Sukhvinder P Badwal

List of Publications by Year in Descending Order

129 papers	7,100 citations	44 h-index	82 g-index
132 ext. papers	7,737 ext. citations	4.7 avg, IF	6.2 L-index

#	Paper	IF	Citations
129	Polymer Electrolyte Membrane Technologies Integrated With Renewable Energy for Hydrogen Production **2019**, 235-259		12
128	Emerging technologies, markets and commercialization of solid-electrolytic hydrogen production. *Wiley Interdisciplinary Reviews: Energy and Environment*, **2018**, 7, e286	4.7	12
127	Role of iron species as mediator in a PEM based carbon-water co-electrolysis for cost-effective hydrogen production. *International Journal of Hydrogen Energy*, **2018**, 43, 9144-9152	6.7	22
126	Ceramic composite cathodes for CO2 conversion to CO in solid oxide electrolysis cells. *Applied Energy*, **2018**, 221, 131-138	10.7	22
125	Evaluation of Sc2O3âCeO2âZrO2 electrolyte-based tubular fuel cells using activated charcoal and hydrogen fuels. *Electrochimica Acta*, **2018**, 259, 143-150	6.7	13
124	A comprehensive review of carbon and hydrocarbon assisted water electrolysis for hydrogen production. *Applied Energy*, **2018**, 231, 502-533	10.7	91
123	The role of nanosized SnO2 in Pt-based electrocatalysts for hydrogen production in methanol assisted water electrolysis. *Electrochimica Acta*, **2017**, 229, 39-47	6.7	34
122	Gasification, DICE, and direct carbon fuel cells for power, fuels, and chemicals production from low rank coals **2017**, 217-237		1
121	Electro-catalytic conversion of ethanol in solid electrolyte cells for distributed hydrogen generation. *Electrochimica Acta*, **2016**, 212, 744-757	6.7	30
120	In situ high-temperature powder diffraction studies of solid oxide electrolyte direct carbon fuel cell materials in the presence of brown coal. *Journal of Materials Science*, **2016**, 51, 3928-3940	4.3	1
119	Enhancing Oxygen Reduction Reactions in Solid Oxide Fuel Cells with Ultrathin Nanofilm ElectrodeâElectrolyte Interfacial Layers. *Journal of Physical Chemistry C*, **2016**, 120, 15675-15683	3.8	11
118	Catalytic gasification of carbon in a direct carbon fuel cell. *Fuel*, **2016**, 180, 270-277	7.1	31
117	Direct ethanol fuel cells for transport and stationary applications â A comprehensive review. *Applied Energy*, **2015**, 145, 80-103	10.7	317
116	Composite anodes for improved performance of a direct carbon fuel cell. *Journal of Power Sources*, **2015**, 284, 122-129	8.9	20
115	Low emission hydrogen generation through carbon assisted electrolysis. *International Journal of Hydrogen Energy*, **2015**, 40, 70-74	6.7	20
114	Direct Carbon Fuel Cell Operation on Brown Coal with a Ni-GDC-YSZ Anode. *Electrochimica Acta*, **2015**, 178, 721-731	6.7	26
113	Yttria-doped ceria anode for carbon-fueled solid oxide fuel cell. *Journal of Solid State Electrochemistry*, **2015**, 19, 325-335	2.6	23

112	Spontaneous stress-induced oxidation of Ce ions in Gd-doped ceria at room temperature. *Ionics*, **2014**, 20, 1117-1126	2.7	8
111	Permeation and strength characteristics of macroporous supports for gas separation produced by co-sintering mixtures of □-alumina and kaolin. *Journal of Membrane Science*, **2014**, 463, 126-133	9.6	12
110	Electrochemical performance of direct carbon fuel cells with titanate anodes. *Electrochimica Acta*, **2014**, 121, 34-43	6.7	26
109	Biomass to power conversion in a direct carbon fuel cell. *International Journal of Hydrogen Energy*, **2014**, 39, 12377-12385	6.7	43
108	Performance evaluation of a tubular direct carbon fuel cell operating in a packed bed of carbon. *Energy*, **2014**, 68, 538-547	7.9	30
107	Degradation Mechanism in a Direct Carbon Fuel Cell Operated with Demineralised Brown Coal. *Electrochimica Acta*, **2014**, 143, 278-290	6.7	26
106	Emerging electrochemical energy conversion and storage technologies. *Frontiers in Chemistry*, **2014** , 2, 79	5	196
105	Direct carbon fuel cell operation on brown coal. *Applied Energy*, **2014**, 120, 56-64	10.7	72
104	Polymer electrolyte membrane fuel cell as a hydrogen flow rate monitoring device. *Ionics*, **2013**, 19, 523-528	2.7	4
103	Review of electrochemical ammonia production technologies and materials. *International Journal of Hydrogen Energy*, **2013**, 38, 14576-14594	6.7	418
102	Structural and microstructural stability of ceria â□gadolinia electrolyte exposed to reducing environments of high temperature fuel cells. *Journal of Materials Chemistry A*, **2013**, 1, 10768	13	61
101	Hydrogen production via solid electrolytic routes. *Wiley Interdisciplinary Reviews: Energy and Environment*, **2013**, 2, 473-487	4.7	45
100	Evaluation of solid electrolyte cells with a versatile electrochemical technique. *Ionics*, **2013**, 19, 265-275	2.7	8
99	A comprehensive review of direct carbon fuel cell technology. *Progress in Energy and Combustion Science*, **2012**, 38, 360-399	33.6	369
98	Review of Fuels for Direct Carbon Fuel Cells. *Energy & Fuels*, **2012**, 26, 1471-1488	4.1	129
97	A novel design of bipolar interconnect plate for self-air breathing micro fuel cells and degradation issues. *International Journal of Hydrogen Energy*, **2012**, 37, 11431-11447	6.7	10
96	Mixed ionic electronic conducting perovskite anode for direct carbon fuel cells. *International Journal of Hydrogen Energy*, **2012**, 37, 19092-19102	6.7	76
95	Electrochemical performance of ceria-gadolinia electrolyte based direct carbon fuel cells. *Solid State Ionics*, **2011**, 194, 46-52	3.3	51

94	High purity oxygen production with a polymer electrolyte membrane electrolyser. *Journal of Membrane Science*, **2010**, 346, 227-232	9.6	22
93	Stand-alone PEM water electrolysis system for fail safe operation with a renewable energy source. *International Journal of Hydrogen Energy*, **2010**, 35, 928-935	6.7	54
92	Investigations on fabrication and lifetime performance of self âair breathing direct hydrogen micro fuel cells. *International Journal of Hydrogen Energy*, **2010**, 35, 2506-2516	6.7	16
91	FUEL CELL HEAT RECOVERY, ELECTRICAL LOAD MANAGEMENT, AND THE ECONOMICS OF SOLAR-HYDROGEN SYSTEMS. *International Journal of Power and Energy Systems*, **2010**, 30,	1.3	10
90	Direct coupling of an electrolyser to a solar PV system for generating hydrogen. *International Journal of Hydrogen Energy*, **2009**, 34, 2531-2542	6.7	168
89	Research and developments in hydrogen technologies. *Advances in Applied Ceramics*, **2007**, 106, 40-44	2.3	
88	Hydrogen and oxygen generation with polymer electrolyte membrane (PEM)-based electrolytic technology. *Ionics*, **2006**, 12, 7-14	2.7	62
87	Review of proton conductors for hydrogen separation. *Ionics*, **2006**, 12, 103-115	2.7	182
86	Materials for separation membranes in hydrogen and oxygen production and future power generation. *Science and Technology of Advanced Materials*, **2006**, 7, 792-805	7.1	92
85	Analysis of the conductivity of commercial easy sintering grade 3 mol% YO?ZrO materials. *Solid State Ionics*, **2005**, 176, 169-178	3.3	24
84	Fuel quality and operational issues for polymer electrolyte membrane (PEM) fuel cells. *Ionics*, **2005**, 11, 1-10	2.7	18
83	Design, assembly and operation of polymer electrolyte membrane fuel cell stacks to 1 kWe capacity. *Journal of Power Sources*, **2004**, 125, 155-165	8.9	50
82	Oxygen removal and level control with zirconia âYttria membrane cells. *Ionics*, **2003**, 9, 315-320	2.7	8
81	Tubular zirconiaâyttria electrolyte membrane technology for oxygen separation. *Solid State Ionics*, **2002**, 152-153, 763-768	3.3	8
80	A versatile polymer electrolyte membrane fuel cell (3 kWe) facility. *Solid State Ionics*, **2002**, 152-153, 363-371	3.3	10
79	The application of solid state ionic technology for novel methods of energy generation and supply. *Solid State Ionics*, **2002**, 152-153, 843-852	3.3	9
78	Chemical diffusion in perovskite cathodes of solid oxide fuel cells: the Sr doped LaMn1âxMxO3 (M?Co, Fe) systems. *Ceramics International*, **2001**, 27, 419-429	5.1	31
77	A manometric method for the determination of chemical diffusion in perovskite-type cathode materials of the solid oxide fuel cell. *Ceramics International*, **2001**, 27, 431-441	5.1	12

76	Application of work function measurements for surface monitoring of oxide electrode materials (La,Sr)(Co,Mn,Fe)O3. *Journal of Physics and Chemistry of Solids*, **2001**, 62, 723-729	3.9	11
75	Stability of solid oxide fuel cell components. *Solid State Ionics*, **2001**, 143, 39-46	3.3	213
74	Planar solid oxide fuel cells: the Australian experience and outlook. *Journal of Power Sources*, **2000**, 86, 68-73	8.9	17
73	Scandiaâ□irconia electrolytes for intermediate temperature solid oxide fuel cell operation. *Solid State Ionics*, **2000**, 136-137, 91-99	3.3	215
72	Fabrication and performance of Ni/3 mol% Y2O3â□rO2 cermet anodes for solid oxide fuel cells. *Solid State Ionics*, **2000**, 132, 1-14	3.3	78
71	Oxygen-ion conducting electrolyte materials for solid oxide fuel cells. *Ionics*, **2000**, 6, 1-21	2.7	118
70	The electrochemical performance of LSM/zirconiaâttria interface as a function of a-site non-stoichiometry and cathodic current treatment. *Solid State Ionics*, **1999**, 121, 1-10	3.3	137
69	Investigation of the stability of ceria-gadolinia electrolytes in solid oxide fuel cell environments. *Solid State Ionics*, **1999**, 121, 253-262	3.3	70
68	An electrode kinetics study of H2 oxidation on Ni/Y2O3□ZrO2 cermet electrode of the solid oxide fuel cell. *Solid State Ionics*, **1999**, 123, 209-224	3.3	190
67	The effect of alumina addition on the conductivity, microstructure and mechanical strength of zirconia âttria electrolytes. *Ionics*, **1998**, 4, 25-32	2.7	11
66	An investigation of conductivity, microstructure and stability of electrolyte compositions in the system 9 mol% (Sc2O3â2O3)â□rO2(Al2O3). *Solid State Ionics*, **1998**, 109, 167-186	3.3	115
65	Chemical interactions between strontium-doped praseodymium manganite and 3 mol% yttria-zirconia. *Journal of Materials Chemistry*, **1998**, 8, 2787-2794		13
64	Characterisation, conductivity and mechanical properties of theoxygen-ion conductor La0.9Sr0.1Ga0.8Mg0.2O3-x. *Journal of Materials Chemistry*, **1997**, 7, 79-83		103
63	Hydrogen Oxidation at the Nickel and Platinum Electrodes on Yttria-Tetragonal Zirconia Electrolyte. *Journal of the Electrochemical Society*, **1997**, 144, 3777-3784	3.9	146
62	Interaction between chromia forming alloy interconnects and air electrode of solid oxide fuel cells. *Solid State Ionics*, **1997**, 99, 297-310	3.3	275
61	Electrode supported solid oxide fuel cells: Electrolyte films prepared by DC magnetron sputtering. *Solid State Ionics*, **1997**, 99, 311-319	3.3	62
60	Electrochemical Techniques in Studies of Solid Ionic Conductors. *Key Engineering Materials*, **1996**, 125-126, 81-132	0.4	32
59	Solid oxide electrolyte fuel cell review. *Ceramics International*, **1996**, 22, 257-265	5.1	247

58	Microwave sintering of zirconia-yttria electrolytes and measurement of their ionic conductivity. *Solid State Ionics*, **1996**, 86-88, 1167-1172	3.3	14
57	Grain boundary resistivity in zirconia-based materials: effect of sintering temperatures and impurities. *Solid State Ionics*, **1995**, 76, 67-80	3.3	135
56	Interfaces in zirconia based electrochemical systems and their influence on electrical properties. *Materials Science Monographs*, **1995**, 71-111		8
55	Electrode kinetic behaviour of (U0.4Pr0.6)O2□x/YSZ/(U0.4Pr0.6)O2□x cells. *Journal of Materials Chemistry*, **1994**, 4, 1437-1440		
54	Evaluation of commercial zirconia powders forsolid oxide fuel cells. *Solid State Ionics*, **1994**, 73, 49-61	3.3	81
53	Effect of micro- and nano-structures on the properties of ionic conductors. *Solid State Ionics*, **1994**, 70-71, 83-95	3.3	56
52	Role of O2â□OHâ□and anion vacancies in the degradation of Y-TZP in moist environments. *Journal of Materials Chemistry*, **1994**, 4, 257-263		14
51	Zirconia-based solid electrolytes: microstructure, stability and ionic conductivity. *Solid State Ionics*, **1992**, 52, 23-32	3.3	395
50	Microstructure/conductivity relationship in the scandia-zirconia system. *Solid State Ionics*, **1992**, 53-56, 769-776	3.3	48
49	The effects of sintering atmosphere on impurity phase formation and grain boundary resistivity in Y2O3-fully stabilized ZrO2. *Journal of the European Ceramic Society*, **1992**, 10, 115-122	6	45
48	Impurity and yttrium segregation in yttria-tetragonal zirconia. *Solid State Ionics*, **1991**, 46, 265-274	3.3	79
47	The system Y2O3-Sc2O3-ZrO2: Phase characterisation by XRD, TEM and optical microscopy. *Journal of the European Ceramic Society*, **1991**, 7, 185-195	6	47
46	The system Y2O3-Sc2O3-ZrO2: Phase stability and ionic conductivity studies. *Journal of the European Ceramic Society*, **1991**, 7, 197-206	6	57
45	A fully automated four-probe d.c. conductivity technique for investigating solid electrolytes. *Journal of Applied Electrochemistry*, **1991**, 21, 721-728	2.6	13
44	The Surface Stability of Y-TZP Materials. *Key Engineering Materials*, **1991**, 53-55, 722-725	0.4	
43	Influence of Y-TZP Additions on the Conductivity of Yttria-Bismuth Oxide. *Key Engineering Materials* , **1991**, 53-55, 241-246	0.4	
42	The Ionic Conductivity of Yttria-Zirconia Compositions. *Key Engineering Materials*, **1991**, 53-55, 235-240	0.4	
41	Electrodes for Fuel Cells and Oxygen Pumps: A Test Procedure. *Key Engineering Materials*, **1991**, 53-55, 247-252	0.4	

40	Comment on â□low-Temperature Ionic Conductivity of 9.4-mol%-Yttria-Stabilized Zironia Single Crystalsâ□*Journal of the American Ceramic Society*, **1990**, 73, 3718-3719	3.8	6
39	Creep Deformation and the Grain-Boundary Resistivity of Tetragonal Zirconia Polycrystalline Materials. *Journal of the American Ceramic Society*, **1990**, 73, 2505-2507	3.8	22
38	Yttria tetragonal zirconia polycrystalline electrolytes for solid state electrochemical cells. *Applied Physics A: Solids and Surfaces*, **1990**, 50, 449-462		55
37	Evaluation of conducting properties of yttria-zirconia wafers. *Solid State Ionics*, **1990**, 40-41, 869-873	3.3	18
36	Polarization studies on solid electrolyte cells with a full automated galvanostatic current interruption technique. *Solid State Ionics*, **1990**, 40-41, 878-881	3.3	7
35	Relationship between phase stability and conductivity of yttria tetragonal zirconia. *Solid State Ionics*, **1990**, 40-41, 882-885	3.3	14
34	Impurity segregation study at the surface of yttria-zircOnia electrolytes by XPS. *Solid State Ionics*, **1990**, 40-41, 312-315	3.3	27
33	Formation of monoclinic zirconia at the anodic face of tetragonal zirconia polycrystalline solid electrolytes. *Applied Physics A: Solids and Surfaces*, **1989**, 49, 13-24		25
32	Grain boundary resistivity in Y-TZP materials as a function of thermal history. *Journal of Materials Science*, **1989**, 24, 88-96	4.3	35
31	Anisotropic Ionic Conductivity Observed in Superplastically Deformed Yttria-Stabilized Zirconia/Alumina Composite. *Journal of the American Ceramic Society*, **1989**, 72, 1279-1281	3.8	5
30	Nernstian behaviour of zirconia oxygen sensors incorporating composite electrodes. *Journal of Applied Electrochemistry*, **1988**, 18, 232-239	2.6	9
29	Response rate techniques for zirconia-based Nernstian oxygen sensors. *Journal of Applied Electrochemistry*, **1988**, 18, 608-613	2.6	14
28	The effect of thermal history on the grain boundary resistivity of Y$z.sbnd;TZP materials. *Solid State Ionics*, **1988**, 28-30, 1451-1455	3.3	9
27	Oxygen measurement with SIRO2sensors. *Journal of Physics E: Scientific Instruments*, **1987**, 20, 531-540		13
26	Effect of dopant concentration on the grain boundary and volume resistivity of yttria-zirconia. *Journal of Materials Science Letters*, **1987**, 6, 1419-1421		19
25	Effect of alumina additions on the grain boundary and volume resistivity of tetragonal zirconia polycrystals. *Journal of Materials Science Letters*, **1987**, 6, 1431-1434		47
24	Yttria-zirconia: Effect of microstructure on conductivity. *Journal of Materials Science*, **1987**, 22, 3231-3239	4.3	131
23	An oxygen sensor based on the semiconducting properties of (U0.3Y0.7)O2â□. *Journal of Applied Electrochemistry*, **1987**, 17, 495-504	2.6	1

22	Effect of dopant concentration on electrical conductivity in the Sc2O3-ZrO2 system. *Journal of Materials Science*, **1987**, 22, 4125-4132	4.3	42
21	Interface between cosintered (U,M)O2□x electrodes and yttria-zirconia electrolyte. *Solid State Ionics*, **1986**, 18-19, 1033-1037	3.3	5
20	Microstructure of Pt electrodes and its influence on the oxygen transfer kinetics. *Solid State Ionics*, **1986**, 18-19, 1054-1059	3.3	25
19	Uraniaâ□candia + Pt composite electrodes for use in solid electrolyte cells. *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry*, **1986**, 202, 93-99		5
18	Performance of zirconia membrane oxygen sensors at low temperatures with nonstoichiometric oxide electrodes. *Journal of Applied Electrochemistry*, **1986**, 16, 28-40	2.6	30
17	ZrO2-Y2O3: electrical conductivity of some fully and partially stabilized single grains. *Journal of Materials Science Letters*, **1985**, 4, 487-489		41
16	Non-stoichiometric oxide electrodes for solid state electrochemical devices. *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry*, **1984**, 168, 363-382		28
15	Electrochemical behaviour of the surface treated composite-electrolyte/electrode interface. *Journal of Applied Electrochemistry*, **1984**, 14, 379-387	2.6	1
14	Electrical conductivity of single crystal and polycrystalline yttria-stabilized zirconia. *Journal of Materials Science*, **1984**, 19, 1767-1776	4.3	117
13	Electrical conductivity of Sc2O3-ZrO2 compositions by 4-probe d.c. and 2-probe complex impedance techniques. *Journal of Materials Science*, **1983**, 18, 3117-3127	4.3	26
12	Effect of alumina and monoclinic zirconia on the electrical conductivity of Sc2O3-ZrO2 compositions. *Journal of Materials Science*, **1983**, 18, 3230-3242	4.3	22
11	Impedance spectroscopy of the Pt/Yttria doped ceria interface. *Solid State Ionics*, **1983**, 9-10, 973-977	3.3	13
10	Electrode Kinetics at the Palladium/Ceramic Oxide Electrolyte Interface. *Journal of the Electrochemical Society*, **1982**, 129, 1921-1928	3.9	15
9	Equivalent Circuit Analysis of the Impedance Response of Semiconductor/Electrolyte/Counterelectrode Cells. *Journal of the Electrochemical Society*, **1982**, 129, 551-559	3.9	84
8	Conductivities and electronic structures of some phases in the lithium-iron-sulfur system. *Journal of Solid State Chemistry*, **1982**, 43, 163-174	3.3	9
7	The behaviour of lead dioxide electrodes in acidic sulfate electrolytes. *Australian Journal of Chemistry*, **1981**, 34, 247	1.2	7
6	The electrode kinetics of the evolution and dissolution of oxygen at the urania-zirconia interfaces. *Electrochimica Acta*, **1980**, 25, 1115-1125	6.7	14
5	Free energy of formation of PdO by impedance dispersion analysis. *Journal of Solid State Chemistry*, **1980**, 34, 133-135	3.3	15

4	Urania-yttria solid solution electrodes for high-temperature electrochemical applications. *Journal of Materials Science*, **1979**, 14, 2353-2365	4.3	17
3	Electrode Kinetics at the Pt/Yttria-Stabilized Zirconia Interface by Complex Impedance Dispersion Analysis. *Physica Status Solidi A*, **1979**, 54, 261-270		20
2	Faradaic reaction kinetics in solid electrolytes by impedance dispersion analysis. *Physica Status Solidi A*, **1978**, 49, K181-K184		6
1	Polarization at the (U0.7Y0.3)O2+x/YSZ interface by impedance dispersion analysis. *Australian Journal of Chemistry*, **1978**, 31, 2337	1.2	8