Hirofumi Sumi

List of Publications by Year
in descending order

105 papers	2,022 citations	236612 25 h-index	288905 40 g-index
110 all docs	110 docs citations	110 times ranked	1510 citing authors

#	Article	IF	Citations
1	Performance of nickel?scandia-stabilized zirconia cermet anodes for SOFCs in 3% HO?CH. Solid State Ionics, 2004, 174, 151-156.	1.3	100
2	AC impedance characteristics for anode-supported microtubular solid oxide fuel cells. Electrochimica Acta, 2012, 67, 159-165.	2.6	96
3	Effect of oxide on carbon deposition behavior of CH4 fuel on Ni/ScSZ cermet anode in high temperature SOFCs. Solid State Ionics, 2006, 177, 541-547.	1.3	92
4	Degradation evaluation by distribution of relaxation times analysis for microtubular solid oxide fuel cells. Electrochimica Acta, 2020, 339, 135913.	2.6	84
5	Nanocomposite electrodes for high current density over 3â€‰Aâ€‰cmâˆ’2 in solid oxide electrolysis cells. Nature Communications, 2019, 10, 5432.	5.8	79
6	High performance of La0.6Sr0.4Co0.2Fe0.8O3â€“Ce0.9Gd0.1O1.95 nanoparticulate cathode for intermediate temperature microtubular solid oxide fuel cells. Journal of Power Sources, 2013, 226, 354-358.	4.0	74
7	Correlation Between Microstructural and Electrochemical Characteristics during Redox Cycles for Niâ€“YSZ Anode of SOFCs. Journal of the Electrochemical Society, 2010, 157, B1747.	1.3	65
8	Challenge for lowering concentration polarization in solid oxide fuel cells. Journal of Power Sources, 2016, 302, 53-60.	4.0	60
9	Effect of carbon deposition by carbon monoxide disproportionation on electrochemical characteristics at low temperature operation for solid oxide fuel cells. Journal of Power Sources, 2011, 196, 4451-4457.	4.0	59
10	Comparison Between Internal Steam and CO[sub 2] Reforming of Methane for Ni-YSZ and Ni-ScSZ SOFC Anodes. Journal of the Electrochemical Society, 2010, 157, B1118.	1.3	58
11	Transport and magnetic properties of the Heusler-typeFe2âˆ’xV1+xAlsystem(âˆ’0.01â©½xâ©½0.08). Physical Review B, 2005, 71, .	1.1	55
12	From rare earth doped zirconia to 1kW solid oxide fuel cell system. Journal of Alloys and Compounds, 2006, 408-412, 518-524.	2.8	51
13	Effect of Ni diffusion into BaZr0.1Ce0.7Y0.1Yb0.1O3âˆ' electrolyte during high temperature co-sintering in anode-supported solid oxide fuel cells. Ceramics International, 2018, 44, 3134-3140.	2.3	44
14	High power density cell using nanostructured Sr-doped SmCoO3 and Sm-doped CeO2 composite powder synthesized by spray pyrolysis. Journal of Power Sources, 2016, 302, 308-314.	4.0	43
15	Metastable Chloride Solid Electrolyte with High Formability for Rechargeable All-Solid-State Lithium Metal Batteries. , 2020, 2, 880-886.		40
16	Impact of direct butane microtubular solid oxide fuel cells. Journal of Power Sources, 2012, 220, 74-78.	4.0	37
17	Effects of crystal Structure of yttria- and scandia-stabilized zirconia in nickel-based SOFC anodes on carbon deposition and oxidation behavior. Journal of Power Sources, 2011, 196, 6048-6054.	4.0	35
18	Extremely fine structured cathode for solid oxide fuel cells using Sr-doped LaMnO3 and Y2O3-stabilized ZrO2 nano-composite powder synthesized by spray pyrolysis. Journal of Power Sources, 2017, 341, 280-284.	4.0	34

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19	Enhanced La0.6Sr0.4Co0.2Fe0.8O3â€“-based cathode performance by modification of BaZr0.1Ce0.7Y0.1Yb0.1O3â€“ electrolyte surface in protonic ceramic fuel cells. Ceramics International, 2021, 47, 16358-16362.	2.3	34
20	High-resolution soft x-ray photoelectron study of density of states and thermoelectric properties of the Heusler-type alloys(Fe2âˆ•3V1âˆ•3)100âˆ’yAly. Physical Review B, 2005, 71, .	1.1	33
21	Superprotonic conducting phosphate glasses containing water. Journal of Non-Crystalline Solids, 2005, 351, 2138-2141.	1.5	33
22	Blocking layer for prevention of current leakage for reversible solid oxide fuel cells and electrolysis cells with ceria-based electrolyte. International Journal of Hydrogen Energy, 2017, 42, 4449-4455.	3.8	33
23	High-resolution photoelectron spectroscopy of Heusler-type Fe2VAl alloy. Journal of Synchrotron Radiation, 2002, 9, 233-236.	1.0	32
24	Performance Comparison of Perovskite Composite Cathodes with BaZr_{0.1}Ce_{0.7}Y_{0.1}Yb_{0.1}O_{3â€“<i>Î´</i>} in Anode-Supported Protonic Ceramic Fuel Cells. Journal of the Electrochemical Society, 2020, 167, 124506.	1.3	30
25	A Key for Achieving Higher Open-Circuit Voltage in Protonic Ceramic Fuel Cells: Lowering Interfacial Electrode Polarization. ACS Applied Energy Materials, 2019, 2, 587-597.	2.5	28
26	Effect of nanostructured anode functional layer thickness on the solid-oxide fuel cell performance in the intermediate temperature. International Journal of Hydrogen Energy, 2014, 39, 19731-19736.	3.8	27
27	Comparison of electrochemical impedance spectra for electrolyte-supported solid oxide fuel cells (SOFCs) and protonic ceramic fuel cells (PCFCs). Scientific Reports, 2021, 11, 10622.	1.6	26
28	Effect of anode functional layer on energy efficiency of solid oxide fuel cells. Electrochemistry Communications, 2011, 13, 959-962.	2.3	25
29	Effects of Anode Microstructure on Mechanical and Electrochemical Properties for Anodeâ€Supported Microtubular Solid Oxide Fuel Cells. Journal of the American Ceramic Society, 2013, 96, 3584-3588.	1.9	24
30	Prevention of Reaction between (Ba,Sr)(Co,Fe)O3 Cathodes and Yttria-stabilized Zirconica Electrolytes for Intermediate-temperature Solid Oxide Fuel Cells. Electrochimica Acta, 2015, 184, 403-409.	2.6	24
31	La0.65Ca0.35FeO3-Î´ as a novel Sr- and Co-free cathode material for solid oxide fuel cells. Journal of Power Sources, 2020, 448, 227426.	4.0	24
32	Improved transport property of proton-conducting solid oxide fuel cell with multi-layered electrolyte structure. Journal of Power Sources, 2017, 364, 458-464.	4.0	22
33	High Formability and Fast Lithium Diffusivity in Metastable Spinel Chloride for Rechargeable Allâ€Solidâ€State Lithiumâ€Ion Batteries. Advanced Energy and Sustainability Research, 2020, 1, 2000025.	2.8	21
34	Changes of Internal Stress in Solid-Oxide Fuel Cell During Red-Ox Cycle Evaluated by In Situ Measurement With Synchrotron Radiation. Journal of Fuel Cell Science and Technology, 2006, 3, 68-74.	0.8	20
35	Effect of high-temperature ageing on (La,Sr)(Co,Fe)O3-Î´ cathodes in microtubular solid oxide fuel cells. Solid State Ionics, 2018, 323, 85-91.	1.3	20
36	Electrochemical analysis for anode-supported microtubular solid oxide fuel cells in partial reducing and oxidizing conditions. Solid State Ionics, 2014, 262, 407-410.	1.3	19

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37	Electrochemical and microstructural properties of Niâ€“(Y2O3)0.08(ZrO2)0.92â€“(Ce0.9Gd0.1)O1.95 anode-supported microtubular solid oxide fuel cells. Solid State Ionics, 2016, 285, 227-233.	1.3	19
38	One-step sintering process of gadolinia-doped ceria interlayerâ€“scandia-stabilized zirconia electrolyte for anode supported microtubular solid oxide fuel cells. Journal of Power Sources, 2012, 199, 170-173.	4.0	18
39	Low temperature densification process of solid-oxide fuel cell electrolyte controlled by anode support shrinkage. RSC Advances, 2011, 1, 911.	1.7	17
40	Development of anode-supported electrochemical cell based on proton-conductive Ba(Ce,Zr)O3 electrolyte. Solid State Ionics, 2016, 288, 347-350.	1.3	17
41	Influence of Niâ€“Oxide Anode Thickness on Performance Stability in Internal Reforming of Methane for Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2013, 160, F579-F584.	1.3	16
42	Effect of Anode Thickness on Polarization Resistance for Metal-Supported Microtubular Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2017, 164, F243-F247.	1.3	15
43	Performance of Niâ€“Fe/gadolinium-doped CeO2 anode supported tubular solid oxide fuel cells using steam reforming of methane. Journal of Power Sources, 2012, 202, 225-229.	4.0	14
44	Proton conduction of MO-P2O5 glasses (MÂ=ÂZn, Ba) containing a large amount of water. Solid State Sciences, 2015, 45, 5-8.	1.5	14
45	Internal Partial Oxidation Reforming of Butane and Steam Reforming of Ethanol for Anodeâ€supported Microtubular Solid Oxide Fuel Cells. Fuel Cells, 2017, 17, 875-881.	1.5	14
46	Demonstration of SOFC Power Sources for Drones (UAVs; Unmanned Aerial Vehicles). ECS Transactions, 2019, 91, 149-157.	0.3	13
47	Protonic Ceramic Fuel Cell with Bi-Layered Structure of BaZr_{0.1}Ce_{0.7}Y_{0.1}Yb_{0.1}O_{3â€“Î´} Functional Interlayer and BaZr_{0.8}Yb_{0.2}O_{3â€“Î´} Electrolyte. Journal of the Electrochemical Society, 2021, 168, 124504.	1.3	13
48	Effects of anode microstructures on durability of microtubular solid oxide fuel cells during internal steam reforming of methane. Electrochemistry Communications, 2014, 49, 34-37.	2.3	12
49	Development of co-sintering process for anode-supported solid oxide fuel cells with gadolinia-doped ceria/lanthanum silicate bi-layer electrolyte. International Journal of Hydrogen Energy, 2019, 44, 23377-23383.	3.8	12
50	Investigation of the microstructural effect of Niâ€“yttria stabilized zirconia anode for solid-oxide fuel cell using micro-beam X-ray absorption spectroscopy analysis. Journal of Power Sources, 2013, 222, 15-20.	4.0	10
51	Effect of Operating Temperature on Durability for Direct Butane Utilization of Microtubular Solid Oxide Fuel Cells. Electrochemistry, 2013, 81, 86-91.	0.6	10
52	Direct hydrocarbon utilization in microtubular solid oxide fuel cells. Journal of the Ceramic Society of Japan, 2015, 123, 213-216.	0.5	10
53	Additive effect of NiO on electrochemical properties of mixed ion conductor BaZr_{0.1}Ce_{0.7}Y_{0.1}Yb_{0.1}O<sub>3& Journal of the Ceramic Society of Japan, 2017, 125, 257-261.	0.5	10
54	Electrical Resistivity Anomaly and Magnetic Properties in Heusler-Type Fe₂VAl Alloy. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2001, 65, 771-774.	0.2	10

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55	Magnetic circular dichroism at Fe and V L2,3 thresholds of Heusler-type Fe2â^’xV1+xAl. Physica B: Condensed Matter, 2004, 351, 338-340.	1.3	9
56	Direct Butane Utilization on Ni-(Y2O3)0.08(ZrO2)0.92-(Ce0.9Gd0.1)O1.95 Composite Anode-Supported Microtubular Solid Oxide Fuel Cells. Electrocatalysis, 2017, 8, 288-293.	1.5	9
57	Near room temperature synthesis of perovskite oxides. Ceramics International, 2019, 45, 24936-24940.	2.3	9
58	High-performance Gd0.5Sr0.5CoO3â^’ and Ce0.8Gd0.2O1.9 nanocomposite cathode for achieving high power density in solid oxide fuel cells. Electrochimica Acta, 2021, 368, 137679.	2.6	9
59	Lanthanum-doped ceria interlayer between electrolyte and cathode for solid oxide fuel cells. Journal of Asian Ceramic Societies, 2021, 9, 609-616.	1.0	9
60	A reduced temperature solid oxide fuel cell with three-dimensionally ordered macroporous cathode. Journal of Power Sources, 2012, 212, 86-92.	4.0	8
61	Proton conductivities and structures of BaOâ€“ZnOâ€“P2O5 glasses in the ultraphosphate region for intermediate temperature fuel cells. International Journal of Hydrogen Energy, 2013, 38, 15354-15360.	3.8	8
62	Experimental and Simulated Evaluations of Current Collection Losses in Anode-Supported Microtubular Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2013, 160, F1232-F1236.	1.3	8
63	Microtubular solid-oxide fuel cells for low-temperature operation. MRS Bulletin, 2014, 39, 805-809.	1.7	7
64	Evaluation of micro flat-tube solid-oxide fuel cell modules using simple gas heating apparatus. Journal of Power Sources, 2014, 272, 730-734.	4.0	7
65	Development of a Portable SOFC System with Internal Partial Oxidation Reforming of Butane and Steam Reforming of Ethanol. ECS Transactions, 2017, 80, 71-77.	0.3	7
66	Metal-supported microtubular solid oxide fuel cells with ceria-based electrolytes. Journal of the Ceramic Society of Japan, 2017, 125, 208-212.	0.5	7
67	Valency effects of cation dopant on ultraphosphate glass electrolytes for intermediate temperature fuel cells. Journal of the Ceramic Society of Japan, 2017, 125, 829-832.	0.5	7
68	In-situ Measurement of Internal Stresses in Solid Oxide Fuel Cells during Thermal Cycling by Synchrotron Radiation. Zairyo/Journal of the Society of Materials Science, Japan, 2005, 54, 440-446.	0.1	7
69	Correlation between Microstructure and Electrochemical Characteristics of Ni-YSZ Anode Subjected to Redox Cycles. ECS Transactions, 2011, 35, 1379-1387.	0.3	6
70	Effect of starting solution concentration in spray pyrolysis on powder properties and electrochemical electrode performance. Advanced Powder Technology, 2016, 27, 1438-1445.	2.0	6
71	Infiltration of Lanthanum Doped Ceria into Nickel-Zirconia Anodes for Direct Butane Utilization in Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2019, 166, F301-F305.	1.3	6
72	Performance of Niâ€based Anodeâ€Supported <scp>SOFC</scp>s with Doped Ceria Electrolyte at Low Temperatures Between 294 and 542Â°C. International Journal of Applied Ceramic Technology, 2015, 12, 358-362.	1.1	5

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73	High steam utilization operation with high current density in solid oxide electrolysis cells. Journal of the Ceramic Society of Japan, 2016, 124, 213-217.	0.5	5
74	Characteristics of Fuel Cells Using Protonic Conductors of Phosphate Glasses as Electrolyte. Electrochemistry, 2004, 72, 633-636.	0.6	5
75	Experiences With the First Japanese-Made Solid-Oxide Fuel-Cell System. Journal of Fuel Cell Science and Technology, 2005, 2, 179-185.	0.8	4
76	Effect of pinholes in electrolyte on reâ€oxidation tolerance of anodeâ€supported solid oxide fuel cells. Fuel Cells, 2021, 21, 398-407.	1.5	4
77	Reactive-sintering of Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O<sub>3&am using alkaline earth peroxides for low-temperature synthesis. Journal of the Ceramic Society of Japan, 2017, 125, 681-685.	0.5	3
78	Low-temperature fabrication of (Ba,Sr)(Co,Fe)O₃ cathode by the reactive sintering method. Journal of the Ceramic Society of Japan, 2019, 127, 485-490.	0.5	3
79	Influence of cation interdiffusion on electrical properties of doped ceria/lanthanum silicate composite. Ceramics International, 2020, 46, 20423-20428.	2.3	3
80	Elastic Constants for X-Ray Stress Measurement of Ceramics for Solid Oxide Fuel Cell (SOFC). Zairyo/Journal of the Society of Materials Science, Japan, 2005, 54, 1080-1086.	0.1	3
81	Possibility of Non-humidified Operation for Fuel Cells using Electrolyte of Protonic Conductors of Phosphate Glasses with Sr-Ba-Pb Series. Electrochemistry, 2005, 73, 194-198.	0.6	3
82	High Performance Cell Development Using Scandia Doped Zirconia Electrolyte for Low Temperature Operating SOFCs. ECS Proceedings Volumes, 2003, 2003-07, 995-1002.	0.1	2
83	Fabrication and characterization of YSZ thin films for SOFC application. Journal of the Ceramic Society of Japan, 2015, 123, 250-252.	0.5	2
84	Development of Micro Power Generator Using LPG-Fueled Microtubular Solid Oxide Fuel Cells. ECS Transactions, 2015, 68, 201-208.	0.3	2
85	Estimation of micro-size defects in electrolyte thin-film by X-ray stress measurement for anode-supported solid oxide fuel cells. Mechanical Engineering Journal, 2016, 3, 16-00177-16-00177.	0.2	2
86	Distribution of Relaxation Times Analysis for Optimization of Anode Thickness in Metal-Supported Microtubular Solid Oxide Fuel Cells. ECS Transactions, 2017, 78, 2151-2157.	0.3	2
87	Ceria/Lanthanum Silicate Bi-Layer Electrolytes for SOFC Operating at Intermediate Temperatures. ECS Transactions, 2019, 91, 571-577.	0.3	2
88	Development of Metal-Supported Planar SOFCs Fabricated by All Wet Process on Metallurgical Porous Substrates. ECS Transactions, 2019, 91, 909-915.	0.3	2
89	Application of catalytic layer on solid oxide fuel cell anode surface. Electrochemistry Communications, 2012, 15, 26-28.	2.3	1
90	Reversible Performance of Anode-Supported Proton-Conductive Solid Oxide Cell in Lower Temperature Range. ECS Transactions, 2013, 57, 3249-3253.	0.3	1

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91	Development of Microtubular SOFCs for Portable Power Sources. ECS Transactions, 2013, 57, 133-140.	0.3	1
92	Correlation between Protonic Conductivity and Structure of Phosphate Glasses for Intermediate Temperature Fuel Cells. ECS Transactions, 2013, 50, 187-191.	0.3	1
93	Development of Portable SOFC System Using Microtubular Cells. ECS Transactions, 2014, 56, 63-69.	0.3	1
94	Development of Ceria-Based Microtubular Solid Oxide Fuel Cells. ECS Transactions, 2015, 69, 61-67.	0.3	1
95	Modification of sinterability and electrical property by Bi2O3 addition to La9.333Si6O26 for co-sintering with Gd0.1Ce0.9O1.95. Inorganic Chemistry Communication, 2020, 117, 107974.	1.8	1
96	Improvement in Power Density of Protonic Ceramic Fuel Cells with Yb Doped BaZrO3 Electrolyte. ECS Transactions, 2021, 103, 1725-1734.	0.3	1
97	Evaluation of Water-warming Characteristics of an Integrated Adsorption Heat Pump with Zeolite Absorbent. Kagaku Kogaku Ronbunshu, 2009, 35, 312-317.	0.1	1
98	Influence of Anode Thickness on Cell Performance in Internal Reforming Operation of SOFCs. ECS Transactions, 2011, 35, 1641-1646.	0.3	0
99	Fabrication and Evaluation of Micro-Tubular SOFC Stack. ECS Transactions, 2012, 45, 531-534.	0.3	0
100	Transmission Electron Microscopy Observation of Nickel-Yttria Stabilized Zirconia Catalyst for Solid Oxide Fuel Cells in Methane Atmosphere. ECS Transactions, 2013, 57, 1455-1462.	0.3	0
101	Flexible Fast Lithium Ion Conducting Ceramic Electrolyte. Materials Research Society Symposia Proceedings, 2013, 1496, 1.	0.1	0
102	Reducing the Gadolinium Dopant Content by Partial Substitution with Yttrium in a Ce0.9Gd0.1O1.95-based Oxide-Ion Conductor. ECS Transactions, 2017, 78, 377-385.	0.3	0
103	Reducing the Gadolinium Dopant Content by Partial Substitution with Yttrium in a Ce0.9Gd0.1O1.95-Based Oxide-Ion Conductor. Journal of the Electrochemical Society, 2017, 164, F1626-F1632.	1.3	0
104	Evaluation Method of Current Distribution in SOFC in Operation. ECS Transactions, 2019, 91, 579-588.	0.3	0
105	Nano-Composite Electrode Technology on Micro SOFC. Yosetsu Gakkai Shi/Journal of the Japan Welding Society, 2015, 84, 193-195.	0.0	0