

# Robert A Walker

## List of Publications by Year in descending order

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94  
papers

1,982  
citations

236612

25  
h-index

264894

42  
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96  
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96  
docs citations

96  
times ranked

1716  
citing authors

#	ARTICLE	IF	CITATIONS
1	<i>Operando</i> characterization of metallic and bimetallic electrocatalysts for SOFC fuel electrodes operating under internal methane reforming conditions. <i>Journal of Materials Chemistry A</i> , 2022, 10, 5550-5560.	5.2	5
2	Surfactant Adsorption to Gypsum Surfaces and the Effects on Solubility in Aqueous Solutions. <i>Langmuir</i> , 2022, 38, 2804-2810.	1.6	3
3	Comparison of flame inception behavior of liquid nitromethane in inert and air environments. <i>Combustion and Flame</i> , 2022, 241, 112101.	2.8	3
4	A continuous flow liquid propellant strand burner for high pressure monopropellant and bipropellant combustion studies. <i>Review of Scientific Instruments</i> , 2021, 92, 025106.	0.6	3
5	Faster chemistry at surfaces. <i>Nature Chemistry</i> , 2021, 13, 296-297.	6.6	7
6	<i>Operando</i> optical studies of solid oxide fuel cells operating on CO and simulated syngas fuels. <i>Journal of Power Sources</i> , 2021, 492, 229598.	4.0	9
7	<i>Operando</i> Thermal Imaging Study of Internal Partial Methane Oxidation in Ni-YSZ Anodes of Commercial SOFCs. <i>ECS Meeting Abstracts</i> , 2021, MA2021-03, 41-41.	0.0	0
8	Amino acids change solute affinity for lipid bilayers. <i>Biophysical Journal</i> , 2021, 120, 3676-3687.	0.2	1
9	<i>Operando</i> optical studies of sulfur contamination in syngas operation of solid oxide fuel cells. <i>Journal of Power Sources</i> , 2021, 510, 230398.	4.0	5
10	Coumarin Partitioning in Model Biological Membranes: Limitations of $\log K_P$ as a Predictor. <i>Journal of Physical Chemistry B</i> , 2020, 124, 8299-8308.	1.2	6
11	Yttria-stabilized barium zirconate surface reactivity at elevated temperatures. <i>MRS Communications</i> , 2020, 10, 455-460.	0.8	1
12	Buried Liquid Interfaces as a Form of Chemistry in Confinement: The Case of 4-Dimethylaminobenzonitrile at the Silica-Aqueous Interface. <i>Journal of the American Chemical Society</i> , 2020, 142, 2375-2385.	6.6	7
13	What does carbon tolerant really mean? <i>Operando</i> vibrational studies of carbon accumulation on novel solid oxide fuel cell anodes prepared by infiltration. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 9815-9823.	1.3	5
14	Electrochemical Sulfur Oxidation in Solid Oxide Fuel Cells Studied by Near Infrared Thermal Imaging and Chronocoulometry. <i>Journal of the Electrochemical Society</i> , 2020, 167, 164511.	1.3	2
15	Assessing Sulfur-Induced Degradation Mechanisms in SOFCs with <i>Operando</i> Thermal Imaging and Chronocoulometry. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 2559-2559.	0.0	0
16	<i>Operando</i> Optical Studies of Sulfur Contamination in Syngas Operation of Solid Oxide Fuel Cells. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 2557-2557.	0.0	0
17	<i>Operando</i> Raman Spectroscopy and Impedance Spectroscopy, a Powerful Combination to Better Understand Fuel Electrodes in Solid Oxide Cells. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 2561-2561.	0.0	0
18	Studying Proton Conducting Ceramic Electrolyte Stability with in Situ Raman Spectroscopy. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 1186-1186.	0.0	0

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19	Assessing Sulfur-Induced Degradation Mechanisms in SOFCs with Chronocoulometry and Operando Optical Imaging. ECS Transactions, 2019, 91, 1815-1825.	0.3	2
20	Cooperative Adsorption of Trehalose to DPPC Monolayers at the Water-Air Interface Studied with Vibrational Sum Frequency Generation. Journal of Physical Chemistry B, 2019, 123, 8931-8938.	1.2	7
21	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
22	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
23	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
24	Mitigating Carbon Formation with Al <sub>2</sub> TiO <sub>5</sub> -Enhanced Solid Oxide Fuel Cell Anodes. Journal of Physical Chemistry C, 2019, 123, 11406-11413.	1.5	3
25	Operando Studies of Carbon Removal and Partial Oxidation in Solid Oxide Fuel Cells. ECS Transactions, 2019, 91, 629-640.	0.3	1
26	(Invited) Building Resilience into Ni-YSZ Anodes with Secondary Phases. ECS Meeting Abstracts, 2019, , .	0.0	0
27	Probing Sulfur Contamination Mechanisms in Solid Oxide Fuel Cells Using Operando Methods. ECS Meeting Abstracts, 2019, , .	0.0	0
28	(Invited) Enhancing High Temperature Electrode Performance with Secondary Phases. ECS Meeting Abstracts, 2019, , .	0.0	0
29	Mitigating Carbon Formation in SOFCs with Aluminum Titanate Doped NiO-YSZ Anodes. ECS Meeting Abstracts, 2019, , .	0.0	0
30	Operando Studies of Redox Resilience in ALT Enhanced NiO-YSZ SOFC Anodes. Journal of the Electrochemical Society, 2018, 165, F152-F157.	1.3	15
31	Vibrational studies of saccharide-induced lipid film reorganization at aqueous/air interfaces. Chemical Physics, 2018, 512, 104-110.	0.9	15
32	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
33	Electrochemical and Operando Spectroscopic Studies of Sr <sub>2</sub> Fe <sub>1.5</sub> Mo <sub>0.5</sub> O <sub>6-δ</sub> Anode Catalysts in Solid Oxide Fuel Cells Operating with Direct Alcohol Fuels. ChemElectroChem, 2018, 5, 3126-3126.	1.7	1
34	Electrochemical and Operando Spectroscopic Studies of Sr <sub>2</sub> Fe <sub>1.5</sub> Mo <sub>0.5</sub> O <sub>6-δ</sub> Anode Catalysts in Solid Oxide Fuel Cells Operating with Direct Alcohol Fuels. ChemElectroChem, 2018, 5, 3162-3168.	1.7	10
35	Hindered Isomerization at the Silica/Aqueous Interface: Surface Polarity or Restricted Solvation?. Langmuir, 2018, 34, 9946-9949.	1.6	5
36	Degradation rate quantification of solid oxide fuel cell performance with and without Al <sub>2</sub> TiO <sub>5</sub> addition. International Journal of Hydrogen Energy, 2018, 43, 15531-15536.	3.8	4

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37	Masking Contaminant-Induced SOFC Anode Degradation with H <sub>2</sub> . ECS Meeting Abstracts, 2018, , ,	0.0	0
38	Chlorine-Induced Degradation in Solid Oxide Fuel Cells Identified by <i>Operando</i> Optical Methods. Journal of Physical Chemistry C, 2017, 121, 2588-2596.	1.5	9
39	Temperature-Dependent Partitioning of Coumarin 152 in Phosphatidylcholine Lipid Bilayers. Journal of Physical Chemistry B, 2017, 121, 4061-4070.	1.2	10
40	Chlorine-induced degradation in SOFCs operating with biogas. Sustainable Energy and Fuels, 2017, 1, 1320-1328.	2.5	6
41	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
42	Quantifying Solute Partitioning in Phosphatidylcholine Membranes. Analytical Chemistry, 2017, 89, 12587-12595.	3.2	4
43	Palliative effects of H <sub>2</sub> on SOFCs operating with carbon containing fuels. Journal of Power Sources, 2017, 372, 188-195.	4.0	14
44	Improved Pulsed Laser Operation with Engineered Nanomaterials. ACS Applied Materials & Interfaces, 2016, 8, 19724-19731.	4.0	3
45	Reversible Decomposition of Secondary Phases in BaO Infiltrated LSM Electrodes—Polarization Effects. Advanced Materials Interfaces, 2016, 3, 1600750.	1.9	7
46	Nitriles at Silica Interfaces Resemble Supported Lipid Bilayers. Accounts of Chemical Research, 2016, 49, 1605-1613.	7.6	35
47	Temperature Dependent Solvation and Partitioning of Coumarin 152 in Phospholipid Membranes. Journal of Physical Chemistry B, 2016, 120, 1805-1812.	1.2	8
48	Unusual Structure and Dynamics at Silica/Methanol and Silica/Ethanol Interfaces—A Molecular Dynamics and Nonlinear Optical Study. Journal of Physical Chemistry B, 2016, 120, 1569-1578.	1.2	36
49	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
50	A molecular level mechanism for uranium (VI) toxicity through Ca <sup>2+</sup> displacement in pyrroloquinoline quinone-dependent bacterial dehydrogenase. Journal of Inorganic Biochemistry, 2015, 149, 59-67.	1.5	7
51	Adsorption and Aggregation at Silica/Methanol Interfaces: The Role of Solute Structure. Journal of Physical Chemistry C, 2015, 119, 14230-14238.	1.5	11
52	Comparing <i>In Situ</i> 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
53	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
54	(Invited) In Situ Optical and Electrochemical Studies of SOFC Carbon Tolerance. ECS Transactions, 2014, 61, 57-63.	0.3	8

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55	In situ optical studies of methane and simulated biogas oxidation on high temperature solid oxide fuel cell anodes. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 227-236.	1.3	29
56	Binary Solvent Organization at Silica/Liquid Interfaces: Preferential Ordering in Acetonitrile-Methanol Mixtures. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 2688-2693.	2.1	16
57	pH Effects on Molecular Adsorption and Solvation of <i>p</i> -Nitrophenol at Silica/Aqueous Interfaces. <i>Journal of Physical Chemistry A</i> , 2013, 117, 6224-6233.	1.1	30
58	In Situ Spectroscopic Studies of Carbon Formation in SOFCs Operating with Syn-gas. <i>ECS Transactions</i> , 2013, 57, 1267-1275.	0.3	5
59	<i>In Situ</i> Raman Studies of Carbon Removal from High Temperature Ni-YSZ Cermet Anodes by Gas Phase Reforming Agents. <i>Journal of Physical Chemistry C</i> , 2013, 117, 25908-25916.	1.5	51
60	Liquid organization and solvation properties at polar solid/liquid interfaces. <i>Faraday Discussions</i> , 2013, 167, 309.	1.6	11
61	Nonpolar Adsorption at the Silica/Methanol Interface: Surface Mediated Polarity and Solvent Density across a Strongly Associating Solid/Liquid Boundary. <i>Journal of Physical Chemistry C</i> , 2013, 117, 27052-27061.	1.5	34
62	(Invited) Insights into SOFC Ni/YSZ Anode Degradation Using In-Situ Spectrochronopotentiometry. <i>ECS Transactions</i> , 2013, 50, 3-15.	0.3	11
63	Structure and Dynamics of Trimethylacetone at the Silica/Vapor, Silica/Liquid, and Liquid/Vapor Interfaces. <i>Journal of Physical Chemistry C</i> , 2012, 116, 7000-7009.	1.5	5
64	High-Temperature Chemistry in Solid Oxide Fuel Cells: In Situ Optical Studies. <i>Journal of Physical Chemistry Letters</i> , 2012, 3, 3053-3064.	2.1	18
65	High-Temperature Spectrochronopotentiometry: Correlating Electrochemical Performance with In Situ Raman Spectroscopy in Solid Oxide Fuel Cells. <i>Analytical Chemistry</i> , 2012, 84, 9745-9753.	3.2	43
66	In Situ Optical Studies of Oxidation Kinetics of Ni/YSZ Cermet Anodes. <i>ECS Transactions</i> , 2011, 33, 25-37.	0.3	2
67	High temperature mapping of surface electrolyte oxide concentration in solid oxide fuel cells with vibrational Raman spectroscopy. <i>Analytical Methods</i> , 2011, 3, 1478.	1.3	14
68	Direct, In Situ Optical Studies of Ni-YSZ Anodes in Solid Oxide Fuel Cells Operating with Methanol and Methane. <i>Journal of Physical Chemistry C</i> , 2011, 115, 2895-2903.	1.5	65
69	In Situ Optical Studies of Solid Oxide Fuel Cells Operating With Dry and Humidified Oxygenated Fuels. <i>ECS Transactions</i> , 2011, 35, 2789-2798.	0.3	8
70	n-alkane adsorption to polar silica surfaces. <i>Journal of Chemical Physics</i> , 2010, 132, 114701.	1.2	22
71	Behavior of Organic Liquids at Bare and Modified Silica Interfaces. <i>Journal of Physical Chemistry C</i> , 2010, 114, 394-402.	1.5	17
72	Interfacial Organization of Acetonitrile: Simulation and Experiment. <i>Journal of Physical Chemistry C</i> , 2010, 114, 17651-17659.	1.5	74

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73	In Situ Optical Studies of Solid-Oxide Fuel Cells. <i>Annual Review of Analytical Chemistry</i> , 2010, 3, 151-174.	2.8	58
74	Solvation of Nitrophenol Isomers: Consequences for Solute Electronic Structure and Alkane/Water Partitioning. <i>Journal of Physical Chemistry B</i> , 2009, 113, 759-766.	1.2	3
75	Differentiating Solvation Mechanisms at Polar Solid/Liquid Interfaces. <i>Journal of the American Chemical Society</i> , 2009, 131, 6207-6214.	6.6	36
76	Spontaneous formation of DPPC monolayers at aqueous/vapor interfaces and the impact of charged surfactants. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2008, 1778, 2368-2377.	1.4	26
77	Hydrocarbon Fuels in Solid Oxide Fuel Cells: In Situ Raman Studies of Graphite Formation and Oxidation. <i>Journal of Physical Chemistry C</i> , 2008, 112, 5232-5240.	1.5	88
78	In Situ Studies of Fuel Oxidation in Solid Oxide Fuel Cells. <i>Analytical Chemistry</i> , 2007, 79, 2367-2372.	3.2	87
79	Effects of Reorientation in Vibrational Sum-Frequency Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2007, 111, 8902-8915.	1.5	56
80	Balancing Hydrophobic and Hydrophilic Forces at the Water/Vapor Interface: Surface Structure of Soluble Alcohol Monolayers. <i>Journal of Physical Chemistry C</i> , 2007, 111, 8739-8748.	1.5	24
81	Structure and Organization of Hexadecanol Isomers Adsorbed to the Air/Water Interface. <i>Langmuir</i> , 2006, 22, 8043-8049.	1.6	24
82	High-Temperature Raman Spectroscopy of Solid Oxide Fuel Cell Materials and Processes. <i>Journal of Physical Chemistry B</i> , 2006, 110, 17305-17308.	1.2	84
83	Surface vibrational structure at alkane liquid/vapor interfaces. <i>Journal of Chemical Physics</i> , 2006, 125, 174701.	1.2	65
84	Structural and Compositional Characterization of Yttria-Stabilized Zirconia: Evidence of Surface-Stabilized, Low-Valence Metal Species. <i>Analytical Chemistry</i> , 2005, 77, 1791-1795.	3.2	97
85	Surface Structure at Hexadecane and Halo-hexadecane Liquid/Vapor Interfaces. <i>Journal of Physical Chemistry B</i> , 2004, 108, 10631-10635.	1.2	48
86	Solvent Polarity across Strongly Associating Interfaces. <i>Journal of Physical Chemistry B</i> , 2004, 108, 16107-16116.	1.2	33
87	Measuring dipolar width across liquid-liquid interfaces with "molecular rulers". <i>Nature</i> , 2003, 424, 296-299.	13.7	141
88	Cationic Molecular Rulers: Synthesis, Characterization, and Intramolecular Complications. <i>Langmuir</i> , 2003, 19, 4933-4939.	1.6	11
89	Probing Solvent Polarity across Strongly Associating Solid/Liquid Interfaces Using Molecular Rulers. <i>Journal of Physical Chemistry B</i> , 2003, 107, 3829-3836.	1.2	29
90	Indoline: a versatile probe of specific and non-specific solvation forces. <i>Physical Chemistry Chemical Physics</i> , 2003, 5, 2020.	1.3	4

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91	Reduced Polarity in Protic Solvents near Hydrophobic Solid Surfaces. Journal of the American Chemical Society, 2001, 123, 10768-10769.	6.6	21
92	Discrete Partitioning of Solvent Permittivity at Liquid-Solid Interfaces. Langmuir, 2001, 17, 4486-4489.	1.6	19
93	Phosphatidylcholine Monolayer Structure at a Liquid-Liquid Interface. Journal of the American Chemical Society, 1998, 120, 6991-7003.	6.6	108
94	Molecular Structure and Ordering of Phospholipids at a Liquid-Liquid Interface. Langmuir, 1997, 13, 3070-3073.	1.6	86