diffusion kinetics of grain boundaries in Sr-doped $\text{LaMnO}_3$ thin films. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 7659-7669.	2.8	92
42	Enhancing Electrochemical Water-Splitting Kinetics by Polarization-Driven Formation of Near-Surface Iron(0): An In-Situ XPS Study on Perovskite-Type Electrodes. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 2628-2632.	13.8	110
43	Mapping electrochemically driven gas exchange of mixed conducting $\text{SrTi}_{0.7}\text{Fe}_{0.3}\text{O}_{3-\delta}$ and $\text{Ce}_{0.8}\text{Gd}_{0.2}\text{O}_{1.9}$ thin films by $^{18}\text{O}$ tracer incorporation under reducing atmosphere. <i>Solid State Ionics</i> , 2015, 273, 25-29.	2.7	6
44	Water-Gas Shift and Methane Reactivity on Reducible Perovskite-Type Oxides. <i>Journal of Physical Chemistry C</i> , 2015, 119, 11739-11753.	3.1	19
45	Surface chemistry of $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ thin films and its impact on the oxygen surface exchange resistance. <i>Journal of Materials Chemistry A</i> , 2015, 3, 22759-22769.	10.3	102
46	Synthesis, Crystal Chemistry, and Electrochemical Properties of $\text{Li}_{2-x}\text{La}_3\text{Zr}_{2-x}\text{Mo}_x\text{O}_{12}$ ( $x = 0.1-0.4$ ): Stabilization of the Cubic Garnet Polymorph via Substitution of $\text{Zr}^{4+}$ by $\text{Mo}^{6+}$ . <i>Inorganic Chemistry</i> , 2015, 54, 10440-10449.	4.0	95
47	Defect chemistry and transport properties of Nd-doped $\text{Pb}(\text{Zr}_{1-x}\text{Ti}_x)\text{O}_3$ . <i>Journal of Electroceramics</i> , 2014, 33, 221-229.	2.0	9
48	Electrochemical properties of $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ thin films investigated by complementary impedance spectroscopy and isotope exchange depth profiling. <i>Solid State Ionics</i> , 2014, 256, 38-44.	2.7	28
49	A novel ToF-SIMS operation mode for sub 100nm lateral resolution: Application and performance. <i>Applied Surface Science</i> , 2014, 289, 407-416.	6.1	81
50	Cation diffusion in $\text{La}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ below 800 Å°C and its relevance for Sr segregation. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 2715.	2.8	104
51	Correlation between hydrogen production rate, current, and electrode overpotential in a solid oxide electrolysis cell with $\text{La}_{0.6}\text{Sr}_{0.4}\text{FeO}_{3-\delta}$ thin-film cathode. <i>Monatshefte für Chemie</i> , 2014, 145, 1055-1061.	1.8	13
52	On the variability of oxygen exchange kinetics of platinum model electrodes on yttria stabilized zirconia. <i>Solid State Ionics</i> , 2013, 247-248, 56-65.	2.7	14
53	Tensile Lattice Strain Accelerates Oxygen Surface Exchange and Diffusion in $\text{La}_{1-x}\text{Sr}_x\text{CoO}_{3-\delta}$ Thin Films. <i>ACS Nano</i> , 2013, 7, 3276-3286.	14.6	211
54	A novel ToF-SIMS operation mode for improved accuracy and lateral resolution of oxygen isotope measurements on oxides. <i>Journal of Analytical Atomic Spectrometry</i> , 2013, 28, 1080.	3.0	58

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55	Thin film cathodes in SOFC research: How to identify oxygen reduction pathways?. Journal of Materials Research, 2013, 28, 2085-2105.	2.6	28
56	La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3-<math>\delta</math></sub> (LSC) Thin Film Electrodes with Very Fast Oxygen Reduction Kinetics Prepared by a Sol-Gel Route. Zeitschrift Fur Physikalische Chemie, 2012, 226, 889-899.	2.8	7
57	Current-Voltage Characteristics of Platinum Model Electrodes on Ytria-Stabilized Zirconia. Journal of the Electrochemical Society, 2012, 159, B502-B513.	2.9	15
58	Chemical Heterogeneities on La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3-<math>\delta</math></sub> Thin Films: Correlations to Cathode Surface Activity and Stability. Chemistry of Materials, 2012, 24, 1116-1127.	6.7	284
59	Oxide Ion Transport in Donor-Doped Pb(Zr <sub>x</sub> Ti <sub>1-x</sub> )O <sub>3</sub> : Near-Surface Diffusion Properties. Journal of the American Ceramic Society, 2012, 95, 1692-1700.	3.8	22
60	Oxide Ion Transport in Donor-Doped Pb(Zr <sub>x</sub> Ti <sub>1-x</sub> )O <sub>3</sub> : The Role of Grain Boundaries. Journal of the American Ceramic Society, 2011, 94, 1173-1181.	3.8	22
61	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
62	Ab Initio Structure Determination of the New Ion Conductor K <sub>2</sub> Al <sub>2</sub> O <sub>3</sub> F <sub>2</sub> from Powder Diffraction Data. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2011, 637, 41-45.	1.2	10
63	Monitoring Active and Resistive Zones of SOFC Cathodes by Voltage Driven Tracer Incorporation. ECS Transactions, 2011, 35, 2217-2226.	0.5	2
64	Investigation of O <sub>2</sub> 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
65	Piezoelectric properties and conductivity of Pb(Zr,Ti)O <sub>3</sub> with SrO-WO <sub>3</sub> additive. Journal of Materials Science, 2010, 45, 1473-1477.	3.7	8
66	Visualization of oxygen reduction sites at Pt electrodes on YSZ by means of <sup>18</sup> O tracer incorporation: the width of the electrochemically active zone. Physical Chemistry Chemical Physics, 2010, 12, 12734.	2.8	38
67	Optimized La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3-<math>\delta</math></sub> Thin Film Electrodes with Extremely Fast Oxygen Reduction Kinetics. Advanced Functional Materials, 2009, 19, 3151-3156.	14.9	133
68	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
69	Local Conductivity of Nitrogen-Graded Zirconia. Journal of the American Ceramic Society, 2005, 88, 3067-3074.	3.8	18
70	On the current-voltage characteristics of charge transfer reactions at mixed conducting electrodes on solid electrolytes. Physical Chemistry Chemical Physics, 2005, 7, 2027-2037.	2.8	102
71	Electrical resistance of low-angle tilt grain boundaries in acceptor-doped SrTiO <sub>3</sub> as a function of misorientation angle. Journal of Applied Physics, 2005, 97, 053502.	2.5	63
72	Conventional and Microcontact Impedance Studies of Mn-Zn Ferrite Ceramics. Journal of Materials Research, 2004, 19, 864-871.	2.6	6

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73	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
74	Electrical and Structural Characterization of a Low-Angle Tilt Grain Boundary in Iron-Doped Strontium Titanate. Journal of the American Ceramic Society, 2003, 86, 922-928.	3.8	103
75	SrTiO <sub>3</sub> : A Model Electroceramic. International Journal of Materials Research, 2003, 94, 218-225.	0.8	65
76	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
77	Microcontact Impedance Spectroscopy at Single Grain Boundaries in Fe-Doped SrTiO <sub>3</sub> Polycrystals. Journal of the American Ceramic Society, 2001, 84, 521-530.	3.8	126
78	Resistance Degradation of Iron-Doped Strontium Titanate Investigated by Spatially Resolved Conductivity Measurements. Journal of the American Ceramic Society, 2000, 83, 1969-1976.	3.8	80
79	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
80	Finite-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