Venkat R Subramanian

List of Publications by Year in Descending Order

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	Early Failure of Lithium-Sulfur Batteries at Practical Conditions: Crosstalk between Sulfur Cathode and Lithium Anode.. *Advanced Science*, **2022**, e2201640	13.6	2
47	Multiscale Modelling of Nanostructured Foil Anode for Next Generation Batteries. *ECS Meeting Abstracts*, **2021**, MA2021-01, 384-384	0	0
46	Physics-Based Impedance Model of Lithium Sulfur Batteries. *ECS Meeting Abstracts*, **2021**, MA2021-01, 983-983	0	
45	Dynamic Electrochemical Impedance Spectroscopy of Lithium-ion Batteries: Revealing Underlying Physics through Efficient Joint Time-Frequency Modeling. *Journal of the Electrochemical Society*, **2021**, 168, 010526	3.9	11
44	Realigning the Chemistry and Parameterization of Lithium-Sulfur Battery Models to Accommodate Emerging Experimental Evidence and Cell Configurations. *ChemElectroChem*, **2021**, 8, 1098-1106	4.3	4
43	Lithium-ion battery physics and statistics-based state of health model. *Journal of Power Sources*, **2021**, 501, 230032	8.9	5
42	Perspective—Mass Conservation in Models for Electrodeposition/Stripping in Lithium Metal Batteries. *Journal of the Electrochemical Society*, **2021**, 168, 092502	3.9	2
41	Real-time Nonlinear Model Predictive Control (NMPC) Strategies using Physics-Based Models for Advanced Lithium-ion Battery Management System (BMS). *Journal of the Electrochemical Society*, **2020**, 167, 063505	3.9	12
40	Editors'Choice—Perspective—Challenges in Moving to Multiscale Battery Models: Where Electrochemistry Meets and Demands More from Math. *Journal of the Electrochemical Society*, **2020**, 167, 133501	3.9	7
39	An Efficient Electrochemical Tanks-in-Series Model for Lithium Sulfur Batteries. *Journal of the Electrochemical Society*, **2020**, 167, 163503	3.9	4
38	An Efficient Electrochemical-Thermal Tanks-in-Series Model for Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2020**, 167, 113506	3.9	3
37	Properly Lumped Lithium-ion Battery Models: A Tanks-in-Series Approach. *Journal of the Electrochemical Society*, **2020**, 167, 013534	3.9	6
36	Open Data, Models, and Codes for Vanadium Redox Batch Cell Systems: A Systems Approach Using Zero-Dimensional Models. *Journal of Electrochemical Energy Conversion and Storage*, **2020**, 17,	2	5
35	Can a Transport Model Predict Inverse Signatures in Lithium Metal Batteries Without Modifying Kinetics?. *Journal of the Electrochemical Society*, **2020**, 167, 160547	3.9	2
34	Modeling the Cooperative Adsorption of Solid-Binding Proteins on Silica: Molecular Insights from Surface Plasmon Resonance Measurements. *Langmuir*, **2019**, 35, 5013-5020	4	12
33	On the Creation of a Chess-AI-Inspired Problem-Specific Optimizer for the Pseudo Two-Dimensional Battery Model Using Neural Networks. *Journal of the Electrochemical Society*, **2019**, 166, A886-A896	3.9	9
32	Pathways for practical high-energy long-cycling lithium metal batteries. *Nature Energy*, **2019**, 4, 180-186	62.3	1202

31	Analysis and Simulation of One-Dimensional Transport Models for Lithium Symmetric Cells. *Journal of the Electrochemical Society*, **2019**, 166, A3806-A3819	3.9	7
30	Data Science Approaches for Electrochemical Engineers: An Introduction through Surrogate Model Development for Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2018**, 165, A1-A15	3.9	35
29	Fast Impedance Simulation of Lithium-Ion Batteries with Pseudo-Two Dimensional Electrochemical Models. *Journal of the Electrochemical Society*, **2018**, 165, A1324-A1337	3.9	5
28	Estimation of Transport and Kinetic Parameters of Vanadium Redox Batteries Using Static Cells. *ECS Transactions*, **2018**, 85, 43-64	1	2
27	TRANSFORM-ANN for online optimization of complex industrial processes: Casting process as case study. *European Journal of Operational Research*, **2018**, 264, 294-309	5.6	46
26	(Invited) Analyzing and Minimizing Capacity Fade through Optimal Model-based Control - Theory and Experimental Validation. *ECS Transactions*, **2017**, 75, 51-75	1	13
25	Generic Model Control for Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2017**, 164, A973-A986	3.9	7
24	Data science: Accelerating innovation and discovery in chemical engineering. *AICHE Journal*, **2016**, 62, 1402-1416	3.6	44
23	Efficient Simulation and Model Reformulation of Two-Dimensional Electrochemical Thermal Behavior of Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2015**, 162, A940-A951	3.9	37
22	Extending explicit and linearly implicit ODE solvers for index-1 DAEs. *Computers and Chemical Engineering*, **2015**, 82, 283-292	4	15
21	Efficient Simulation and Reformulation of Lithium-Ion Battery Models for Enabling Electric Transportation. *Journal of the Electrochemical Society*, **2014**, 161, E3149-E3157	3.9	57
20	Model-Based SEI Layer Growth and Capacity Fade Analysis for EV and PHEV Batteries and Drive Cycles. *Journal of the Electrochemical Society*, **2014**, 161, A2099-A2108	3.9	42
19	Efficient Reformulation of Solid Phase Diffusion in Electrochemical-Mechanical Coupled Models for Lithium-Ion Batteries: Effect of Intercalation Induced Stresses. *Journal of the Electrochemical Society*, **2013**, 160, A1675-A1683	3.9	9
18	Analytical solution for electrolyte concentration distribution in lithium-ion batteries. *Journal of Applied Electrochemistry*, **2012**, 42, 189-199	2.6	17
17	Chitosan hydrogel-based electrode binder and electrolyte membrane for EDLCs: experimental studies and model validation. *Journal of Applied Electrochemistry*, **2012**, 42, 935-943	2.6	30
16	Modeling and Simulation of Lithium-Ion Batteries from a Systems Engineering Perspective. *Journal of the Electrochemical Society*, **2012**, 159, R31-R45	3.9	436
15	Model-based simultaneous optimization of multiple design parameters for lithium-ion batteries for maximization of energy density **2012**,		1
14	A perturbation approach for consistent initialization of index-1 explicit differential-algebraic equations arising from battery model simulations. *Computers and Chemical Engineering*, **2011**, 35, 2227-2234	4	16

13	Parameter Estimation and Capacity Fade Analysis of Lithium-Ion Batteries Using Reformulated Models. *Journal of the Electrochemical Society*, **2011**, 158, A1048	3.9	106
12	Coordinate Transformation, Orthogonal Collocation, Model Reformulation and Simulation of Electrochemical-Thermal Behavior of Lithium-Ion Battery Stacks. *Journal of the Electrochemical Society*, **2011**, 158, A1461	3.9	129
11	Efficient Reformulation of Solid-Phase Diffusion in Physics-Based Lithium-Ion Battery Models. *Journal of the Electrochemical Society*, **2010**, 157, A854	3.9	101
10	Computational Methods in Chemical Engineering with Maple **2010**,		24
9	Mathematical Model Reformulation for Lithium-Ion Battery Simulations: Galvanostatic Boundary Conditions. *Journal of the Electrochemical Society*, **2009**, 156, A260	3.9	205
8	Towards real-time (milliseconds) parameter estimation of lithium-ion batteries using reformulated physics-based models. *Journal of Power Sources*, **2008**, 183, 361-365	8.9	54
7	Toward Real-Time Simulation of Physics Based Lithium-Ion Battery Models. *Electrochemical and Solid-State Letters*, **2007**, 10, A255		86
6	Efficient Macro-Micro Scale Coupled Modeling of Batteries. *Journal of the Electrochemical Society*, **2005**, 152, A2002	3.9	238
5	A Boundary Condition for Porous Electrodes. *Electrochemical and Solid-State Letters*, **2004**, 7, A259		43
4	Approximate Solutions for Galvanostatic Discharge of Spherical Particles I. Constant Diffusion Coefficient. *Journal of the Electrochemical Society*, **2001**, 148, E444	3.9	105
3	A Semianalytical Method for Predicting Primary and Secondary Current Density Distributions: Linear and Nonlinear Boundary Conditions. *Journal of the Electrochemical Society*, **2000**, 147, 1636	3.9	17
2	A Minimal Information Set To Enable Verifiable Theoretical Battery Research. *ACS Energy Letters*,3831-3835	23.1	3
1	Progress on continuum modeling of lithiumSulfur batteries. *Sustainable Energy and Fuels*,	5.8	2