Anil V Virkar

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122
papers5,389
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h-index72
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ext. papers5,745
ext. citations4.4
avg, IF5.72
L-index

#	Paper	IF	Citations
122	Polarization Effects in Intermediate Temperature, Anode-Supported Solid Oxide Fuel Cells. <i>Journal of the Electrochemical Society</i> , 1999 , 146, 69-78	3.9	499
121	The Effect of Porous Composite Electrode Structure on Solid Oxide Fuel Cell Performance: I. Theoretical Analysis. <i>Journal of the Electrochemical Society</i> , 1997 , 144, 21-30	3.9	334
120	Thermodynamic and Kinetic Effects of Oxygen Removal on the Thermal Conductivity of Aluminum Nitride. <i>Journal of the American Ceramic Society</i> , 1989 , 72, 2031-2042	3.8	308
119	Fracture Mechanisms in Ferroelectric-Ferroelastic Lead Zirconate Titanate (Zr: Ti=0.54:0.46) Ceramics. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 567-574	3.8	254
118	Lattice Parameters and Densities of Rare-Earth Oxide Doped Ceria Electrolytes. <i>Journal of the American Ceramic Society</i> , 1995 , 78, 433-439	3.8	245
117	Ferroelastic Domain Switching as a Toughening Mechanism in Tetragonal Zirconia. <i>Journal of the American Ceramic Society</i> , 1986 , 69, C-224-C-226	3.8	229
116	Mechanism of oxygen electrode delamination in solid oxide electrolyzer cells. <i>International Journal of Hydrogen Energy</i> , 2010 , 35, 9527-9543	6.7	201
115	High-Thermal-Conductivity Aluminum Nitride Ceramics: The Effect of Thermodynamic, Kinetic, and Microstructural Factors. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 1421-1435	3.8	184
114	Stability of BaCeO3-Based Proton Conductors in Water-Containing Atmospheres. <i>Journal of the Electrochemical Society</i> , 1999 , 146, 2038-2044	3.9	164
113	Strengthening of Oxide Ceramics by Transformation-Induced Stress. <i>Journal of the American Ceramic Society</i> , 1987 , 70, 164-170	3.8	143
112	Instability of BaCeO3 in H 2 O -Containing Atmospheres. <i>Journal of the Electrochemical Society</i> , 1996 , 143, 1386-1389	3.9	118
111	High-Toughness Ce-TZP/Al2O3 Ceramics with Improved Hardness and Strength. <i>Journal of the American Ceramic Society</i> , 1991 , 74, 179-186	3.8	101
110	Investigation of Phase Stability in the System Sic-AlN. <i>Journal of the American Ceramic Society</i> , 1983 , 66, 272-276	3.8	101
109	Mechanism of Catalyst Degradation in Proton Exchange Membrane Fuel Cells. <i>Journal of the Electrochemical Society</i> , 2007 , 154, B540	3.9	100
108	Theoretical analysis of the role of interfaces in transport through oxygen ion and electron conducting membranes. <i>Journal of Power Sources</i> , 2005 , 147, 8-31	8.9	92
107	Theoretical Analysis of Solid Oxide Fuel Cells with Two-Layer, Composite Electrolytes: Electrolyte Stability. <i>Journal of the Electrochemical Society</i> , 1991 , 138, 1481-1487	3.9	88
106	Oxidation Kinetics of Some Nickel-Based Superalloy Foils and Electronic Resistance of the Oxide Scale Formed in Air Part I. <i>Journal of the Electrochemical Society</i> , 1999 , 146, 3196-3202	3.9	84

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105	Estimation of Charge-Transfer Resistivity of La[sub 0.8]Sr[sub 0.2]MnO[sub 3] Cathode on Y[sub 0.16]Zr[sub 0.84]O[sub 2] Electrolyte Using Patterned Electrodes. <i>Journal of the Electrochemical Society</i> , 2005 , 152, A210	3.9	79
104	Resistivity-Microstructure Relations in Lithia-Stabilized Polycrystalline EAlumina. <i>Journal of the American Ceramic Society</i> , 1978 , 61, 250-252	3.8	78
103	A model for solid oxide fuel cell (SOFC) stack degradation. <i>Journal of Power Sources</i> , 2007 , 172, 713-724	4 8.9	67
102	Ferroelastic Domain Switching in Tetragonal Zirconia Single CrystalsMicrostructural Aspects. <i>Journal of the American Ceramic Society</i> , 1991 , 74, 807-813	3.8	65
101	Low-Temperature Aging of t?-Zirconia: The Role of Microstructure on Phase Stability. <i>Journal of the American Ceramic Society</i> , 1991 , 74, 1811-1820	3.8	65
100	Effect of Microstructure and Composition on Ionic Conductivity of Rare-Earth Oxide-Doped Ceria. Journal of the Electrochemical Society, 1998, 145, 638-647	3.9	63
99	Kinetics of Spinodal Decomposition in the TiO2-SnO2 System: The Effect of Aliovalent Dopants. Journal of the American Ceramic Society, 1988 , 71, 12-21	3.8	61
98	Ferroelastic Domain Switching in Polydomain Tetragonal Zirconia Single Crystals. <i>Journal of the American Ceramic Society</i> , 1989 , 72, 2098-2103	3.8	58
97	Effect of Aliovalent Dopants on the Kinetics of Phase Transformation and Ordering in RE2O3-Bi2O3 (RE = Yb, Er, Y, or Dy) Solid Solutions. <i>Journal of the American Ceramic Society</i> , 1993 , 76, 2403-2418	3.8	56
96	Stability of AB 1 / 2 ? B ? 1 / 2 O 3 - Type Mixed Perovskite Proton Conductors. <i>Journal of the Electrochemical Society</i> , 1999 , 146, 4386-4392	3.9	54
95	Fabrication, Microstructural Characterization, and Mechanical Properties of Polycrystalline t'-Zirconia. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 3650-3657	3.8	54
94	Electrochemical Ostwald ripening of Pt and Ag catalysts supported on carbon. <i>Journal of Power Sources</i> , 2013 , 234, 82-90	8.9	51
93	Phase Stability, Phase Transformation Kinetics, and Conductivity of Y2O3 B i2O3 Solid Electrolytes Containing Aliovalent Dopants. <i>Journal of the American Ceramic Society</i> , 1991 , 74, 1970-1980	3.8	51
92	Fracture Properties of Polycrystalline Lithia-Stabilized 🛭 Alumina. <i>Journal of the American Ceramic Society</i> , 1977 , 60, 58-61	3.8	51
91	Strength-Grain Size Relations in Polycrystalline Ceramics. <i>Journal of the American Ceramic Society</i> , 1979 , 62, 179-183	3.8	49
90	Indentation Fracture Response and Damage Resistance of Al2O3-ZrO2 Composites Strengthened by Transformation-Induced Residual Stresses. <i>Journal of the American Ceramic Society</i> , 1988 , 71, C-501-	c ³ 505	48
89	Measurement of oxygen chemical potential in Gd2O3-doped ceria-Y2O3-stabilized zirconia bi-layer electrolyte, anode-supported solid oxide fuel cells. <i>Journal of Power Sources</i> , 2009 , 192, 267-278	8.9	41
88	A study of solid oxide fuel cell stack failure by inducing abnormal behavior in a single cell test. Journal of Power Sources, 2008 , 185, 790-800	8.9	40

87	Internal Precipitation of Molecular Oxygen and Electromechanical Failure of Zirconia Solid Electrolytes. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 3382-3390	3.8	40
86	A study of gadolinia-doped ceria electrolyte by electrochemical impedance spectroscopy. <i>Journal of Power Sources</i> , 2014 , 247, 947-960	8.9	39
85	Determination of Residual Stress Profile Using a Strain Gage Technique. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 2100-2102	3.8	38
84	Damage-Resistant SiCAlN Layered Composites with Surface Compressive Stresses. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 1136-1141	3.8	37
83	Low-Temperature TiO2-SnO2 Phase Diagram Using the Molten-Salt Method. <i>Journal of the American Ceramic Society</i> , 2005 , 81, 2176-2180	3.8	36
82	Estimation of Charge-Transfer Resistivity of Pt Cathode on YSZ Electrolyte Using Patterned Electrodes. <i>Journal of the Electrochemical Society</i> , 2005 , 152, A927	3.9	36
81	Fracture Behavior of ZrO2-Zr Composites. <i>Journal of the American Ceramic Society</i> , 1977 , 60, 514-519	3.8	36
80	Measurement of Residual Stresses in Oxide@rO2 Three-Layer Composites. <i>Journal of the American Ceramic Society</i> , 1988 , 71, C-148-C-151	3.8	35
79	High-Temperature Creep and Cavitation of Polycrystalline Aluminum Nitride. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 1928-1935	3.8	32
78	Two-Layer Fuel Cell Electrolyte Structure by Sol-Gel Processing. <i>Journal of Sol-Gel Science and Technology</i> , 1998 , 11, 203-207	2.3	31
77	High temperature creep of SiC densified using a transient liquid phase. <i>Journal of Materials Research</i> , 1991 , 6, 1945-1949	2.5	30
76	The role of ferroelasticity in toughening of brittle materials. <i>Phase Transitions</i> , 1991 , 35, 27-46	1.3	29
75	Phase Equilibria and Phase Transformation in the Aluminum Nitride-Aluminum Oxycarbide Pseudobinary System. <i>Journal of the American Ceramic Society</i> , 1989 , 72, 540-550	3.8	27
74	Morphology of Phase Separation in AIN-Al2OC and SiC-AIN Ceramics. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 2640-2646	3.8	27
73	Grinding-Induced Texture in Ferroelastic Tetragonal Zirconia. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 1777-1779	3.8	27
72	A model for degradation of electrochemical devices based on linear non-equilibrium thermodynamics and its application to lithium ion batteries. <i>Journal of Power Sources</i> , 2011 , 196, 5970-	-5 ⁸ 84	26
71	Interdiffusion and Kirkendall Effect in Doped BaTiO3BaZrO3 Perovskites: Effect of Vacancy Supersaturation. <i>Journal of the American Ceramic Society</i> , 2004 , 82, 2887-2899	3.8	22
70	Phase stability and oxygen transport characteristics of yttria- and niobia-stabilized bismuth oxide. Journal of Materials Science, 1990 , 25, 1237-1245	4.3	22

69	Electronic conductivity measurement of yttria-stabilized zirconia solid electrolytes by a transient technique. <i>Journal of Power Sources</i> , 2016 , 302, 98-106	8.9	21
68	Phase Separation in the SiCAlN Pseudobinary System: The Role of Coherency Strain Energy. Journal of the American Ceramic Society, 1992 , 75, 809-821	3.8	21
67	Modulated Structures in SiC-AIN Ceramics. <i>Journal of the American Ceramic Society</i> , 1987 , 70, C-125-C-12	1 8 .8	21
66	Measurement of oxygen chemical potential in thin electrolyte film, anode-supported solid oxide fuel cells. <i>Journal of Power Sources</i> , 2008 , 180, 92-102	8.9	20
65	Interdiffusion in SiCAlN and AlNAl2OC Systems. <i>Journal of the American Ceramic Society</i> , 1996 , 79, 2168-2174	3.8	20
64	On the deterioration of Palumina ceramics under electrolytic conditions. <i>Journal of Materials Science</i> , 1980 , 15, 302-308	4.3	19
63	Spinodal Decomposition in Ionic Compounds. <i>Journal of the American Ceramic Society</i> , 1983 , 66, 451-456	3.8	19
62	Synthesis of oxide perovskite solid solutions using the molten salt method. <i>Journal of Materials Research</i> , 1996 , 11, 1863-1865	2.5	18
61	On the deterioration of Palumina ceramics under electrolytic conditions. <i>Journal of Materials Science</i> , 1980 , 15, 302-308	4.3	18
60	Sodium Penetration in Rapid Ion Conductors. <i>Journal of the American Ceramic Society</i> , 1979 , 62, 528-529	3.8	17
59	Electrochemical Vapor Deposition of CeO2: Kinetics of Deposition of a Composite, Two-Layer Electrolyte. <i>Journal of the Electrochemical Society</i> , 1992 , 139, 2458-2465	3.9	16
58	Reversible high temperature cells for power generation and hydrogen production using mixed ionic electronic conducting solid electrolytes. <i>International Journal of Hydrogen Energy</i> , 2015 , 40, 5561-5577	6.7	15
57	Interdiffusion and Kirkcndall Effect in Doped Barium Titanate-Strontium Titanate Diffusion Couples. <i>Journal of the American Ceramic Society</i> , 1995 , 78, 993-998	3.8	15
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55	Application of Load-Relaxation Techniques to Study Subcritical Crack Growth in Brittle Materials. <i>Journal of the American Ceramic Society</i> , 1976 , 59, 68-71	3.8	14
54	Vapor Phase Conversion of ⊞Alumina + Zirconia Composites into Sodium Ion Conducting Na-ĿAlumina + Zirconia Solid Electrolytes. <i>Journal of the Electrochemical Society</i> , 2013 , 160, A2268-A228	3 0 9	13
53	Transport through mixed proton, oxygen ion and electron/hole conductors: Analysis of fuel cells and electrolyzer cells using Onsager equations. <i>International Journal of Hydrogen Energy</i> , 2012 , 37, 1260	6:726	2 1 2
52	Massive Transformation in the Y2O3-Bi2O3 System. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 1638-1648	3.8	12

51	Design and synthesis of degradation-resistant corellhell catalysts for proton exchange membrane fuel cells. <i>Journal of Power Sources</i> , 2014 , 261, 271-277	8.9	11
50	Effect of stress on dissolution/precipitation of platinum: Implications concerning corellhell catalysts and cathode degradation in proton exchange membrane fuel cells. <i>Journal of Power Sources</i> , 2011 , 196, 9204-9212	8.9	11
49	Ionic Conductivity and Phase Transformation in Gd2 O 3 🛮 Stabilized Bi2 O 3. <i>Journal of the Electrochemical Society</i> , 1992 , 139, 1671-1676	3.9	11
48	Effect of Coherency Strains on Phase Separation in the AlN-Al2OC Pseudobinary System. <i>Journal of the American Ceramic Society</i> , 1993 , 76, 2419-2432	3.8	11
47	Cubic-to-Tetragonal Displacive Transformation in Gd2O3Bi2O3 Ceramics. <i>Journal of the American Ceramic Society</i> , 1993 , 76, 2513-2520	3.8	11
46	Electrochemical Degradation of Fuel Cells: Effect of Electrolyte Composition. <i>ECS Transactions</i> , 2009 , 25, 447-456	1	10
45	Transport through mixed proton, oxygen ion and electron (hole) conductors: Goldman⊞odgkinKatz-type equation. <i>Journal of Power Sources</i> , 2009 , 194, 753-762	8.9	10
44	Temperature Dependence of the Kinetics of Electrochemical Vapor Deposition of CeO2. <i>Journal of the Electrochemical Society</i> , 1993 , 140, 1073-1080	3.9	10
43	Phase Transformation Kinetics in the Doped System LiAl5O8IIiFe5O8. <i>Journal of the American Ceramic Society</i> , 1988 , 71, C428-C432	3.8	10
42	A Compressed-Spring Analogy for Residual Stress Effects on the Extension of Indenter Flaws. Journal of the American Ceramic Society, 1984, 67, C-201-C-203	3.8	10
41	Synthesis of iron-doped Na-Ealumina + yttria-stabilized zirconia composite electrolytes by a vapor phase process. <i>Solid State Ionics</i> , 2016 , 290, 77-82	3.3	10
40	Measurement of Ionic and Electronic Conductivities of Yttria-Stabilized Zirconia by an Embedded Electrode Method. <i>Journal of the Electrochemical Society</i> , 2015 , 162, F298-F309	3.9	9
39	Some Kinetic Considerations Regarding the Double-Torsion Specimen. <i>Journal of the American Ceramic Society</i> , 1976 , 59, 197-200	3.8	8
38	Modeling of Oxygen Chemical Potential Distribution in Solid Oxide Electrolyzer Cells. <i>Journal of the Electrochemical Society</i> , 2019 , 166, F1275-F1283	3.9	8
37	Dual-phase magnesia-zirconia ceramics with strength retention at elevated temperatures. <i>Journal of Materials Science</i> , 1989 , 24, 3855-3864	4.3	7
36	Elevated-Temperature Creep of Silicon Carbide-Aluminum Nitride Ceramics: Role of Grain Size. <i>Journal of the American Ceramic Society</i> , 1986 , 69, C-279-C-281	3.8	7
35	Electrical-Mechanical Analog Applied to Crack Growth in Glass- Glass-Ceramic Composites. <i>Journal of the American Ceramic Society</i> , 1980 , 63, 219-223	3.8	7
34	Synthesis of platinum nanoclusters and electrochemical investigation of their stability. <i>Journal of Power Sources</i> , 2013 , 240, 618-629	8.9	6

33	Development of Surface Compressive Stresses in Zirconia Alumina Composites by an Ion-Exchange Process. <i>Journal of the American Ceramic Society</i> , 2004 , 84, 1321-1326	3.8	6
32	Locally developed electronic conduction in a yttria stabilized zirconia (YSZ) electrolyte for durable solid oxide fuel cells. <i>Electrochimica Acta</i> , 2020 , 353, 136450	6.7	5
31	Chemical Diffusion Coefficient of H2O in AB(1🛭)B?xO(3🗸/2)-Type Perovskites. <i>Journal of the American Ceramic Society</i> , 2004 , 85, 3059-3064	3.8	5
30	A Study of of CO Adsorption/Desorption on a Thin Platinum Film by the Measurement of Electrical Resistance. <i>Journal of the Electrochemical Society</i> , 2018 , 165, F232-F237	3.9	4
29	Spatial investigation of electronic properties in composite electrolytes for solid oxide fuel cells using embedded probes. <i>Journal of Power Sources</i> , 2019 , 438, 226945	8.9	4
28	Oxidation/reduction studies on nanoporous platinum films by electrical resistance measurements. Journal of Power Sources, 2014 , 269, 621-631	8.9	4
27	The role of superimposed stresses on the degradation of solid electrolytes. <i>Journal of Materials Science</i> , 1986 , 21, 859-865	4.3	4
26	Three and Four-Electrode Electrochemical Impedance Spectroscopy Studies Using Embedded Composite Thin Film Pseudo-Reference Electrodes in Proton Exchange Membrane Fuel Cells. <i>Journal of the Electrochemical Society</i> , 2019 , 166, F784-F795	3.9	3
25	Measurement of Ionic Conductivity and Electrode Polarization at Low Temperatures on 8YSZ by a DC Technique. <i>Journal of the Electrochemical Society</i> , 2017 , 164, F1543-F1550	3.9	3
24	Subsolidus Phase Diagram of the Bi2O3-Gd2O3 System and the Morphology of Phase Separation. Journal of the American Ceramic Society, 2004 , 82, 2225-2232	3.8	3
23	Massive transformation in bismuth oxide-based ceramics. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2002 , 33, 2433-2443	2.3	3
22	Prediction of Crack Paths in Particulate Composites Using Electrical Analog. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 340-345	3.8	3
21	Kinetics of Phase Transformation in the TiO2-SnO2 System Outside the Coherent Spinodal: Role of Aliovalent Dopants. <i>Journal of the American Ceramic Society</i> , 1986 , 69, C-310-C-312	3.8	3
20	Role of Electronic Conduction in Stability of Solid Oxide Electrolyzer Cells (SOEC). <i>ECS Transactions</i> , 2017 , 80, 81-89	1	2
19	Failure of Ion-Conducting Materials by Internal Precipitation Under Electrolytic Conditions 2015 , 59-76		2
18	Dependence of the Kinetics of Electrochemical Vapor Deposition of CeO2 on Oxygen Partial Pressure. <i>Journal of the Electrochemical Society</i> , 1994 , 141, 1261-1267	3.9	2
17	Electrochemical Liquid Deposition of Ceria. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 2209-221	2 3.8	2
16	Kinetics of Precipitation from a Dilute Solid Solution. <i>Journal of the American Ceramic Society</i> , 1985 , 68, C-11-C-12	3.8	2

15	Application of Electrical Analog in Composite Plates. <i>Journal of the American Ceramic Society</i> , 1983 , 66, C-87-C-88	3.8	2
14	Electroreduction of Zirconia Using Embedded Electrodes. <i>Journal of the Electrochemical Society</i> , 2016 , 163, F714-F718	3.9	2
13	Electrochemical Coarsening of Copper Powder in Aqueous Media. <i>Journal of the Electrochemical Society</i> , 2010 , 157, B768	3.9	1
12	Synthesis of Nanosize Tin Dioxide by a Novel Liquid-Phase Process. <i>Journal of the American Ceramic Society</i> , 2008 , 91, 1009-1012	3.8	1
11	Investigation of Ion and Electron Conduction in the Mixed Ionic-Electronic Conductor-La-Sr-Co-Fe-Oxide (LSCF) Using Alternating Current (AC) and Direct Current (DC) Techniques. Journal of the Electrochemical Society, 2022 , 169, 014506	3.9	1
10	Sodium, Silver and Lithium-Ion Conducting & Alumina + YSZ Composites, Ionic Conductivity and Stability. <i>Crystals</i> , 2021 , 11, 293	2.3	1
9	On the Thermodynamic Origin of the Formation of Li-Dendrites in an Electrochemical Cell. <i>Journal of the Electrochemical Society</i> ,	3.9	1
8	Design concept of co-ionic conducting solid oxide electrolyte for stable operation in a cell-imbalanced fuel cell stack. <i>Journal of Power Sources</i> , 2021 , 512, 230483	8.9	1
7	Investigation of Electrode Kinetics of Porous La-Sr-Co-Fe-oxide (LSCF) Electrodes on Yttria-Stabilized Zirconia (YSZ) Electrolyte Using Alternating Current (AC) and Direct Current (DC) Methods. <i>Journal of the Electrochemical Society</i> , 2021 , 168, 064510	3.9	O
6	Conversion Kinetics and Ionic Conductivity in Na-FAlumina + YSZ (NaAY) Sodium Solid Electrolyte via Vapor Phase Conversion Process. <i>Membranes</i> , 2022 , 12, 567	3.8	O
5	Electrochemical Studies on Na-EAlumina + Yttria-Stabilized Zirconia (YSZ) Composite Mixed Na+-Ion-O2Eon Conductors. <i>Journal of the Electrochemical Society</i> , 2019 , 166, F679-F686	3.9	
4	Failure of Solid Oxide Fuel Cells by Electrochemically Induced Pressure. <i>Procedia IUTAM</i> , 2014 , 10, 328	-337	
3	Reply to Comment on Chemical Diffusion Coefficient of H2O in AB(1🛭)B?xO(3🗸/2)-Type Perovskites (174-1176)	3.8	
2	Flow Characteristics of a Vertical Spinning Disk, Low-Pressure Vapor Deposition Apparatus. <i>Journal of the American Ceramic Society</i> , 2005 , 80, 2131-2135	3.8	

Work of electrochemical pressurization of a pore in an oxygen ion conducting solid electrolyte and implications concerning solid oxide electrolyzer degradation **2020**, 341-362