Erin L Ratcliff

List of Publications by Year
in descending order

73 papers	3,998 citations	159585 30 h-index	114465 63 g-index
74 all docs	74 docs citations	74 times ranked	5768 citing authors

#	Article	IF	Citations
1	Evidence for near-Surface NiOOH Species in Solution-Processed NiO_x Selective Interlayer Materials: Impact on Energetics and the Performance of Polymer Bulk Heterojunction Photovoltaics. Chemistry of Materials, 2011, 23, 4988-5000.	6.7	343
2	Selective Interlayers and Contacts in Organic Photovoltaic Cells. Journal of Physical Chemistry Letters, 2011, 2, 1337-1350.	4.6	300
3	Enhanced Efficiency in Plastic Solar Cells via Energy Matched Solution Processed NiO_x Interlayers. Advanced Energy Materials, 2011, 1, 813-820.	19.5	299
4	Overcoming Redox Reactions at Perovskite-Nickel Oxide Interfaces to Boost Voltages in Perovskite Solar Cells. Joule, 2020, 4, 1759-1775.	24.0	284
5	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. Science, 2022, 375, 71-76.	12.6	216
6	Influence of Backbone Fluorination in Regioregular Poly(3-alkyl-4-fluoro)thiophenes. Journal of the American Chemical Society, 2015, 137, 6866-6879.	13.7	211
7	Organic/Organicâ€² Heterojunctions: Organic Light Emitting Diodes and Organic Photovoltaic Devices. Macromolecular Rapid Communications, 2009, 30, 717-731.	3.9	183
8	Oxide Contacts in Organic Photovoltaics: Characterization and Control of Near-Surface Composition in Indiumâ^'Tin Oxide (ITO) Electrodes. Accounts of Chemical Research, 2009, 42, 1748-1757.	15.6	167
9	Colloidal Polymerization of Polymer-Coated Ferromagnetic Nanoparticles into Cobalt Oxide Nanowires. ACS Nano, 2009, 3, 3143-3157.	14.6	164
10	Energy level alignment in PCDTBT:PC70BM solar cells: Solution processed NiOx for improved hole collection and efficiency. Organic Electronics, 2012, 13, 744-749.	2.6	135
11	Improvement of Interfacial Contacts for New Smallâ€Molecule Bulkâ€Heterojunction Organic Photovoltaics. Advanced Materials, 2012, 24, 5368-5373.	21.0	132
12	Investigating the Influence of Interfacial Contact Properties on Open Circuit Voltages in Organic Photovoltaic Performance: Work Function Versus Selectivity. Advanced Energy Materials, 2013, 3, 647-656.	19.5	122
13	Electrodeposited, â€œTexturedâ€•Poly(3-hexyl-thiophene) (e-P3HT) Films for Photovoltaic Applications. Chemistry of Materials, 2008, 20, 5796-5806.	6.7	91
14	Chemically Controlled Reversible and Irreversible Extraction Barriers Via Stable Interface Modification of Zinc Oxide Electron Collection Layer in Polycarbazoleâ€based Organic Solar Cells. Advanced Functional Materials, 2014, 24, 4671-4680.	14.9	76
15	Ferrocene Functional Polymer Brushes on Indium Tin Oxide via Surface-Initiated Atom Transfer Radical Polymerization. Langmuir, 2010, 26, 2083-2092.	3.5	73
16	Correlation of Coexistent Charge Transfer States in F₄TCNQ-Doped P3HT with Microstructure. Journal of Physical Chemistry Letters, 2018, 9, 6871-6877.	4.6	65
17	Orientation of Phenylphosphonic Acid Self-Assembled Monolayers on a Transparent Conductive Oxide: A Combined NEXAFS, PM-IRRAS, and DFT Study. Langmuir, 2013, 29, 2166-2174.	3.5	61
18	Work function control of hole-selective polymer/ITO anode contacts: an electrochemical doping study. Journal of Materials Chemistry, 2010, 20, 2672.	6.7	55

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19	Surface-Activated Corrosion in Tinâ€“Lead Halide Perovskite Solar Cells. ACS Energy Letters, 2020, 5, 3344-3351.	17.4	55
20	Stability of Charge Transfer States in F₄TCNQ-Doped P3HT. Chemistry of Materials, 2019, 31, 6986-6994.	6.7	54
21	High-performance methylammonium-free ideal-band-gap perovskite solar cells. Matter, 2021, 4, 1365-1376.	10.0	51
22	Built-In Potential in Conjugated Polymer Diodes with Changing Anode Work Function: Interfacial States and Deviation from the Schottkyâ€“Mott Limit. Journal of Physical Chemistry Letters, 2012, 3, 1202-1207.	4.6	50
23	Nanoscale Visualization and Multiscale Electrochemical Analysis of Conductive Polymer Electrodes. ACS Nano, 2019, 13, 13271-13284.	14.6	47
24	Nickel oxide interlayer films from nickel formateâ€“ethylenediamine precursor: influence of annealing on thin film properties and photovoltaic device performance. Journal of Materials Chemistry A, 2015, 3, 10949-10958.	10.3	45
25	Sputtered nickel oxide thin film for efficient hole transport layer in polymerâ€“fullerene bulk-heterojunction organic solar cell. Thin Solid Films, 2012, 520, 3813-3818.	1.8	40
26	Quantifying the Extent of Contact Doping at the Interface between High Work Function Electrical Contacts and Poly(3-hexylthiophene) (P3HT). Journal of Physical Chemistry Letters, 2015, 6, 1303-1309.	4.6	40
27	Highlyâ€Tunable Nickel Cobalt Oxide as a Lowâ€Temperature Pâ€Type Contact in Organic Photovoltaic Devices. Advanced Energy Materials, 2013, 3, 524-531.	19.5	38
28	A Planar, Chip-Based, Dual-Beam Refractometer Using an Integrated Organic Light-Emitting Diode (OLED) Light Source and Organic Photovoltaic (OPV) Detectors. Analytical Chemistry, 2010, 82, 2734-2742.	6.5	35
29	Electron-Transfer Processes in Zinc Phthalocyanineâ€“Phosphonic Acid Monolayers on ITO: Characterization of Orientation and Charge-Transfer Kinetics by Waveguide Spectroelectrochemistry. Journal of Physical Chemistry Letters, 2012, 3, 1154-1158.	4.6	33
30	Formation of interfacial traps upon surface protonation in small molecule solution processed bulk heterojunctions probed by photoelectron spectroscopy. Journal of Materials Chemistry C, 2013, 1, 6223.	5.5	31
31	Modification of the Galliumâ€Doped Zinc Oxide Surface with Selfâ€Assembled Monolayers of Phosphonic Acids: A Joint Theoretical and Experimental Study. Advanced Functional Materials, 2014, 24, 3593-3603.	14.9	31
32	Systematic electrochemical oxidative doping of P3HT to probe interfacial charge transfer across polymerâ€“fullerene interfaces. Journal of Materials Chemistry A, 2014, 2, 19221-19231.	10.3	29
33	Phosphonic Acid Functionalized Asymmetric Phthalocyanines: Synthesis, Modification of Indium Tin Oxide, and Charge Transfer. Langmuir, 2011, 27, 14900-14909.	3.5	28
34	Influence of Molecular Orientation on Charge-Transfer Processes at Phthalocyanine/Metal Oxide Interfaces and Relationship to Organic Photovoltaic Performance. Journal of Physical Chemistry C, 2015, 119, 10304-10313.	3.1	28
35	Rapid and Reversible Generation of a Microscale pH Gradient Using Surface Electric Fields. Analytical Chemistry, 2005, 77, 6487-6493.	6.5	27
36	Surface composition, work function, and electrochemical characteristics of gallium-doped zinc oxide. Thin Solid Films, 2012, 520, 5652-5663.	1.8	27

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37	Semi-random vs Well-Defined Alternating Donorâ€“Acceptor Copolymers. ACS Macro Letters, 2014, 3, 622-627.	4.8	27
38	Impact of Self-Assembled Monolayer Design and Electrochemical Factors on Impedance-Based Biosensing. Sensors, 2020, 20, 2246.	3.8	26
39	Slot-Die-Coated Ternary Organic Photovoltaics for Indoor Light Recycling. ACS Applied Materials & Interfaces, 2020, 12, 43684-43693.	8.0	25
40	Deciphering the Metal-C₆₀ Interface in Optoelectronic Devices: Evidence for C₆₀ Reduction by Vapor Deposited Al. ACS Applied Materials & Interfaces, 2013, 5, 6001-6008.	8.0	21
41	Intersystem Subpopulation Charge Transfer and Conformational Relaxation Preceding in Situ Conductivity in Electrochemically Doped Poly(3-hexylthiophene) Electrodes. Chemistry of Materials, 2019, 31, 6870-6879.	6.7	21
42	Zinc Oxide-Perylene Diimide Hybrid Electron Transport Layers for Air-Processed Inverted Organic Photovoltaic Devices. ACS Applied Materials & Interfaces, 2021, 13, 49096-49103.	8.0	18
43	Directed Electrodeposition of Polymer Films Using Spatially Controllable Electric Field Gradients. Langmuir, 2007, 23, 9905-9910.	3.5	16
44	Contactâ€Induced Mechanisms in Organic Photovoltaics: A Steadyâ€State and Transient Study. Advanced Energy Materials, 2015, 5, 1400549.	19.5	16
45	Controlling the Kinetics of Charge Transfer at Conductive Polymer/Liquid Interfaces through Microstructure. Journal of Physical Chemistry C, 2018, 122, 21210-21215.	3.1	16
46	Microstructure-dependent electrochemical properties of chemical-vapor deposited poly(3,4-ethylenedioxythiophene) (PEDOT) films. Synthetic Metals, 2019, 253, 26-33.	3.9	16
47	Integrating theory, synthesis, spectroscopy and device efficiency to design and characterize donor materials for organic photovoltaics: a case study including 12 donors. Journal of Materials Chemistry A, 2015, 3, 9777-9788.	10.3	15
48	Ion diffusion coefficients in poly(3-alkylthiophenes) for energy conversion and biosensing: role of side-chain length and microstructure. Journal of Materials Chemistry C, 2020, 8, 13319-13327.	5.5	14
49	Scanning Electrochemical Mapping of Spatially Localized Electrochemical Reactions Induced by Surface Potential Gradients. Langmuir, 2006, 22, 10322-10328.	3.5	13
50	Thermally Induced Formation of HF₄TCNQ^{â€“} in F₄TCNQ-Doped Regioregular P3HT. Journal of Physical Chemistry Letters, 2020, 11, 6586-6592.	4.6	13
51	Tuning Organic Electrochemical Transistor (OECT) Transconductance toward Zero Gate Voltage in the Faradaic Mode. ACS Applied Materials & Interfaces, 2021, 13, 50176-50186.	8.0	13
52	Critical Interface States Controlling Rectification of Ultrathin NiOâ€“ZnO pâ€“n Heterojunctions. ACS Applied Materials & Interfaces, 2017, 9, 31111-31118.	8.0	12
53	Energy Level Alignment and Morphology of Ag and Au Nanoparticle Recombination Contacts in Tandem Planar Heterojunction Solar Cells. Journal of Physical Chemistry C, 2013, 117, 22331-22340.	3.1	10
54	Defect quantification in metal halide perovskites: the solid-state electrochemical alternative. Energy and Environmental Science, 2021, 14, 4840-4846.	30.8	6

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55	High-Throughput Experimental Study of Wurtzite Mn1â€“xZnxO Alloys for Water Splitting Applications. ACS Omega, 2019, 4, 7436-7447.	3.5	5
56	Stability of pushâ€“pull small molecule donors for organic photovoltaics: spectroscopic degradation of acceptor endcaps on benzo[1,2-b:4,5-bâ€²]dithiophene cores. Journal of Materials Chemistry A, 2019, 7, 19984-19995.	10.3	4
57	Energy Level Alignment of Molybdenum Oxide on Colloidal Lead Sulfide (PbS) Thin Films for Optoelectronic Devices. ACS Applied Materials & Interfaces, 2018, 10, 24981-24986.	8.0	3
58	Rationalizing energy level alignment by characterizing Lewis acid/base and ionic interactions at printable semiconductor/ionic liquid interfaces. Materials Horizons, 2022, 9, 471-481.	12.2	3
59	Introduction: Electronic Materials. Chemical Reviews, 2016, 116, 12821-12822.	47.7	2
60	A Multi-modal Approach to Understanding Degradation of Organic Photovoltaic Materials. ACS Applied Materials & Interfaces, 2021, 13, 44641-44655.	8.0	2
61	Printable transistors for wearable sweat sensing. , 2019, , .		2
62	Metastable Dion-Jacobson 2D structure enables efficient and stable perovskite solar cells. Science, 2021, , eabj2637.	12.6	2
63	Enhanced Infrared Photodiodes Based on PbS/PbCl_x Core/Shell Nanocrystals. ACS Applied Materials & Interfaces, 2021, 13, 58916-58926.	8.0	2
64	Photovoltaic devices created from electrodeposited nano-textured poly(thiophene) films. Proceedings of SPIE, 2008, , .	0.8	1
65	Waveguide-Based Chemical and Spectroelectrochemical Sensor Platforms. ECS Transactions, 2009, 19, 109-117.	0.5	1
66	Macromol. Rapid Commun. 9â€“10/2009. Macromolecular Rapid Communications, 2009, 30, .	3.9	1
67	Metal Oxide Heterointerfaces in Hybrid Electronic Platforms. Advanced Materials, 2016, 28, 3801-3801.	21.0	1
68	Organic/Organicâ€² Heterojunctions: Organic Light Emitting Diodes and Organic Photovoltaic Devices. , 2009, 30, 717.		1
69	Approaching single molecule sensing: predictive sweat sensor design for ultra-low limits of detection. , 2019, , .		1
70	The interface science of interlayer materials and contacts in organic solar cells. , 2011, , .		0
71	Understanding energy level alignment in PCDTBT:PC<inf>70</inf>BM solar cells. , 2012, , .		0
72	Predicting limits of detection in real-time sweat-based human performance monitoring. , 2019, , .		0

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73	Self-Assembled Monolayers for Anti-Fouling and Highly Selective Electrode Interfaces. ECS Meeting Abstracts, 2020, MA2020-01, 2420-2420.	0.0	0