Hirofumi Sumi

List of Publications by Citations

97 papers	1,438 citations	21 h-index	33 g-index
110 ext. papers	1,722 ext. citations	3.6 avg, IF	4.66 L-index

#	Paper	IF	Citations
97	Performance of nickel?scandia-stabilized zirconia cermet anodes for SOFCs in 3% HO?CH. *Solid State Ionics*, **2004**, 174, 151-156	3.3	89
96	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	3.3	81
95	AC impedance characteristics for anode-supported microtubular solid oxide fuel cells. *Electrochimica Acta*, **2012**, 67, 159-165	6.7	75
94	High performance of La0.6Sr0.4Co0.2Fe0.8O3Ce0.9Gd0.1O1.95 nanoparticulate cathode for intermediate temperature microtubular solid oxide fuel cells. *Journal of Power Sources*, **2013**, 226, 354-358	8.9	60
93	Correlation Between Microstructural and Electrochemical Characteristics during Redox Cycles for NiYSZ Anode of SOFCs. *Journal of the Electrochemical Society*, **2010**, 157, B1747	3.9	57
92	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	3.9	56
91	Challenge for lowering concentration polarization in solid oxide fuel cells. *Journal of Power Sources*, **2016**, 302, 53-60	8.9	49
90	From rare earth doped zirconia to 1kW solid oxide fuel cell system. *Journal of Alloys and Compounds* , **2006**, 408-412, 518-524	5.7	48
89	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	8.9	47
88	Transport and magnetic properties of the Heusler-type Fe2V1+xAl system (0.01?x?0.08). *Physical Review B*, **2005**, 71,	3.3	46
87	Degradation evaluation by distribution of relaxation times analysis for microtubular solid oxide fuel cells. *Electrochimica Acta*, **2020**, 339, 135913	6.7	42
86	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	8.9	33
85	High-resolution soft x-ray photoelectron study of density of states and thermoelectric properties of the Heusler-type alloys (Fe2V1)100Aly. *Physical Review B*, **2005**, 71,	3.3	30
84	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	8.9	29
83	Effect of Ni diffusion into BaZr0.1Ce0.7Y0.1Yb0.1O3electrolyte during high temperature co-sintering in anode-supported solid oxide fuel cells. *Ceramics International*, **2018**, 44, 3134-3140	5.1	29
82	Superprotonic conducting phosphate glasses containing water. *Journal of Non-Crystalline Solids*, **2005**, 351, 2138-2141	3.9	28
81	Impact of direct butane microtubular solid oxide fuel cells. *Journal of Power Sources*, **2012**, 220, 74-78	8.9	27

80	High-resolution photoelectron spectroscopy of Heusler-type Fe(2)VAl alloy. *Journal of Synchrotron Radiation*, **2002**, 9, 233-6	2.4	27
79	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	6.7	25
78	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	8.9	25
77	Nanocomposite electrodes for high current density over 3 A cm in solid oxide electrolysis cells. *Nature Communications*, **2019**, 10, 5432	17.4	22
76	Effect of anode functional layer on energy efficiency of solid oxide fuel cells. *Electrochemistry Communications*, **2011**, 13, 959-962	5.1	21
75	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	6.7	20
74	Effects of Anode Microstructure on Mechanical and Electrochemical Properties for Anode-Supported Microtubular Solid Oxide Fuel Cells. *Journal of the American Ceramic Society*, **2013**, 96, 3584-3588	3.8	19
73	Electrochemical and microstructural properties of Ni□(Y2O3)0.08(ZrO2)0.92□(Ce0.9Gd0.1)O1.95 anode-supported microtubular solid oxide fuel cells. *Solid State Ionics*, **2016**, 285, 227-233	3.3	17
72	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	6.7	17
71	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		16
70	Metastable Chloride Solid Electrolyte with High Formability for Rechargeable All-Solid-State Lithium Metal Batteries **2020**, 2, 880-886		15
69	Electrochemical analysis for anode-supported microtubular solid oxide fuel cells in partial reducing and oxidizing conditions. *Solid State Ionics*, **2014**, 262, 407-410	3.3	15
68	One-step sintering process of gadolinia-doped ceria interlayer□scandia-stabilized zirconia electrolyte for anode supported microtubular solid oxide fuel cells. *Journal of Power Sources*, **2012**, 199, 170-173	8.9	15
67	Improved transport property of proton-conducting solid oxide fuel cell with multi-layered electrolyte structure. *Journal of Power Sources*, **2017**, 364, 458-464	8.9	14
66	Performance of Ni□Fe/gadolinium-doped CeO2 anode supported tubular solid oxide fuel cells using steam reforming of methane. *Journal of Power Sources*, **2012**, 202, 225-229	8.9	13
65	Low temperature densification process of solid-oxide fuel cell electrolyte controlled by anode support shrinkage. *RSC Advances*, **2011**, 1, 911	3.7	13
64	La0.65Ca0.35FeO3-□as a novel Sr- and Co-free cathode material for solid oxide fuel cells. *Journal of Power Sources*, **2020**, 448, 227426	8.9	13
63	Effect of high-temperature ageing on (La,Sr)(Co,Fe)O3-□cathodes in microtubular solid oxide fuel cells. *Solid State Ionics*, **2018**, 323, 85-91	3.3	13

62	Development of anode-supported electrochemical cell based on proton-conductive Ba(Ce,Zr)O3 electrolyte. *Solid State Ionics*, **2016**, 288, 347-350	3.3	12
61	Proton conduction of MO-P2O5 glasses (M=Zn, Ba) containing a large amount of water. *Solid State Sciences*, **2015**, 45, 5-8	3.4	11
60	Internal Partial Oxidation Reforming of Butane and Steam Reforming of Ethanol for Anode-supported Microtubular Solid Oxide Fuel Cells. *Fuel Cells*, **2017**, 17, 875-881	2.9	11
59	Influence of NiOxide Anode Thickness on Performance Stability in Internal Reforming of Methane for Solid Oxide Fuel Cells. *Journal of the Electrochemical Society*, **2013**, 160, F579-F584	3.9	11
58	Effect of Anode Thickness on Polarization Resistance for Metal-Supported Microtubular Solid Oxide Fuel Cells. *Journal of the Electrochemical Society*, **2017**, 164, F243-F247	3.9	10
57	Effects of anode microstructures on durability of microtubular solid oxide fuel cells during internal steam reforming of methane. *Electrochemistry Communications*, **2014**, 49, 34-37	5.1	10
56	Effect of Operating Temperature on Durability for Direct Butane Utilization of Microtubular Solid Oxide Fuel Cells. *Electrochemistry*, **2013**, 81, 86-91	1.2	10
55	Performance Comparison of Perovskite Composite Cathodes with BaZr0.1Ce0.7Y0.1Yb0.1O3 in Anode-Supported Protonic Ceramic Fuel Cells. *Journal of the Electrochemical Society*, **2020**, 167, 124506	3.9	10
54	Investigation of the microstructural effect of Niyttria stabilized zirconia anode for solid-oxide fuel cell using micro-beam X-ray absorption spectroscopy analysis. *Journal of Power Sources*, **2013**, 222, 15-20	8.9	9
53	Enhanced La0.6Sr0.4Co0.2Fe0.8O3based cathode performance by modification of BaZr0.1Ce0.7Y0.1Yb0.1O3electrolyte surface in protonic ceramic fuel cells. *Ceramics International*, **2021**, 47, 16358-16362	5.1	9
52	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	2.7	8
51	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	6.7	8
50	Magnetic circular dichroism at Fe and V L2,3 thresholds of Heusler-type Fe2V1+xAl. *Physica B: Condensed Matter*, **2004**, 351, 338-340	2.8	8
49	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	0.4	8
48	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	6.1	8
47	A reduced temperature solid oxide fuel cell with three-dimensionally ordered macroporous cathode. *Journal of Power Sources*, **2012**, 212, 86-92	8.9	7
46	Additive effect of NiO on electrochemical properties of mixed ion conductor BaZr0.1Ce0.7Y0.1Yb0.1O3−δ. *Journal of the Ceramic Society of Japan*, **2017**, 125, 257-261	1	7
45	Direct hydrocarbon utilization in microtubular solid oxide fuel cells. *Journal of the Ceramic Society of Japan*, **2015**, 123, 213-216	1	7

44	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	3.9	7
43	Evaluation of micro flat-tube solid-oxide fuel cell modules using simple gas heating apparatus. *Journal of Power Sources*, **2014**, 272, 730-734	8.9	6
42	Proton conductivities and structures of BaO–ZnO–P2O5 glasses in the ultraphosphate region for intermediate temperature fuel cells. *International Journal of Hydrogen Energy*, **2013**, 38, 15354-15360	6.7	6
41	Microtubular solid-oxide fuel cells for low-temperature operation. *MRS Bulletin*, **2014**, 39, 805-809	3.2	6
40	Correlation between Microstructure and Electrochemical Characteristics of Ni-YSZ Anode Subjected to Redox Cycles. *ECS Transactions*, **2011**, 35, 1379-1387	1	6
39	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	6
38	Effect of starting solution concentration in spray pyrolysis on powder properties and electrochemical electrode performance. *Advanced Powder Technology*, **2016**, 27, 1438-1445	4.6	6
37	Development of a Portable SOFC System with Internal Partial Oxidation Reforming of Butane and Steam Reforming of Ethanol. *ECS Transactions*, **2017**, 80, 71-77	1	5
36	Characteristics of Fuel Cells Using Protonic Conductors of Phosphate Glasses as Electrolyte. *Electrochemistry*, **2004**, 72, 633-636	1.2	5
35	Comparison of electrochemical impedance spectra for electrolyte-supported solid oxide fuel cells (SOFCs) and protonic ceramic fuel cells (PCFCs). *Scientific Reports*, **2021**, 11, 10622	4.9	5
34	Demonstration of SOFC Power Sources for Drones (UAVs; Unmanned Aerial Vehicles). *ECS Transactions*, **2019**, 91, 149-157	1	4
33	Performance of Ni-based Anode-Supported SOFCs with Doped Ceria Electrolyte at Low Temperatures Between 294 and 542°C. *International Journal of Applied Ceramic Technology*, **2015**, 12, 358-362	2	4
32	High steam utilization operation with high current density in solid oxide electrolysis cells. *Journal of the Ceramic Society of Japan*, **2016**, 124, 213-217	1	4
31	Metal-supported microtubular solid oxide fuel cells with ceria-based electrolytes. *Journal of the Ceramic Society of Japan*, **2017**, 125, 208-212	1	4
30	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	1	4
29	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	3.9	3
28	Near room temperature synthesis of perovskite oxides. *Ceramics International*, **2019**, 45, 24936-24940	5.1	3
27	Experiences With the First Japanese-Made Solid-Oxide Fuel-Cell System. *Journal of Fuel Cell Science and Technology*, **2005**, 2, 179-185		3

26	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
25	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	1.2	3
24	High Formability and Fast Lithium Diffusivity in Metastable Spinel Chloride for Rechargeable All-Solid-State Lithium-Ion Batteries. *Advanced Energy and Sustainability Research*, **2020**, 1, 2000025	1.6	3
23	High-performance Gd0.5Sr0.5CoO3□and Ce0.8Gd0.2O1.9 nanocomposite cathode for achieving high power density in solid oxide fuel cells. *Electrochimica Acta*, **2021**, 368, 137679	6.7	3
22	Development of Micro Power Generator Using LPG-Fueled Microtubular Solid Oxide Fuel Cells. *ECS Transactions*, **2015**, 68, 201-208	1	2
21	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	0.5	2
20	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	1	2
19	Distribution of Relaxation Times Analysis for Optimization of Anode Thickness in Metal-Supported Microtubular Solid Oxide Fuel Cells. *ECS Transactions*, **2017**, 78, 2151-2157	1	2
18	Fabrication and characterization of YSZ thin films for SOFC application. *Journal of the Ceramic Society of Japan*, **2015**, 123, 250-252	1	2
17	Development Of Microtubular Solid Oxide Fuel Cells Using Hydrocarbon Fuels. *Ceramic Engineering and Science Proceedings*, **2015**, 93-104	0.1	2
16	Development of Ceria-Based Microtubular Solid Oxide Fuel Cells. *ECS Transactions*, **2015**, 69, 61-67	1	1
15	Influence of cation interdiffusion on electrical properties of doped ceria/lanthanum silicate composite. *Ceramics International*, **2020**, 46, 20423-20428	5.1	1
14	Reactive-sintering of Ba0.5Sr0.5Co0.8Fe0.2O3−δ using alkaline earth peroxides for low-temperature synthesis. *Journal of the Ceramic Society of Japan*, **2017**, 125, 681-685	1	1
13	Application of catalytic layer on solid oxide fuel cell anode surface. *Electrochemistry Communications*, **2012**, 15, 26-28	5.1	1
12	Evaluation of Water-warming Characteristics of an Integrated Adsorption Heat Pump with Zeolite Absorbent. *Kagaku Kogaku Ronbunshu*, **2009**, 35, 312-317	0.4	1
11	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	3.1	1
10	Lanthanum-doped ceria interlayer between electrolyte and cathode for solid oxide fuel cells. *Journal of Asian Ceramic Societies*, **2021**, 9, 609-616	2.4	1
9	Effect of pinholes in electrolyte on re-oxidation tolerance of anode-supported solid oxide fuel cells. *Fuel Cells*, **2021**, 21, 398-407	2.9	1

List of Publications

8	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	1
7	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	3.9
6	Low temperature operable micro-tubular SOFCS using Gd doped ceria electrolyte and Ni based anode. *Ceramic Engineering and Science Proceedings*, **2015**, 97-104	0.1
5	Flexible Fast Lithium Ion Conducting Ceramic Electrolyte. *Materials Research Society Symposia Proceedings*, **2013**, 1496, 1	
4	Fabrication and Evaluation of Micro-Tubular SOFC Stack. *ECS Transactions*, **2012**, 45, 531-534	1
3	Nano-Composite Electrode Technology on Micro SOFC. *Yosetsu Gakkai Shi/Journal of the Japan Welding Society*, **2015**, 84, 193-195	0.1
2	Investigation of Ni-Yttria Stabilized Zirconia Anode for Solid-Oxide Fuel Cell using XAS Analysis. *Ceramic Engineering and Science Proceedings*,137-144	0.1
1	Development of Portable Solid Oxide Fuel Cell System Driven by Hydrocarbon and Alcohol Fuels. *Ceramic Engineering and Science Proceedings*, **2019**, 159-163	0.1