Robert A Walker

List of Publications by Year
in descending order

94 papers	1,982 citations	236612 25 h-index	264894 42 g-index
96 all docs	96 docs citations	96 times ranked	1716 citing authors

#	Article	IF	Citations
1	Measuring dipolar width across liquidâ€“liquid interfaces with â€˜molecular rulersâ€™. Nature, 2003, 424, 296-299.	13.7	141
2	Phosphatidylcholine Monolayer Structure at a Liquidâ^'Liquid Interface. Journal of the American Chemical Society, 1998, 120, 6991-7003.	6.6	108
3	Structural and Compositional Characterization of Yttria-Stabilized Zirconia:â€‰ Evidence of Surface-Stabilized, Low-Valence Metal Species. Analytical Chemistry, 2005, 77, 1791-1795.	3.2	97
4	Hydrocarbon Fuels in Solid Oxide Fuel Cells:â€‰ In Situ Raman Studies of Graphite Formation and Oxidation. Journal of Physical Chemistry C, 2008, 112, 5232-5240.	1.5	88
5	In Situ Studies of Fuel Oxidation in Solid Oxide Fuel Cells. Analytical Chemistry, 2007, 79, 2367-2372.	3.2	87
6	Molecular Structure and Ordering of Phospholipids at a Liquidâ^'Liquid Interface. Langmuir, 1997, 13, 3070-3073.	1.6	86
7	High-Temperature Raman Spectroscopy of Solid Oxide Fuel Cell Materials and Processes. Journal of Physical Chemistry B, 2006, 110, 17305-17308.	1.2	84
8	Interfacial Organization of Acetonitrile: Simulation and Experiment. Journal of Physical Chemistry C, 2010, 114, 17651-17659.	1.5	74
9	Surface vibrational structure at alkane liquid/vapor interfaces. Journal of Chemical Physics, 2006, 125, 174701.	1.2	65
10	Direct, In Situ Optical Studies of Niâ^'YSZ Anodes in Solid Oxide Fuel Cells Operating with Methanol and Methane. Journal of Physical Chemistry C, 2011, 115, 2895-2903.	1.5	65
11	In Situ Optical Studies of Solid-Oxide Fuel Cells. Annual Review of Analytical Chemistry, 2010, 3, 151-174.	2.8	58
12	Effects of Reorientation in Vibrational Sum-Frequency Spectroscopyâ€. Journal of Physical Chemistry C, 2007, 111, 8902-8915.	1.5	56
13	In Situ Raman Studies of Carbon Removal from High Temperature Niâ€“YSZ Cermet Anodes by Gas Phase Reforming Agents. Journal of Physical Chemistry C, 2013, 117, 25908-25916.	1.5	51
14	Surface Structure at Hexadecane and Halo-hexadecane Liquid/Vapor Interfaces. Journal of Physical Chemistry B, 2004, 108, 10631-10635.	1.2	48
15	High-Temperature â€œSpectrochronopotentiometryâ€: Correlating Electrochemical Performance with In Situ Raman Spectroscopy in Solid Oxide Fuel Cells. Analytical Chemistry, 2012, 84, 9745-9753.	3.2	43
16	Differentiating Solvation Mechanisms at Polar Solid/Liquid Interfaces. Journal of the American Chemical Society, 2009, 131, 6207-6214.	6.6	36
17	Unusual Structure and Dynamics at Silica/Methanol and Silica/Ethanol Interfacesâ€”A Molecular Dynamics and Nonlinear Optical Study. Journal of Physical Chemistry B, 2016, 120, 1569-1578.	1.2	36
18	Nitriles at Silica Interfaces Resemble Supported Lipid Bilayers. Accounts of Chemical Research, 2016, 49, 1605-1613.	7.6	35

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19	Nonpolar Adsorption at the Silica/Methanol Interface: Surface Mediated Polarity and Solvent Density across a Strongly Associating Solid/Liquid Boundary. Journal of Physical Chemistry C, 2013, 117, 27052-27061.	1.5	34
20	Solvent Polarity across Strongly Associating Interfaces. Journal of Physical Chemistry B, 2004, 108, 16107-16116.	1.2	33
21	pH Effects on Molecular Adsorption and Solvation of p-Nitrophenol at Silica/Aqueous Interfaces. Journal of Physical Chemistry A, 2013, 117, 6224-6233.	1.1	30
22	Probing Solvent Polarity across Strongly Associating Solid/Liquid Interfaces Using Molecular Rulers. Journal of Physical Chemistry B, 2003, 107, 3829-3836.	1.2	29
23	In situ optical studies of methane and simulated biogas oxidation on high temperature solid oxide fuel cell anodes. Physical Chemistry Chemical Physics, 2014, 16, 227-236.	1.3	29
24	Comparing in Situ Carbon Tolerances of Sn-Infiltrated and BaO-Infiltrated Ni-YSZ Cermet Anodes in Solid Oxide Fuel Cells Exposed to Methane. Journal of Physical Chemistry C, 2015, 119, 7637-7647.	1.5	28
25	Spontaneous formation of DPPC monolayers at aqueous/vapor interfaces and the impact of charged surfactants. Biochimica Et Biophysica Acta - Biomembranes, 2008, 1778, 2368-2377.	1.4	26
26	Structure and Organization of Hexadecanol Isomers Adsorbed to the Air/Water Interface. Langmuir, 2006, 22, 8043-8049.	1.6	24
27	Balancing Hydrophobic and Hydrophilic Forces at the Water/Vapor Interface:â€‰ Surface Structure of Soluble Alcohol Monolayersâ€. Journal of Physical Chemistry C, 2007, 111, 8739-8748.	1.5	24
28	Toward a Working Mechanism of Fuel Oxidation in SOFCs: In Situ Optical Studies of Simulated Biogas and Methane. Journal of Physical Chemistry C, 2015, 119, 12781-12791.	1.5	23
29	n -alkane adsorption to polar silica surfaces. Journal of Chemical Physics, 2010, 132, 114701.	1.2	22
30	Reduced Polarity in Protic Solvents near Hydrophobic Solid Surfaces. Journal of the American Chemical Society, 2001, 123, 10768-10769.	6.6	21
31	Discrete Partitioning of Solvent Permittivity at Liquidâ^'Solid Interfaces. Langmuir, 2001, 17, 4486-4489.	1.6	19
32	High-Temperature Chemistry in Solid Oxide Fuel Cells: In Situ Optical Studies. Journal of Physical Chemistry Letters, 2012, 3, 3053-3064.	2.1	18
33	Behavior of Organic Liquids at Bare and Modified Silica Interfaces. Journal of Physical Chemistry C, 2010, 114, 394-402.	1.5	17
34	Binary Solvent Organization at Silica/Liquid Interfaces: Preferential Ordering in Acetonitrileâ€“Methanol Mixtures. Journal of Physical Chemistry Letters, 2014, 5, 2688-2693.	2.1	16
35	Operando Studies of Redox Resilience in ALT Enhanced NiO-YSZ SOFC Anodes. Journal of the Electrochemical Society, 2018, 165, F152-F157.	1.3	15
36	Vibrational studies of saccharide-induced lipid film reorganization at aqueous/air interfaces. Chemical Physics, 2018, 512, 104-110.	0.9	15

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37	High temperature mapping of surface electrolyte oxide concentration in solid oxide fuel cells with vibrational Raman spectroscopy. Analytical Methods, 2011, 3, 1478.	1.3	14
38	Palliative effects of H2 on SOFCs operating with carbon containing fuels. Journal of Power Sources, 2017, 372, 188-195.	4.0	14
39	Organic Enrichment at Aqueous Interfaces: Cooperative Adsorption of Glucuronic Acid to DPPC Monolayers Studied with Vibrational Sum Frequency Generation. Journal of Physical Chemistry A, 2019, 123, 5621-5632.	1.1	14
40	Cationic Molecular Rulers:â€‰ Synthesis, Characterization, and Intramolecular Complications. Langmuir, 2003, 19, 4933-4939.	1.6	11
41	Liquid organization and solvation properties at polar solid/liquid interfaces. Faraday Discussions, 2013, 167, 309.	1.6	11
42	(Invited) Insights into SOFC Ni/YSZ Anode Degradation Using In-Situ Spectrochronopotentiometrys. ECS Transactions, 2013, 50, 3-15.	0.3	11
43	Adsorption and Aggregation at Silica/Methanol Interfaces: The Role of Solute Structure. Journal of Physical Chemistry C, 2015, 119, 14230-14238.	1.5	11
44	In Operando Vibrational Raman Studies of Chlorine Contamination in Solid Oxide Fuel Cells. Journal of the Electrochemical Society, 2015, 162, F1310-F1315.	1.3	11
45	Temperature-Dependent Partitioning of Coumarin 152 in Phosphatidylcholine Lipid Bilayers. Journal of Physical Chemistry B, 2017, 121, 4061-4070.	1.2	10
46	Electrochemical and Operando Spectroscopic Studies of Sr₂Fe_{1.5}Mo_{0.5}O_{6â€‹Î´} Anode Catalysts in Solid Oxide Fuel Cells Operating with Direct Alcohol Fuels. ChemElectroChem, 2018, 5, 3162-3168.	1.7	10
47	Chlorine-Induced Degradation in Solid Oxide Fuel Cells Identified by Operando Optical Methods. Journal of Physical Chemistry C, 2017, 121, 2588-2596.	1.5	9
48	Operando optical studies of solid oxide fuel cells operating on CO and simulated syngas fuels. Journal of Power Sources, 2021, 492, 229598.	4.0	9
49	In Situ Optical Studies of Solid Oxide Fuel Cells Operating With Dry and Humidified Oxygenated Fuels. ECS Transactions, 2011, 35, 2789-2798.	0.3	8
50	(Invited) In Situ Optical and Electrochemical Studies of SOFC Carbon Tolerance. ECS Transactions, 2014, 61, 57-63.	0.3	8
51	Temperature Dependent Solvation and Partitioning of Coumarin 152 in Phospholipid Membranes. Journal of Physical Chemistry B, 2016, 120, 1805-1812.	1.2	8
52	A molecular level mechanism for uranium (VI) toxicity through Ca2+ displacement in pyrroloquinoline quinone-dependent bacterial dehydrogenase. Journal of Inorganic Biochemistry, 2015, 149, 59-67.	1.5	7
53	Reversible Decomposition of Secondary Phases in BaO Infiltrated LSM Electrodesâ€”Polarization Effects. Advanced Materials Interfaces, 2016, 3, 1600750.	1.9	7
54	Enhancing Ni-YSZ Anode Resilience to Environmental Redox Stress with Aluminum Titanate Secondary Phases. ACS Applied Energy Materials, 2018, 1, 6295-6302.	2.5	7

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55	Cooperative Adsorption of Trehalose to DPPC Monolayers at the Waterâ€“Air Interface Studied with Vibrational Sum Frequency Generation. Journal of Physical Chemistry B, 2019, 123, 8931-8938.	1.2	7
56	Surface solvation and hindered isomerization at the water/silica interface explored with second harmonic generation. Journal of Chemical Physics, 2019, 150, 194701.	1.2	7
57	Buried Liquid Interfaces as a Form of Chemistry in Confinement: The Case of 4-Dimethylaminobenzonitrile at the Silicaâ€“Aqueous Interface. Journal of the American Chemical Society, 2020, 142, 2375-2385.	6.6	7
58	Faster chemistry at surfaces. Nature Chemistry, 2021, 13, 296-297.	6.6	7
59	Chlorine-induced degradation in SOFCs operating with biogas. Sustainable Energy and Fuels, 2017, 1, 1320-1328.	2.5	6
60	Testing Novel Nickel and Cobalt Infiltrated STN Anodes for Carbon Tolerance using In Situ Raman Spectroscopy and Electrochemical Impedance Spectroscopy. Fuel Cells, 2019, 19, 484-493.	1.5	6
61	Coumarin Partitioning in Model Biological Membranes: Limitations of logâ€¯P as a Predictor. Journal of Physical Chemistry B, 2020, 124, 8299-8308.	1.2	6
62	Structure and Dynamics of Trimethylacetonitrile at the Silica/Vapor, Silica/Liquid, and Liquid/Vapor Interfaces. Journal of Physical Chemistry C, 2012, 116, 7000-7009.	1.5	5
63	In Situ Spectroscopic Studies of Carbon Formation in SOFCs Operating with Syn-gas. ECS Transactions, 2013, 57, 1267-1275.	0.3	5
64	Temperature-Dependent Partitioning of C152 in Binary Phosphatidylcholine Membranes and Mixed Phosphatidylcholine/Phosphatidylethanolamine Membranes. Journal of Physical Chemistry B, 2017, 121, 7889-7898.	1.2	5
65	Hindered Isomerization at the Silica/Aqueous Interface: Surface Polarity or Restricted Solvation?. Langmuir, 2018, 34, 9946-9949.	1.6	5
66	What does carbon tolerant really mean?Operandovibrational studies of carbon accumulation on novel solid oxide fuel cell anodes prepared by infiltration. Physical Chemistry Chemical Physics, 2020, 22, 9815-9823.	1.3	5
67	Operando optical studies of sulfur contamination in syngas operation of solid oxide fuel cells. Journal of Power Sources, 2021, 510, 230398.	4.0	5
68	Operando characterization of metallic and bimetallic electrocatalysts for SOFC fuel electrodes operating under internal methane reforming conditions. Journal of Materials Chemistry A, 2022, 10, 5550-5560.	5.2	5
69	Indoline: a versatile probe of specific and non-specific solvation forces. Physical Chemistry Chemical Physics, 2003, 5, 2020.	1.3	4
70	Quantifying Solute Partitioning in Phosphatidylcholine Membranes. Analytical Chemistry, 2017, 89, 12587-12595.	3.2	4
71	Degradation rate quantification of solid oxide fuel cell performance with and without Al2TiO5 addition. International Journal of Hydrogen Energy, 2018, 43, 15531-15536.	3.8	4
72	Solvation of Nitrophenol Isomers: Consequences for Solute Electronic Structure and Alkane/Water Partitioning. Journal of Physical Chemistry B, 2009, 113, 759-766.	1.2	3

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73	Improved Pulsed Laser Operation with Engineered Nanomaterials. ACS Applied Materials & Interfaces, 2016, 8, 19724-19731.	4.0	3
74	Mitigating Carbon Formation with Al₂TiO₅-Enhanced Solid Oxide Fuel Cell Anodes. Journal of Physical Chemistry C, 2019, 123, 11406-11413.	1.5	3
75	A continuous flow liquid propellant strand burner for high pressure monopropellant and bipropellant combustion studies. Review of Scientific Instruments, 2021, 92, 025106.	0.6	3
76	Surfactant Adsorption to Gypsum Surfaces and the Effects on Solubility in Aqueous Solutions. Langmuir, 2022, 38, 2804-2810.	1.6	3
77	Comparison of flame inception behavior of liquid nitromethane in inert and air environments. Combustion and Flame, 2022, 241, 112101.	2.8	3
78	In Situ Optical Studies of Oxidation Kinetics of Ni/YSZ Cermet Anodes. ECS Transactions, 2011, 33, 25-37.	0.3	2
79	Assessing Sulfur-Induced Degradation Mechanisms in SOFCs with Chronocoulometry and Operando Optical Imaging. ECS Transactions, 2019, 91, 1815-1825.	0.3	2
80	Electrochemical Sulfur Oxidation in Solid Oxide Fuel Cells Studied by Near Infrared Thermal Imaging and Chronocoulometry. Journal of the Electrochemical Society, 2020, 167, 164511.	1.3	2
81	Electrochemical and Operando Spectroscopic Studies of Sr2 Fe1.5 Mo0.5 O6-Î´ Anode Catalysts in Solid Oxide Fuel Cells Operating with Direct Alcohol Fuels. ChemElectroChem, 2018, 5, 3126-3126.	1.7	1
82	Operando Studies of Carbon Removal and Partial Oxidation in Solid Oxide Fuel Cells. ECS Transactions, 2019, 91, 629-640.	0.3	1
83	Yttria-stabilized barium zirconate surface reactivity at elevated temperatures. MRS Communications, 2020, 10, 455-460.	0.8	1
84	Amino acids change solute affinity for lipid bilayers. Biophysical Journal, 2021, 120, 3676-3687.	0.2	1
85	Operando Thermal Imaging Study of Internal Partial Methane Oxidation in Ni-YSZ Anodes of Commercial SOFCs. ECS Meeting Abstracts, 2021, MA2021-03, 41-41.	0.0	0
86	Masking Contaminant-Induced SOFC Anode Degradation with H2. ECS Meeting Abstracts, 2018, , .	0.0	0
87	(Invited) Building Resilience into Ni-YSZ Anodes with Secondary Phases. ECS Meeting Abstracts, 2019, , .	0.0	0
88	Probing Sulfur Contamination Mechanisms in Solid Oxide Fuel Cells Using Operando Methods. ECS Meeting Abstracts, 2019, , .	0.0	0
89	(Invited) Enhancing High Temperature Electrode Performance with Secondary Phases. ECS Meeting Abstracts, 2019, , .	0.0	0
90	Mitigating Carbon Formation in SOFCs with Aluminum Titanate Doped NiO-YSZ Anodes. ECS Meeting Abstracts, 2019, , .	0.0	0

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91	Assessing Sulfur-Induced Degradation Mechanisms in SOFCs with Operando Thermal Imaging and Chronocoulometry. ECS Meeting Abstracts, 2020, MA2020-02, 2559-2559.	0.0	0
92	Operando Optical Studies of Sulfur Contamination in Syngas Operation of Solid Oxide Fuel Cells. ECS Meeting Abstracts, 2020, MA2020-02, 2557-2557.	0.0	0
93	Operando Raman Spectroscopy and Impedance Spectroscopy, a Powerful Combination to Better Understand Fuel Electrodes in Solid Oxide Cells. ECS Meeting Abstracts, 2020, MA2020-02, 2561-2561.	0.0	0
94	Studying Proton Conducting Ceramic Electrolyte Stability with in Situ Raman Spectroscopy. ECS Meeting Abstracts, 2020, MA2020-02, 1186-1186.	0.0	0