

Venkat R Subramanian

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

48
papers

3,219
citations

19
h-index

56
g-index

98
ext. papers

4,000
ext. citations

5.5
avg, IF

5.28
L-index

#	Paper	IF	Citations
48	Pathways for practical high-energy long-cycling lithium metal batteries. <i>Nature Energy</i> , 2019 , 4, 180-186	62.3	1202
47	Modeling and Simulation of Lithium-Ion Batteries from a Systems Engineering Perspective. <i>Journal of the Electrochemical Society</i> , 2012 , 159, R31-R45	3.9	436
46	Efficient Macro-Micro Scale Coupled Modeling of Batteries. <i>Journal of the Electrochemical Society</i> , 2005 , 152, A2002	3.9	238
45	Mathematical Model Reformulation for Lithium-Ion Battery Simulations: Galvanostatic Boundary Conditions. <i>Journal of the Electrochemical Society</i> , 2009 , 156, A260	3.9	205
44	Coordinate Transformation, Orthogonal Collocation, Model Reformulation and Simulation of Electrochemical-Thermal Behavior of Lithium-Ion Battery Stacks. <i>Journal of the Electrochemical Society</i> , 2011 , 158, A1461	3.9	129
43	Parameter Estimation and Capacity Fade Analysis of Lithium-Ion Batteries Using Reformulated Models. <i>Journal of the Electrochemical Society</i> , 2011 , 158, A1048	3.9	106
42	Approximate Solutions for Galvanostatic Discharge of Spherical Particles I. Constant Diffusion Coefficient. <i>Journal of the Electrochemical Society</i> , 2001 , 148, E444	3.9	105
41	Efficient Reformulation of Solid-Phase Diffusion in Physics-Based Lithium-Ion Battery Models. <i>Journal of the Electrochemical Society</i> , 2010 , 157, A854	3.9	101
40	Toward Real-Time Simulation of Physics Based Lithium-Ion Battery Models. <i>Electrochemical and Solid-State Letters</i> , 2007 , 10, A255		86
39	Efficient Simulation and Reformulation of Lithium-Ion Battery Models for Enabling Electric Transportation. <i>Journal of the Electrochemical Society</i> , 2014 , 161, E3149-E3157	3.9	57
38	Towards real-time (milliseconds) parameter estimation of lithium-ion batteries using reformulated physics-based models. <i>Journal of Power Sources</i> , 2008 , 183, 361-365	8.9	54
37	TRANSFORM-ANN for online optimization of complex industrial processes: Casting process as case study. <i>European Journal of Operational Research</i> , 2018 , 264, 294-309	5.6	46
36	Data science: Accelerating innovation and discovery in chemical engineering. <i>AIChE Journal</i> , 2016 , 62, 1402-1416	3.6	44
35	A Boundary Condition for Porous Electrodes. <i>Electrochemical and Solid-State Letters</i> , 2004 , 7, A259		43
34	Model-Based SEI Layer Growth and Capacity Fade Analysis for EV and PHEV Batteries and Drive Cycles. <i>Journal of the Electrochemical Society</i> , 2014 , 161, A2099-A2108	3.9	42
33	Efficient Simulation and Model Reformulation of Two-Dimensional Electrochemical Thermal Behavior of Lithium-Ion Batteries. <i>Journal of the Electrochemical Society</i> , 2015 , 162, A940-A951	3.9	37
32	Data Science Approaches for Electrochemical Engineers: An Introduction through Surrogate Model Development for Lithium-Ion Batteries. <i>Journal of the Electrochemical Society</i> , 2018 , 165, A1-A15	3.9	35

31	Chitosan hydrogel-based electrode binder and electrolyte membrane for EDLCs: experimental studies and model validation. <i>Journal of Applied Electrochemistry</i> , 2012 , 42, 935-943	2.6	30
30	Computational Methods in Chemical Engineering with Maple 2010 ,		24
29	Analytical solution for electrolyte concentration distribution in lithium-ion batteries. <i>Journal of Applied Electrochemistry</i> , 2012 , 42, 189-199	2.6	17
28	A Semianalytical Method for Predicting Primary and Secondary Current Density Distributions: Linear and Nonlinear Boundary Conditions. <i>Journal of the Electrochemical Society</i> , 2000 , 147, 1636	3.9	17
27	A perturbation approach for consistent initialization of index-1 explicit differential-algebraic equations arising from battery model simulations. <i>Computers and Chemical Engineering</i> , 2011 , 35, 2227-2234	4	16
26	Extending explicit and linearly implicit ODE solvers for index-1 DAEs. <i>Computers and Chemical Engineering</i> , 2015 , 82, 283-292	4	15
25	(Invited) Analyzing and Minimizing Capacity Fade through Optimal Model-based Control - Theory and Experimental Validation. <i>ECS Transactions</i> , 2017 , 75, 51-75	1	13
24	Modeling the Cooperative Adsorption of Solid-Binding Proteins on Silica: Molecular Insights from Surface Plasmon Resonance Measurements. <i>Langmuir</i> , 2019 , 35, 5013-5020	4	12
23	Real-time Nonlinear Model Predictive Control (NMPC) Strategies using Physics-Based Models for Advanced Lithium-ion Battery Management System (BMS). <i>Journal of the Electrochemical Society</i> , 2020 , 167, 063505	3.9	12
22	Dynamic Electrochemical Impedance Spectroscopy of Lithium-ion Batteries: Revealing Underlying Physics through Efficient Joint Time-Frequency Modeling. <i>Journal of the Electrochemical Society</i> , 2021 , 168, 010526	3.9	11
21	On the Creation of a Chess-AI-Inspired Problem-Specific Optimizer for the Pseudo Two-Dimensional Battery Model Using Neural Networks. <i>Journal of the Electrochemical Society</i> , 2019 , 166, A886-A896	3.9	9
20	Efficient Reformulation of Solid Phase Diffusion in Electrochemical-Mechanical Coupled Models for Lithium-Ion Batteries: Effect of Intercalation Induced Stresses. <i>Journal of the Electrochemical Society</i> , 2013 , 160, A1675-A1683	3.9	9
19	Generic Model Control for Lithium-Ion Batteries. <i>Journal of the Electrochemical Society</i> , 2017 , 164, A973-A986	3.9	7
18	Editors' Choice Perspective Challenges in Moving to Multiscale Battery Models: Where Electrochemistry Meets and Demands More from Math. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 133501	3.9	7
17	Analysis and Simulation of One-Dimensional Transport Models for Lithium Symmetric Cells. <i>Journal of the Electrochemical Society</i> , 2019 , 166, A3806-A3819	3.9	7
16	Properly Lumped Lithium-ion Battery Models: A Tanks-in-Series Approach. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 013534	3.9	6
15	Fast Impedance Simulation of Lithium-Ion Batteries with Pseudo-Two Dimensional Electrochemical Models. <i>Journal of the Electrochemical Society</i> , 2018 , 165, A1324-A1337	3.9	5
14	Open Data, Models, and Codes for Vanadium Redox Batch Cell Systems: A Systems Approach Using Zero-Dimensional Models. <i>Journal of Electrochemical Energy Conversion and Storage</i> , 2020 , 17,	2	5

13	Lithium-ion battery physics and statistics-based state of health model. <i>Journal of Power Sources</i> , 2021 , 501, 230032	8.9	5
12	An Efficient Electrochemical Tanks-in-Series Model for Lithium Sulfur Batteries. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 163503	3.9	4
11	Realigning the Chemistry and Parameterization of Lithium-Sulfur Battery Models to Accommodate Emerging Experimental Evidence and Cell Configurations. <i>ChemElectroChem</i> , 2021 , 8, 1098-1106	4.3	4
10	A Minimal Information Set To Enable Verifiable Theoretical Battery Research. <i>ACS Energy Letters</i> , 2021 , 6, 3831-3835	3.8	3
9	An Efficient Electrochemical-Thermal Tanks-in-Series Model for Lithium-Ion Batteries. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 113506	3.9	3
8	Estimation of Transport and Kinetic Parameters of Vanadium Redox Batteries Using Static Cells. <i>ECS Transactions</i> , 2018 , 85, 43-64	1	2
7	Progress on continuum modeling of lithium-sulfur batteries. <i>Sustainable Energy and Fuels</i> , 2021 , 5, 10000	5.8	2
6	Perspective: Mass Conservation in Models for Electrodeposition/Stripping in Lithium Metal Batteries. <i>Journal of the Electrochemical Society</i> , 2021 , 168, 092502	3.9	2
5	Can a Transport Model Predict Inverse Signatures in Lithium Metal Batteries Without Modifying Kinetics?. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 160547	3.9	2
4	Early Failure of Lithium-Sulfur Batteries at Practical Conditions: Crosstalk between Sulfur Cathode and Lithium Anode.. <i>Advanced Science</i> , 2022 , e2201640	13.6	2
3	Model-based simultaneous optimization of multiple design parameters for lithium-ion batteries for maximization of energy density 2012 ,		1
2	Multiscale Modelling of Nanostructured Foil Anode for Next Generation Batteries. <i>ECS Meeting Abstracts</i> , 2021 , MA2021-01, 384-384	0	0
1	Physics-Based Impedance Model of Lithium Sulfur Batteries. <i>ECS Meeting Abstracts</i> , 2021 , MA2021-01, 983-983	0	0