Kevin Musselman

List of Publications by Year
in descending order

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71 papers	2,985 citations	201674 27 h-index	161849 54 g-index
71 all docs	71 docs citations	71 times ranked	4901 citing authors

#	Article	IF	Citations
1	Enhanced Performance in Fluoreneâ€Free Organometal Halide Perovskite Lightâ€Emitting Diodes using Tunable, Low Electron Affinity Oxide Electron Injectors. Advanced Materials, 2015, 27, 1414-1419.	21.0	283
2	Resonant energy transfer of triplet excitons from pentacene to PbSe nanocrystals. Nature Materials, 2014, 13, 1033-1038.	27.5	246
3	Strong Efficiency Improvements in Ultraâ€Lowâ€Cost Inorganic Nanowire Solar Cells. Advanced Materials, 2010, 22, E254-8.	21.0	181
4	Size-Dependent Photon Emission from Organometal Halide Perovskite Nanocrystals Embedded in an Organic Matrix. Journal of Physical Chemistry Letters, 2015, 6, 446-450.	4.6	160
5	Efficient Triplet Exciton Fusion in Molecularly Doped Polymer Lightâ€Emitting Diodes. Advanced Materials, 2017, 29, 1605987.	21.0	155
6	Incompatible Length Scales in Nanostructured Cu₂O Solar Cells. Advanced Functional Materials, 2012, 22, 2202-2208.	14.9	142
7	Preventing Interfacial Recombination in Colloidal Quantum Dot Solar Cells by Doping the Metal Oxide. ACS Nano, 2013, 7, 4210-4220.	14.6	132
8	A Novel Buffering Technique for Aqueous Processing of Zinc Oxide Nanostructures and Interfaces, and Corresponding Improvement of Electrodeposited ZnOâ€Cu₂O Photovoltaics. Advanced Functional Materials, 2011, 21, 573-582.	14.9	122
9	Research Update: Doping ZnO and TiO2 for solar cells. APL Materials, 2013, 1, .	5.1	96
10	Improved Openâ€•Circuit Voltage in ZnOâ€“PbSe Quantum Dot Solar Cells by Understanding and Reducing Losses Arising from the ZnO Conduction Band Tail. Advanced Energy Materials, 2014, 4, 1301544.	19.5	94
11	Reliable and Low-Power Multilevel Resistive Switching in TiO₂ Nanorod Arrays Structured with a TiO_x Seed Layer. ACS Applied Materials & Interfaces, 2017, 9, 4808-4817.	8.0	86
12	Lowâ€Temperature Synthesis of Largeâ€Area, Freeâ€Standing Nanorod Arrays on ITO/Glass and other Conducting Substrates. Advanced Materials, 2008, 20, 4470-4475.	21.0	78
13	Novel Atmospheric Growth Technique to Improve Both Light Absorption and Charge Collection in ZnO/Cu₂O Thin Film Solar Cells. Advanced Functional Materials, 2013, 23, 3413-3419.	14.9	78
14	Nanostructured interfaces in polymer solar cells. Applied Physics Letters, 2010, 96, 263109.	3.3	66
15	Improved Exciton Dissociation at Semiconducting Polymer:ZnO Donor:Acceptor Interfaces via Nitrogen Doping of ZnO. Advanced Functional Materials, 2014, 24, 3562-3570.	14.9	60
16	Plasmonicâ€Radiationâ€Enhanced Metal Oxide Nanowire Heterojunctions for Controllable Multilevel Memory. Advanced Functional Materials, 2016, 26, 5979-5986.	14.9	59
17	Resistive Switching Memory of TiO2 Nanowire Networks Grown on Ti Foil by a Single Hydrothermal Method. Nano-Micro Letters, 2017, 9, 15.	27.0	58
18	Hybrid pentacene/a-silicon solar cells utilizing multiple carrier generation via singlet exciton fission. Applied Physics Letters, 2012, 101, .	3.3	54

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19	High performance inverted bulk heterojunction solar cells by incorporation of dense, thin ZnO layers made using atmospheric atomic layer deposition. Solar Energy Materials and Solar Cells, 2013, 116, 197-202.	6.2	41
20	Nanomanufacturing: High-Throughput, Cost-Effective Deposition of Atomic Scale Thin Films via Atmospheric Pressure Spatial Atomic Layer Deposition. Chemistry of Materials, 2016, 28, 8443-8452.	6.7	39
21	Quantumâ€Tunneling Metalâ€Insulatorâ€Metal Diodes Made by Rapid Atmospheric Pressure Chemical Vapor Deposition. Advanced Functional Materials, 2019, 29, 1805533.	14.9	39
22	Synthesis and Modeling of Uniform Complex Metal Oxides by Close-Proximity Atmospheric Pressure Chemical Vapor Deposition. ACS Applied Materials & Interfaces, 2015, 7, 10684-10694.	8.0	35
23	Development of dye sensitized TiO2 thin films for efficient energy harvesting. Journal of Alloys and Compounds, 2019, 790, 1001-1013.	5.5	35
24	Threshold Switching in Single Metalâ€Oxide Nanobelt Devices Emulating an Artificial Nociceptor. Advanced Electronic Materials, 2020, 6, 1900595.	5.1	35
25	A one-step template-free approach to achieve tapered silicon nanowire arrays with controllable filling ratios for solar cell applications. RSC Advances, 2014, 4, 1794-1798.	3.6	33
26	Rapid open-air deposition of uniform, nanoscale, functional coatings on nanorod arrays. Nanoscale Horizons, 2017, 2, 110-117.	8.0	32
27	Oxygen vacancy migration/diffusion induced synaptic plasticity in a single titanate nanobelt. Nanoscale, 2018, 10, 6069-6079.	5.6	30
28	Polymer Crystallization as a Tool To Pattern Hybrid Nanostructures: Growth of 12 nm ZnO Arrays in Poly(3-hexylthiophene). Nano Letters, 2013, 13, 4499-4504.	9.1	27
29	Perspective: Maintaining surface-phase purity is key to efficient open air fabricated cuprous oxide solar cells. APL Materials, 2015, 3, .	5.1	27
30	Engineering Schottky Contacts in Open-Air Fabricated Heterojunction Solar Cells to Enable High Performance and Ohmic Charge Transport. ACS Applied Materials & Interfaces, 2014, 6, 22192-22198.	8.0	25
31	Influence of an Inorganic Interlayer on Exciton Separation in Hybrid Solar Cells. ACS Nano, 2015, 9, 11863-11871.	14.6	22
32	Simultaneous Fabrication and Functionalization of Nanoparticles of 2D Materials with Hybrid Optical Properties. Advanced Optical Materials, 2018, 6, 1701365.	7.3	21
33	Macroscopically uniform electrodeposited ZnO films on conducting glass by surface tension modification and consequent demonstration of significantly improved pâ€“n heterojunctions. Electrochimica Acta, 2011, 56, 3758-3763.	5.2	20
34	Modelling charge transport lengths in heterojunction solar cells. Applied Physics Letters, 2012, 101, 253503.	3.3	20
35	Accurate determination of interface trap state parameters by admittance spectroscopy in the presence of a Schottky barrier contact: Application to ZnO-based solar cells. Journal of Applied Physics, 2013, 113, 144502.	2.5	20
36	Effectiveness of antiviral metal and metal oxide thin-film coatings against human coronavirus 229E. APL Materials, 2021, 9, 111114.	5.1	20

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37	Near zero-bias MIIM diode based on TiO2/ZnO for energy harvesting applications. AIP Advances, 2019, 9, .	1.3	18
38	Simulated electron affinity tuning in metal-insulator-metal (MIM) diodes. Journal of Applied Physics, 2017, 121, .	2.5	17
39	Graphene Oxide as a Sensing Material for Gas Detection Based on Nanomechanical Sensors in the Static Mode. Chemosensors, 2020, 8, 82.	3.6	17
40	A Novel Femtosecond Laserâ€Assisted Method for the Synthesis of Reduced Graphene Oxide Gels and Thin Films with Tunable Properties. Advanced Materials Interfaces, 2016, 3, 1500864.	3.7	16
41	Evaluation of impedance spectroscopy as a tool to characterize degradation mechanisms in silicon photovoltaics. Solar Energy, 2019, 184, 52-58.	6.1	16
42	Research Update: Beyond grapheneâ€"Synthesis of functionalized quantum dots of 2D materials and their applications. APL Materials, 2018, 6, .	5.1	15
43	Synthesis of Two-Dimensional Plasmonic Molybdenum Oxide Nanomaterials by Femtosecond Laser Irradiation. Chemistry of Materials, 2021, 33, 4510-4521.	6.7	15
44	Highly Sensitive Self-Actuated Zinc Oxide Resonant Microcantilever Humidity Sensor. Nano Letters, 2022, 22, 3196-3203.	9.1	15
45	Atmospheric atomic layer deposition of SnO₂ thin films with tin(<scp>ii</scp>) acetylacetonate and water. Dalton Transactions, 2022, 51, 9278-9290.	3.3	15
46	Humidity-resistant perovskite solar cells via the incorporation of halogenated graphene particles. Solar Energy, 2021, 224, 787-797.	6.1	13
47	The application of localized surface plasmons resonance in Ag nanoparticles assisted Si chemical etching. Applied Physics Letters, 2014, 104, .	3.3	12
48	Bright and efficient blue polymer light emitting diodes with reduced operating voltages processed entirely at low-temperature. Journal of Materials Chemistry C, 2015, 3, 9327-9336.	5.5	11
49	In-situ observation of nucleation and property evolution in films grown with an atmospheric pressure spatial atomic layer deposition system. Nano Express, 2020, 1, 010045.	2.4	10
50	Selective sensing of heavy metal ions via fluorescence quenching of femtosecond-laser-synthesized 2D nanoparticles. Sensors and Actuators B: Chemical, 2022, 359, 131576.	7.8	10
51	Ultrathin TiO_x Interfaceâ€Mediated ZnOâ€Nanowire Memristive Devices Emulating Synaptic Behaviors. Advanced Electronic Materials, 2019, 5, 1900142.	5.1	9
52	Nanomechanical Gas Sensing with Laser Treated 2D Nanomaterials. Advanced Materials Technologies, 2020, 5, 2000704.	5.8	9
53	Defects, photophysics and passivation in Pb-based colloidal quantum dot photovoltaics. Materials Today Nano, 2021, 13, 100101.	4.6	9
54	Strong Efficiency Improvements in Ultra-low-Cost Inorganic Nanowire Solar Cells (Adv. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62	21.0	8

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55	Nanostructured Inorganic Solar Cells. Green, 2011, 1, .	0.4	8
56	Laserâ€Directed Assembly of Nanorods of 2D Materials. Small, 2019, 15, 1904415.	10.0	8
57	Nanoscale Film Thickness Gradients Printed in Open Air by Spatially Varying Chemical Vapor Deposition. Advanced Functional Materials, 2021, 31, 2103271.	14.9	8
58	In-situ spatial and temporal electrical characterization of ZnO thin films deposited by atmospheric pressure chemical vapour deposition on flexible polymer substrates. Scientific Reports, 2020, 10, 19947.	3.3	7
59	Metalâ€Insulatorâ€Insulatorâ€Metal Diodes with Responsivities Greater Than 30 A W^{â^'1} Based on Nitrogenâ€Doped TiO_x and AlO_x Insulator Layers. Advanced Electronic Materials, 2021, 7, 2100467.	5.1	7
60	Tuning the band gap and carrier concentration of titania films grown by spatial atomic layer deposition: a precursor comparison. Nanoscale Advances, 2021, 3, 5908-5918.	4.6	6
61	Low-Cost Inorganic Strontium Ferrite a Novel Hole Transporting Material for Efficient Perovskite Solar Cells. Nanomaterials, 2022, 12, 826.	4.1	6
62	Simple plasma assisted atomic layer deposition technique for high substitutional nitrogen doping of TiO2. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, 031602.	2.1	5
63	Electrochemical removal of anodic aluminium oxide templates for the production of phase-pure cuprous oxide nanorods for antimicrobial surfaces. Electrochemistry Communications, 2020, 120, 106833.	4.7	5
64	High Operation Stability and Different Sensing Mechanisms in Graphene Oxide Gel Photodetectors Utilizing a Thin Polymeric Layer. ACS Applied Electronic Materials, 2020, 2, 1203-1209.	4.3	5
65	A new 2D Si3X(X=S, 0) direct band gap semiconductor with anisotropic carrier mobility. Surface Science, 2021, 704, 121736.	1.9	4
66	The Effect of Varying Ultrafast Pulse Laser Energies on the Electrical Properties of Reduced Graphene Oxide Sheets in Solution. Journal of Electronic Materials, 2018, 47, 1117-1124.	2.2	3
67	Solution-Processed Vertical Field-Effect Transistor with Separated Charge Generation and Charge Transport Layers for High-Performance Near-Infrared Photodetection. ACS Applied Electronic Materials, 2020, 2, 3871-3879.	4.3	3
68	Atmospheric-pressure spatial chemical vapor deposition of tungsten oxide. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 052411.	2.1	2
69	Multilevel Memory: Plasmonic-Radiation-Enhanced Metal Oxide Nanowire Heterojunctions for Controllable Multilevel Memory (Adv. Funct. Mater. 33/2016). Advanced Functional Materials, 2016, 26, 6135-6135.	14.9	1
70	Metal-Insulator-Metal Diodes: Quantum-Tunneling Metal-Insulator-Metal Diodes Made by Rapid Atmospheric Pressure Chemical Vapor Deposition (Adv. Funct. Mater. 7/2019). Advanced Functional Materials, 2019, 29, 1970042.	14.9	1
71	(Invited) In-Situ and Combinatorial Techniques for Spatial ALD. ECS Meeting Abstracts, 2020, MA2020-02, 1666-1666.	0.0	0