

# Steven C Decaluwe

## List of Publications by Year in descending order

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Version: 2024-02-01

40  
papers

1,113  
citations

516710

16  
h-index

434195

31  
g-index

40  
all docs

40  
docs citations

40  
times ranked

1877  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measuring fundamental properties in operating solid oxide electrochemical cells by using in situ X-ray photoelectron spectroscopy. <i>Nature Materials</i> , 2010, 9, 944-949.	27.5	257
2	Solid Electrolyte Interphase in Li-Ion Batteries: Evolving Structures Measured In situ by Neutron Reflectometry. <i>Chemistry of Materials</i> , 2012, 24, 2133-2140.	6.7	149
3	In Situ Characterization of Ceria Oxidation States in High-Temperature Electrochemical Cells with Ambient Pressure XPS. <i>Journal of Physical Chemistry C</i> , 2010, 114, 19853-19861.	3.1	81
4	Structure-property relationships at Nafion thin-film interfaces: Thickness effects on hydration and anisotropic ion transport. <i>Nano Energy</i> , 2018, 46, 91-100.	16.0	77
5	Phase segregation of sulfonate groups in Nafion interface lamellae, quantified via neutron reflectometry fitting techniques for multi-layered structures. <i>Soft Matter</i> , 2014, 10, 5763-5776.	2.7	68
6	Multielement Activity Mapping and Potential Mapping in Solid Oxide Electrochemical Cells through the use of <i>operando</i> XPS. <i>ACS Catalysis</i> , 2012, 2, 2297-2304.	11.2	63
7	Computational fluid dynamics simulations of polarization phenomena in direct contact membrane distillation. <i>Journal of Membrane Science</i> , 2019, 591, 117150.	8.2	47
8	Temperature-Dependent Solubility of Solid Electrolyte Interphase on Silicon Electrodes. <i>ACS Energy Letters</i> , 2019, 4, 2770-2775.	17.4	45
9	Importance of Anode Microstructure in Modeling Solid Oxide Fuel Cells. <i>Journal of the Electrochemical Society</i> , 2008, 155, B538.	2.9	43
10	Impact of non-ideal behavior on ignition delay and chemical kinetics in high-pressure shock tube reactors. <i>Combustion and Flame</i> , 2018, 189, 1-11.	5.2	37
11	Direct, <i>operando</i> observation of the bilayer solid electrolyte interphase structure: Electrolyte reduction on a non-intercalating electrode. <i>Journal of Power Sources</i> , 2019, 412, 725-735.	7.8	29
12	Microscopic Observation of Solid Electrolyte Interphase Bilayer Inversion on Silicon Oxide. <i>ACS Energy Letters</i> , 2020, 5, 3657-3662.	17.4	26
13	On the Fundamental and Practical Aspects of Modeling Complex Electrochemical Kinetics and Transport. <i>Journal of the Electrochemical Society</i> , 2018, 165, E637-E658.	2.9	20
14	Evolution of solid electrolyte interphase and active material in the silicon wafer model system. <i>Journal of Power Sources</i> , 2021, 482, 228946.	7.8	19
15	A Minimal Information Set To Enable Verifiable Theoretical Battery Research. <i>ACS Energy Letters</i> , 2021, 6, 3831-3835.	17.4	19
16	Thermodynamic Insights for Electrochemical Hydrogen Compression with Proton-Conducting Membranes. <i>Membranes</i> , 2019, 9, 77.	3.0	18
17	Free Radicals: Making a Case for Battery Modeling. <i>Electrochemical Society Interface</i> , 2020, 29, 30-34.	0.4	16
18	The Influence of Hydrogen-Permeable Membranes and Pressure on Methane Dehydroaromatization in Packed-Bed Catalytic Reactors. <i>Industrial &amp; Engineering Chemistry Research</i> , 2017, 56, 3551-3559.	3.7	15

#	ARTICLE	IF	CITATIONS
19	Kinetics of lithium electrodeposition and stripping. <i>Journal of Chemical Physics</i> , 2020, 153, 194701.	3.0	15
20	Modeling and simulation of the thermodynamics of lithium-ion battery intercalation materials in the open-source software Cantera. <i>Electrochimica Acta</i> , 2019, 323, 134797.	5.2	14
21	Improving Interface Stability of Si Anodes by Mg Coating in Li-Ion Batteries. <i>ACS Applied Energy Materials</i> , 2020, 3, 11534-11539.	5.1	10
22	Fostering a Sustainable Community in Batteries. <i>ACS Energy Letters</i> , 2020, 5, 2361-2366.	17.4	9
23	Three-Dimensional Mapping of Resistivity and Microstructure of Composite Electrodes for Lithium-Ion Batteries. <i>Nano Letters</i> , 2020, 20, 8081-8088.	9.1	7
24	Physically Based Modeling of PEMFC Cathode Catalyst Layers: Effective Microstructure and Ionomer Structure—Property Relationship Impacts. <i>Journal of Electrochemical Energy Conversion and Storage</i> , 2020, 17, .	2.1	7
25	In Situ XPS for Evaluating Ceria Oxidation States in SOFC Anodes. <i>ECS Transactions</i> , 2009, 16, 253-263.	0.5	6
26	Finite Thickness Effects on Nafion Water Uptake and Ionic Conductivity at Hydrophilic Substrate Interfaces, and Implications for PEMFC Performance. <i>ECS Transactions</i> , 2017, 80, 619-632.	0.5	5
27	Open Software for Chemical and Electrochemical Modeling: Opportunities and Challenges. <i>Electrochemical Society Interface</i> , 2019, 28, 47-50.	0.4	4
28	Evaluating H <sub>2</sub> O Electrolysis on Ceria with Thin-Film Electrodes. <i>ECS Transactions</i> , 2010, 28, 347-356.	0.5	2
29	Experimentally Validated Simulations of Undoped Ceria Electrodes for H <sub>2</sub> Oxidation and H <sub>2</sub> O Electrolysis in Solid Oxide Electrochemical Cells. <i>ECS Transactions</i> , 2011, 35, 2883-2895.	0.5	2
30	Direct, operando observation of the bilayer solid electrolyte interphase structure: Electrolyte reduction on a non-intercalating electrode. <i>Journal of Power Sources</i> , 2019, 412, .	7.8	2
31	Pathways Toward High-energy Li-sulfur Batteries, Identified via Multi-reaction Chemical Modeling. <i>Journal of the Electrochemical Society</i> , 2022, 169, 010520.	2.9	1
32	Three-Dimensional Mapping of Cycling Changes in Silicon-Graphite Composite Anodes Via Scanning Probe Microscopy. <i>ECS Meeting Abstracts</i> , 2021, MA2021-01, 113-113.	0.0	0
33	Development of a Detailed Nucleation and Growth Model for CANTERA Implemented in Li-Air Batteries. <i>ECS Meeting Abstracts</i> , 2021, MA2021-02, 173-173.	0.0	0
34	Multiscale Modeling of Solid Electrolyte Interphase Growth in Silicon Anodes. <i>ECS Meeting Abstracts</i> , 2021, MA2021-02, 382-382.	0.0	0
35	Predicted Impacts of Catalyst Layer Ionomer Microstructure and Distribution on PEMFC Performance. <i>ECS Meeting Abstracts</i> , 2021, MA2021-02, 1084-1084.	0.0	0
36	Operando Characterization of the Solid Electrolyte Interphase: A Means to Validate Detailed Chemical Kinetic Modeling. <i>ECS Meeting Abstracts</i> , 2021, MA2021-02, 1492-1492.	0.0	0

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37	Using Neutron Reflectometry to Quantify the Carbon-Nafion Interface for Proton Exchange Membrane Fuel Cell Applications. ECS Meeting Abstracts, 2022, MA2022-01, 1409-1409.	0.0	0
38	Predicted Impacts of Graded Catalyst Layer Ionomer and Pt Distributions on PEMFC Performance. ECS Meeting Abstracts, 2022, MA2022-01, 1699-1699.	0.0	0
39	An FTIR Study of Electrolyte Dynamics in Lithium-Air Batteries. ECS Meeting Abstracts, 2022, MA2022-01, 113-113.	0.0	0
40	(Invited, Digital Presentation) Detailed Chemical Modeling of Solid Electrolyte Interphase Growth and Evolution. ECS Meeting Abstracts, 2022, MA2022-01, 1660-1660.	0.0	0