

# Erik Birgersson

## List of Publications by Year in descending order

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101  
papers

2,627  
citations

218662  
26  
h-index

214788  
47  
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102  
all docs

102  
docs citations

102  
times ranked

2309  
citing authors

| #  | ARTICLE   | IF   | CITATIONS |
|----|---|------|-----------|
| 1  | Design of shading- and hotspot-resistant shingled modules. Progress in Photovoltaics: Research and Applications, 2022, 30, 464-480.   | 8.1  | 5         |
| 2  | Optimizing bifacial all-perovskite tandem solar cell: How to balance light absorption and recombination. Solar Energy, 2022, 231, 1092-1106.  | 6.1  | 8         |
| 3  | Monolithic perovskite/organic tandem solar cells with 23.6% efficiency enabled by reduced voltage losses and optimized interconnecting layer. Nature Energy, 2022, 7, 229-237.            | 39.5 | 137       |
| 4  | Elucidating the underlying physics in a two-terminal all-perovskite tandem solar cell: A guideline towards 30% power conversion efficiency. Solar Energy, 2022, 231, 716-731.             | 6.1  | 12        |
| 5  | Using a reduced-order model to investigate the effect of the heart rate on the aortic dissection. International Journal for Numerical Methods in Biomedical Engineering, 2022, 38, e3596. | 2.1  | 5         |
| 6  | Monte Carlo assisted sensitivity analysis of a Li-ion battery with a phase change material. Journal of Energy Storage, 2021, 35, 102269.  | 8.1  | 7         |
| 7  | Optoelectronic modeling and sensitivity analysis of a four-terminal all-perovskite tandem solar cell – Identifying pathways to improve efficiency. Solar Energy, 2021, 216, 589-600.      | 6.1  | 13        |
| 8  | Tuning Pressure Drop in Isoporous Membranes: Design with Fabrication Variability. Advanced Theory and Simulations, 2021, 4, 2100088.  | 2.8  | 0         |
| 9  | Monte Carlo-based sensitivity analysis of an electrochemical capacitor. International Journal of Energy Research, 2021, 45, 16947-16962.  | 4.5  | 1         |
| 10 | Scale analysis of electrochemical and thermal behaviour of a cylindrical spiral-wound lithium-ion battery. Electrochimica Acta, 2021, 400, 139397.  | 5.2  | 3         |
| 11 | Elucidating the functional form of the recombination losses in a planar perovskite solar cell: A scaling analysis. Journal of Applied Physics, 2020, 128, .                               | 2.5  | 6         |
| 12 | Hotspot development and shading response of shingled PV modules. Solar Energy, 2020, 207, 729-735.  | 6.1  | 26        |
| 13 | Quantifying operating uncertainties of a PEMFC – Monte Carlo-machine learning based approach. Renewable Energy, 2020, 158, 343-359.   | 8.9  | 24        |
| 14 | Functional reservoir microcapsules generated via microfluidic fabrication for long-term cardiovascular therapeutics. Lab on A Chip, 2020, 20, 2756-2764.                                  | 6.0  | 26        |
| 15 | The effect of the entry and re-entry size in the aortic dissection: a two-way fluid-structure interaction simulation. Biomechanics and Modeling in Mechanobiology, 2020, 19, 2643-2656.   | 2.8  | 13        |
| 16 | Correlating Uncertainties of a CO <sub>2</sub> to CO Microfluidic Electrochemical Reactor: A Monte Carlo Simulation. Industrial & Engineering Chemistry Research, 2019, 58, 19361-19376.  | 3.7  | 7         |
| 17 | Correlating variability of modeling parameters with photovoltaic performance: Monte Carlo simulation of a meso-structured perovskite solar cell. Applied Energy, 2019, 237, 131-144.      | 10.1 | 20        |
| 18 | Nernst voltage losses in planar fuel cells caused by changes in chemical composition: effects of operating parameters. Ionics, 2018, 24, 2047-2054.                                       | 2.4  | 3         |

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|----|---|------|-----------|
| 19 | A spatially smoothed device model for meso-structured perovskite solar cells. Journal of Applied Physics, 2018, 124, .  | 2.5  | 2         |
| 20 | Analysis of Concentration Overpotential in an All-Vanadium Redox Flow Battery. Journal of the Electrochemical Society, 2018, 165, A1746-A1752.  | 2.9  | 49        |
| 21 | Nonmonotonic swelling of agaroseâ€carbopol hybrid hydrogel: Experimental and theoretical analysis. Journal of Polymer Science, Part B: Polymer Physics, 2017, 55, 444-454.  | 2.1  | 5         |
| 22 | Modelling and loss analysis of meso-structured perovskite solar cells. Journal of Applied Physics, 2017, 122, .   | 2.5  | 24        |
| 23 | Analysis of a Validated Mathematical Model for a Redox-Flow Lithium Ion Battery System. Electrochimica Acta, 2017, 247, 183-192.  | 5.2  | 5         |
| 24 | Validity and scalability of an asymptotically reduced single-channel model for full-size catalytic monolith converters. Applied Mathematics and Computation, 2016, 281, 186-198.  | 2.2  | 11        |
| 25 | Predictive Mechanistic Model for the Electrical Impedance and Intensity-Modulated Photocurrent and Photovoltage Spectroscopic Responses of an Organic Bulk Heterojunction Solar Cell. Physical Review Applied, 2016, 5, . | 3.8  | 12        |
| 26 | Thermo-electrochemical model for forced convection air cooling of a lithium-ion battery module. Applied Thermal Engineering, 2016, 99, 672-682.   | 6.0  | 93        |
| 27 | Mathematical modeling and experiments of a half-cell redox flow lithium ion battery system. Electrochimica Acta, 2016, 204, 1-8.  | 5.2  | 6         |
| 28 | Hydrodynamic Voltammetry at a Rocking Disc Electrode: Theory versus Experiment. Electrochimica Acta, 2016, 188, 837-844.  | 5.2  | 9         |
| 29 | Compact open cathode feed system for PEMFCs. Applied Energy, 2016, 164, 670-675.  | 10.1 | 47        |
| 30 | Correlating variability of modeling parameters with cell performance: Monte Carlo simulation of a quasi-3D planar solid oxide fuel cell. Renewable Energy, 2016, 85, 1301-1315.   | 8.9  | 9         |
| 31 | Analytical modeling of intensity-modulated photovoltage spectroscopic responses of organic bulk-heterojunction solar cells. Applied Physics Letters, 2015, 107, .   | 3.3  | 12        |
| 32 | Mechanistic Three-Dimensional Analytical Solutions for a Direct Liquid Fuel Cell Stack. Journal of Fuel Cell Science and Technology, 2015, 12, .  | 0.8  | 2         |
| 33 | Towards computationally-efficient modeling of transport phenomena in three-dimensional monolithic channels. Applied Mathematics and Computation, 2015, 254, 392-407.  | 2.2  | 8         |
| 34 | What parameters can be reliably deduced from the current-voltage characteristics of an organic bulk-heterojunction solar cell?. Journal of Applied Physics, 2015, 117, .  | 2.5  | 10        |
| 35 | Verified reduction of dimensionality for an all-vanadium redox flow battery model. Journal of Power Sources, 2015, 279, 345-350.  | 7.8  | 33        |
| 36 | Relating morphological characteristics to the open-circuit voltage of organic bulk-heterojunction solar cells. Applied Physics Express, 2015, 8, 024301.  | 2.4  | 7         |

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|----|--|------|-----------|
| 37 | Computational evaluation of thermal management strategies in an underground mine. Applied Thermal Engineering, 2015, 90, 1144-1150.  | 6.0  | 77        |
| 38 | Numerical investigation of water cooling for a lithium-ion bipolar battery pack. International Journal of Thermal Sciences, 2015, 94, 259-269.   | 4.9  | 125       |
| 39 | Pulsating electrolyte flow in a full vanadium redox battery. Journal of Power Sources, 2015, 294, 305-311.   | 7.8  | 27        |
| 40 | Correlating uncertainties of a lithium-ion battery - A Monte Carlo simulation. International Journal of Energy Research, 2015, 39, 778-788.  | 4.5  | 23        |
| 41 | Modeling and Experimental Validation of Electrochemical Reduction of CO <sub>2</sub> to CO in a Microfluidic Cell. Journal of the Electrochemical Society, 2015, 162, F23-F32.   | 2.9  | 68        |
| 42 | Closed-form expressions correlating exciton transport and interfacial charge carrier generation with the donor/acceptor morphology in organic bulk heterojunction solar cells. Physica B: Condensed Matter, 2015, 456, 267-274.                | 2.7  | 5         |
| 43 | Reduction of Carbon Dioxide in Filtering Facepiece Respirators with an Active-Venting System: A Computational Study. PLoS ONE, 2015, 10, e0130306.   | 2.5  | 15        |
| 44 | Modeling and Simulating Electrochemical Reduction of CO <sub>2</sub> in a Microfluidic Cell. Computer Aided Chemical Engineering, 2014, , 639-644.   | 0.5  | 3         |
| 45 | The quasi-steady state of all-vanadium redox flow batteries: A scale analysis. Electrochimica Acta, 2014, 147, 657-662.  | 5.2  | 19        |
| 46 | Perfusion enhanced polydimethylsiloxane based scaffold cell culturing system for multi-well drug screening platform. Biotechnology Progress, 2014, 30, 418-428.  | 2.6  | 7         |
| 47 | Computational fluid model incorporating liver metabolic activities in perfusion bioreactor. Biotechnology and Bioengineering, 2014, 111, 885-895.  | 3.3  | 16        |
| 48 | Correlating variability of modeling parameters with non-isothermal stack performance: Monte Carlo simulation of a portable 3D planar solid oxide fuel cell stack. Applied Energy, 2014, 136, 560-575.  | 10.1 | 17        |
| 49 | Evaluation of mass transport performance in heterogeneous gaseous in-plane spiral reactors with various cross-section geometries at fixed cross-section area. Chemical Engineering and Processing: Process Intensification, 2014, 82, 101-111. | 3.6  | 15        |
| 50 | Modeling the structure-property relations in pillar-structured organic donor/acceptor solar cells. Organic Electronics, 2014, 15, 2742-2748.   | 2.6  | 4         |
| 51 | Reduced non-isothermal model for the planar solid oxide fuel cell and stack. Energy, 2014, 70, 478-492.  | 8.8  | 24        |
| 52 | Spatially smoothed fuel cell models: Variability of dependent variables underneath flow fields. International Journal of Hydrogen Energy, 2014, 39, 4566-4575.   | 7.1  | 8         |
| 53 | Computationally-efficient hybrid strategy for mechanistic modeling of fuel cell stacks. Journal of Power Sources, 2014, 247, 481-488.  | 7.8  | 12        |
| 54 | Some approaches to improve ventilation system in underground coal mines environment - A computational fluid dynamic study. Tunnelling and Underground Space Technology, 2013, 34, 82-95.   | 6.2  | 112       |

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|----|--|-----|-----------|
| 55 | Three-dimensional approximate analytical solutions for direct liquid fuel cells. <i>Electrochimica Acta</i> , 2013, 109, 305-315.  | 5.2 | 5         |
| 56 | A methodology for extracting the electrical properties of human skin. <i>Physiological Measurement</i> , 2013, 34, 723-736.  | 2.1 | 23        |
| 57 | On the Origin of the Quadrant I Semicircle in Intensity-Modulated Photocurrent Spectra of P3HT:PCBM Bulk Heterojunction Solar Cells: Evidence of Degradation-Related Trap-Assisted Recombination. <i>Journal of Physical Chemistry C</i> , 2013, 117, 7993-8000. | 3.1 | 19        |
| 58 | On the interchangeability of potentiostatic and galvanostatic boundary conditions for fuel cells. <i>Electrochimica Acta</i> , 2013, 109, 617-622.   | 5.2 | 11        |
| 59 | Reduced model for the planar solid oxide fuel cell. <i>Computers and Chemical Engineering</i> , 2013, 52, 155-167.   | 3.8 | 27        |
| 60 | A spatially smoothed device model for organic bulk heterojunction solar cells. <i>Journal of Applied Physics</i> , 2013, 113, .  | 2.5 | 11        |
| 61 | A finite-element method for the weakly compressible parabolized steady 3D Navier-Stokes equations in a channel with a permeable wall. <i>Computers and Fluids</i> , 2013, 81, 152-161.   | 2.5 | 4         |
| 62 | An Aggregate Measure for the Local Current Density Coupling in Fuel Cell Stacks. <i>Journal of the Electrochemical Society</i> , 2013, 160, F1237-F1240.   | 2.9 | 6         |
| 63 | A thin-walled polydimethylsiloxane bioreactor for high-density hepatocyte sandwich culture. <i>Biotechnology and Bioengineering</i> , 2013, 110, 1663-1673.  | 3.3 | 27        |
| 64 | Numerical Investigation of Water and Temperature Distributions for Open-Cathode Polymer Electrolyte Fuel Cell Stack With Edge Cooling. , 2013, , .   |     | 1         |
| 65 | Numerical Investigation of Water and Temperature Distributions for Open-Cathode Polymer Electrolyte Fuel Cell Stack With Edge Cooling. <i>Journal of Fuel Cell Science and Technology</i> , 2013, 10, .  | 0.8 | 5         |
| 66 | A PHENOMENOLOGICAL MODEL FOR HYDROGELS WITH RIGID SKIN FORMATION. <i>International Journal of Applied Mechanics</i> , 2012, 04, 1250007.   | 2.2 | 5         |
| 67 | Computational Study of Edge Cooling for Open-Cathode Polymer Electrolyte Fuel Cell Stacks. <i>Journal of Fuel Cell Science and Technology</i> , 2012, 9, .   | 0.8 | 10        |
| 68 | Computational Study of Edge Cooling for Open-Cathode Polymer Electrolyte Fuel Cell Stacks. , 2012, , .   |     | 0         |
| 69 | Analysis of a device model for organic pseudo-bilayer solar cells. <i>Journal of Applied Physics</i> , 2012, 112, 084511.  | 2.5 | 16        |
| 70 | Model for a bipolar Li-ion battery module: Automated model generation, validation and verification. <i>Applied Mathematics and Computation</i> , 2012, 219, 2231-2245.   | 2.2 | 6         |
| 71 | Fuel cell model reduction through the spatial smoothing of flow channels. <i>International Journal of Hydrogen Energy</i> , 2012, 37, 7779-7795.   | 7.1 | 18        |
| 72 | A novel flow reversal concept for improved thermal management in polymer electrolyte fuel cell stacks. <i>International Journal of Thermal Sciences</i> , 2012, 54, 242-252.   | 4.9 | 34        |

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|----|--|-----|-----------|
| 73 | Thermal-electrochemical model for passive thermal management of a spiral-wound lithium-ion battery. Journal of Power Sources, 2012, 203, 84-96.  | 7.8 | 149       |
| 74 | Analysis of a model for pH-sensitive hydrogels. Polymer, 2012, 53, 613-622.  | 3.8 | 51        |
| 75 | Finite deformation of fast-response thermo-sensitive hydrogels – A computational study. Polymer, 2012, 53, 2500-2508.  | 3.8 | 18        |
| 76 | Non-invasive bioimpedance of intact skin: mathematical modeling and experiments. Physiological Measurement, 2011, 32, 1-18.  | 2.1 | 78        |
| 77 | Analysis of a Model for an Electrochemical Capacitor. Journal of the Electrochemical Society, 2011, 158, A1220.  | 2.9 | 19        |
| 78 | Computational Study of pH-sensitive Hydrogel-based Microfluidic Flow Controllers. Journal of Functional Biomaterials, 2011, 2, 195-212.  | 4.4 | 13        |
| 79 | Numerical evaluation of various thermal management strategies for polymer electrolyte fuel cell stacks. International Journal of Hydrogen Energy, 2011, 36, 12991-13007.   | 7.1 | 52        |
| 80 | Computationally efficient multi-phase models for a proton exchange membrane fuel cell: Asymptotic reduction and thermal decoupling. International Journal of Hydrogen Energy, 2011, 36, 14573-14589.             | 7.1 | 8         |
| 81 | PHENOMENOLOGICAL MODEL FOR COUPLED ALCOHOL AND TEMPERATURE SENSITIVE HYDROGELS. International Journal of Applied Mechanics, 2011, 03, 279-298.   | 2.2 | 6         |
| 82 | Numerical Investigation of Liquid Water Cooling for a Proton Exchange Membrane Fuel Cell Stack. Heat Transfer Engineering, 2011, 32, 151-167.  | 1.9 | 55        |
| 83 | Two-Dimensional Approximate Analytical Solutions for the Direct Liquid Fuel Cell. Journal of the Electrochemical Society, 2011, 158, B1224.  | 2.9 | 10        |
| 84 | Computational Study of Flow Reversal for Improved Thermal Management in a PEMFC Stack With Forced Air Convection Cooling. , 2010, , .  |     | 0         |
| 85 | Computational study of forced air-convection in open-cathode polymer electrolyte fuel cell stacks. Journal of Power Sources, 2010, 195, 5550-5563.   | 7.8 | 61        |
| 86 | Asymptotically Reduced Model for a Proton Exchange Membrane Fuel Cell Stack: Automated Model Generation and Verification. Journal of the Electrochemical Society, 2010, 157, B982.                               | 2.9 | 23        |
| 87 | Two-Dimensional Approximate Analytical Solutions for the Anode of a Direct Methanol Fuel Cell. Journal of the Electrochemical Society, 2009, 156, B1329.   | 2.9 | 9         |
| 88 | Validated Reduction and Accelerated Numerical Computation of a Model for the Proton Exchange Membrane Fuel Cell. Journal of the Electrochemical Society, 2009, 156, B1156.                                       | 2.9 | 20        |
| 89 | A chemo-electro-mechanical model for simulation of responsive deformation of glucose-sensitive hydrogels with the effect of enzyme catalysis. Journal of the Mechanics and Physics of Solids, 2009, 57, 369-382. | 4.8 | 41        |
| 90 | Enhanced Performance With an Impinging Jet Flow Configuration for PEMFC. , 2009, , .   |     | 0         |

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|-----|--|-----|-----------|
| 91  | Modeling of electricâ€stimulusâ€responsive hydrogels immersed in different bathing solutions. Journal of Biomedical Materials Research - Part A, 2008, 85A, 248-257. | 4.0 | 21        |
| 92  | Transient analysis of temperature-sensitive neutral hydrogels. Journal of the Mechanics and Physics of Solids, 2008, 56, 444-466.                                    | 4.8 | 87        |
| 93  | Modeling of multiphase smart hydrogels responding to pH and electric voltage coupled stimuli. Journal of Applied Physics, 2007, 101, 114905.                         | 2.5 | 62        |
| 94  | A quantitative study of the effect of flow-distributor geometry in the cathode of a PEM fuel cell. Journal of Power Sources, 2006, 153, 76-88.                       | 7.8 | 53        |
| 95  | Analysis of a Two-Phase Non-Isothermal Model for a PEFC. Journal of the Electrochemical Society, 2005, 152, A1021.   | 2.9 | 129       |
| 96  | The Design and Usage of a Visual Direct Methanol Fuel Cell. Journal of Applied Electrochemistry, 2004, 34, 763-770.  | 2.9 | 20        |
| 97  | A Two-Phase Non-Isothermal PEFC Model: Theory and Validation. Fuel Cells, 2004, 4, 365-377.  | 2.4 | 52        |
| 98  | Reduced Two-Phase Model for Analysis of the Anode of a DMFC. Journal of the Electrochemical Society, 2004, 151, A2157.   | 2.9 | 55        |
| 99  | Reduced Two-Dimensional One-Phase Model for Analysis of the Anode of a DMFC. Journal of the Electrochemical Society, 2003, 150, A1368.                               | 2.9 | 64        |
| 100 | Mathematical Modeling of Hydrogels for Microfluidic Flow Control. Advanced Materials Research, 0, 74, 33-36.   | 0.3 | 5         |
| 101 | Computational Study of Thermal, Water and Gas Management in PEM Fuel Cell Stacks. , 0, , .   |     | 0         |