

Mowafak M Al-Jassim

List of Publications by Year in Descending Order

Source: <https://exaly.com/author-pdf/6101685/mowafak-m-al-jassim-publications-by-year.pdf>

Version: 2024-04-27

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

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

243
papers

7,548
citations

41
h-index

81
g-index

282
ext. papers

8,705
ext. citations

7.3
avg, IF

5.82
L-index

#	Paper	IF	Citations
243	Light- and Elevated-Temperature-Induced Degradation-Affected Silicon Cells From a Utility-Scale Photovoltaic System Characterized by Deep-Level Transient Spectroscopy. <i>IEEE Journal of Photovoltaics</i> , 2022 , 1-8	3.7	1
242	Nondestructive microstructural investigation of defects in 4H-SiC epilayers using a multiscale luminescence analysis approach. <i>Journal of Applied Physics</i> , 2022 , 131, 185705	2.5	
241	Investigation of GalliumBoron Spin-On Codoping for poly-Si/SiOx Passivating Contacts. <i>Solar Rrl</i> , 2021 , 5, 2100653	7.1	1
240	Application of Electron Backscatter Diffraction Techniques to Quantify Effects of Aging on Sub-Grain and Spatial Heterogeneity in NMC Cathodes. <i>Energy Storage Materials</i> , 2021 , 44, 342-342	19.4	2
239	Morphology, microstructure, and doping behaviour: A comparison between different deposition methods for poly-Si/SiOx passivating contacts. <i>Progress in Photovoltaics: Research and Applications</i> , 2021 , 29, 857	6.8	3
238	LeTID-affected Cells from a Utility-scale Photovoltaic System Characterized by Deep Level Transient Spectroscopy 2021 ,		2
237	Evolution of solid electrolyte interphase and active material in the silicon wafer model system. <i>Journal of Power Sources</i> , 2021 , 482, 228946	8.9	11
236	SMART Perovskite Growth: Enabling a Larger Range of Process Conditions. <i>ACS Energy Letters</i> , 2021 , 6, 650-658	20.1	4
235	Operando X-ray Tomography Imaging of Solid-State Electrolyte Response to Li Evolution under Realistic Operating Conditions. <i>ACS Applied Energy Materials</i> , 2021 , 4, 1346-1355	6.1	4
234	Perovskite quantum dot solar cells: Mapping interfacial energetics for improving charge separation. <i>Nano Energy</i> , 2020 , 78, 105319	17.1	17
233	Microstructure Study on Initial Lithiation/Delithiation Cycle of Crystalline Silicon WaferADDENDUM. <i>Microscopy and Microanalysis</i> , 2020 , 26, 183-183	0.5	
232	Solid State Electrolytes: Nonuniform Ionic and Electronic Transport of Ceramic and Polymer/Ceramic Hybrid Electrolyte by Nanometer-Scale Operando Imaging for Solid-State Battery (Adv. Energy Mater. 21/2020). <i>Advanced Energy Materials</i> , 2020 , 10, 2070097	21.8	3
231	Emission Control from Transition Metal Dichalcogenide Monolayers by Aggregation-Induced Molecular Rotors. <i>ACS Nano</i> , 2020 , 14, 7444-7453	16.7	15
230	The 2020 photovoltaic technologies roadmap. <i>Journal Physics D: Applied Physics</i> , 2020 , 53, 493001	3	128
229	Destructive reverse bias pinning in perovskite/silicon tandem solar modules caused by perovskite hysteresis under dynamic shading. <i>Sustainable Energy and Fuels</i> , 2020 , 4, 4067-4075	5.8	8
228	Failure analysis of field-failed bypass diodes. <i>Progress in Photovoltaics: Research and Applications</i> , 2020 , 28, 909-918	6.8	8
227	Hydrogenation Mechanisms of Poly-Si/SiOx Passivating Contacts by Different Capping Layers. <i>Solar Rrl</i> , 2020 , 4, 2070033	7.1	6

226	Wurtzite materials in alloys of rock salt compounds. <i>Journal of Materials Research</i> , 2020 , 35, 972-980	2.5	0
225	Nonuniform Ionic and Electronic Transport of Ceramic and Polymer/Ceramic Hybrid Electrolyte by Nanometer-Scale Operando Imaging for Solid-State Battery. <i>Advanced Energy Materials</i> , 2020 , 10, 2000219	21.8	17
224	Advances in Coring Procedures of Silicon Photovoltaic Modules 2020 ,		2
223	Hydrogenation Mechanisms of Poly-Si/SiO _x Passivating Contacts by Different Capping Layers. <i>Solar Rrl</i> , 2020 , 4, 1900476	7.1	6
222	Optical and Structural Properties of High-Efficiency Epitaxial Cu(In,Ga)Se Grown on GaAs. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 3150-3160	9.5	7
221	Inhomogeneous Doping of Perovskite Materials by Dopants from Hole-Transport Layer. <i>Matter</i> , 2020 , 2, 261-272	12.7	22
220	Low-bandgap mixed tin/lead iodide perovskites with reduced methylammonium for simultaneous enhancement of solar cell efficiency and stability. <i>Nature Energy</i> , 2020 , 5, 768-776	62.3	80
219	Arylammonium-Assisted Reduction of the Open-Circuit Voltage Deficit in Wide-Bandgap Perovskite Solar Cells: The Role of Suppressed Ion Migration. <i>ACS Energy Letters</i> , 2020 , 5, 2560-2568	20.1	56
218	Effect of Surface Texture on Pinhole Formation in SiO ₂ -Based Passivated Contacts for High-Performance Silicon Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 55737-55745	9.5	9
217	Direct Microscopy Imaging of Nonuniform Carrier Transport in Polycrystalline Cadmium Telluride. <i>Cell Reports Physical Science</i> , 2020 , 1, 100230	6.1	1
216	Three-Dimensional Mapping of Resistivity and Microstructure of Composite Electrodes for Lithium-Ion Batteries. <i>Nano Letters</i> , 2020 , 20, 8081-8088	11.5	5
215	Microscopic Observation of Solid Electrolyte Interphase Bilayer Inversion on Silicon Oxide. <i>ACS Energy Letters</i> , 2020 , 5, 3657-3662	20.1	11
214	Impact of dopant-induced optoelectronic tails on open-circuit voltage in arsenic-doped Cd(Se)Te solar cells. <i>Journal of Applied Physics</i> , 2020 , 128, 103105	2.5	8
213	10% efficiency Cu(In,Ga)Se ₂ solar cell with strongly (220)/(204) oriented Cu-poor absorber layers sputtered using single quaternary target. <i>Journal of Alloys and Compounds</i> , 2020 , 812, 152065	5.7	5
212	Carrier-Transport Study of Gallium Arsenide Hillock Defects. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1160-1166	16.3	1663
211	Modifications of Textured Silicon Surface Morphology and Its Effect on Poly-Si/SiO _x Contact Passivation for Silicon Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 1513-1521	3.7	5
210	Investigating PID Shunting in Polycrystalline CIGS Devices via Multi-Scale, Multi-Technique Characterization. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 559-564	3.7	5
209	Protection of GaInP Photocathodes by Direct Photoelectrodeposition of MoS ₂ Thin Films. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 25115-25122	9.5	12

208	No Evidence for Passivation Effects of Na and K at Grain Boundaries in Polycrystalline Cu(In,Ga)Se ₂ Thin Films for Solar Cells. <i>Solar Rrl</i> , 2019 , 3, 1900095	7.1	13
207	High-Throughput Experimental Study of Wurtzite Mn Zn O Alloys for Water Splitting Applications. <i>ACS Omega</i> , 2019 , 4, 7436-7447	3.9	4
206	Carrier lifetimes of >1 ns in Sn-Pb perovskites enable efficient all-perovskite tandem solar cells. <i>Science</i> , 2019 , 364, 475-479	33.3	496
205	Achieving a high open-circuit voltage in inverted wide-bandgap perovskite solar cells with a graded perovskite homojunction. <i>Nano Energy</i> , 2019 , 61, 141-147	17.1	97
204	Strong Attraction and Adhesion Forces of Dust Particles by System Voltages of Photovoltaic Modules. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 1121-1127	3.7	4
203	Characterization and modeling of reverse-bias breakdown in Cu(In,Ga)Se ₂ photovoltaic devices. <i>Progress in Photovoltaics: Research and Applications</i> , 2019 , 27, 812-823	6.8	4
202	Effect of Crystallographic Orientation and Nanoscale Surface Morphology on Poly-Si/SiO ₂ Contacts for Silicon Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 42021-42031	9.5	13
201	Temperature-Dependent Solubility of Solid Electrolyte Interphase on Silicon Electrodes. <i>ACS Energy Letters</i> , 2019 , 4, 2770-2775	20.1	22
200	Microstructure Study on Initial Lithiation/Delithiation Cycle of Crystalline Silicon Wafer. <i>Microscopy and Microanalysis</i> , 2019 , 25, 2098-2099	0.5	1
199	Understanding the charge transport mechanisms through ultrathin SiO _x layers in passivated contacts for high-efficiency silicon solar cells. <i>Applied Physics Letters</i> , 2019 , 114, 083902	3.4	26
198	Transmission Electron Microscopy Study on Microstructure of Degraded CdTe Mini-Modules. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 893-897	3.7	
197	Perovskite Solar Cells: Imaging Spatial Variations of Optical Bandgaps in Perovskite Solar Cells (Adv. Energy Mater. 7/2019). <i>Advanced Energy Materials</i> , 2019 , 9, 1970021	21.8	4
196	Nonuniform Charge Collection in SiO _x -Based Passivated-Contact Silicon Solar Cells 2019 ,		1
195	Hydrogen-Assisted Defect Engineering of Doped Poly-Si Films for Passivating Contact Solar Cells. <i>ACS Applied Energy Materials</i> , 2019 , 2, 8783-8791	6.1	7
194	Three-dimensional electronic resistivity mapping of solid electrolyte interphase on Si anode materials. <i>Nano Energy</i> , 2019 , 55, 477-485	17.1	41
193	Reducing Saturation-Current Density to Realize High-Efficiency Low-Bandgap Mixed Tin/Lead Halide Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2019 , 9, 1803135	21.8	162
192	Comprehensive characterization of CIGS absorber layers grown by one-step sputtering process. <i>Ceramics International</i> , 2019 , 45, 4424-4430	5.1	12
191	Large-Area Material and Junction Damage in cSi Solar Cells by Potential-Induced Degradation. <i>Solar Rrl</i> , 2019 , 3, 1800303	7.1	6

190	Effect of Window-Layer Materials on p-n Junction Location in Cu(In,Ga)Se ₂ Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2019 , 9, 308-312	3.7	6
189	Imaging Spatial Variations of Optical Bandgaps in Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2019 , 9, 1802790	21.8	12
188	Investigating PID shunting in polycrystalline silicon modules via multiscale, multitechnique characterization. <i>Progress in Photovoltaics: Research and Applications</i> , 2018 , 26, 377-384	6.8	18
187	Influence of CdTe Deposition Temperature and Window Thickness on CdTe Grain Size and Lifetime After CdCl ₂ Recrystallization. <i>IEEE Journal of Photovoltaics</i> , 2018 , 8, 600-603	3.7	11
186	Obtaining Large Columnar CdTe Grains and Long Lifetime on Nanocrystalline CdSe, MgZnO, or CdS Layers. <i>Advanced Energy Materials</i> , 2018 , 8, 1702666	21.8	37
185	Identification and analysis of partial shading breakdown sites in CuIn _x Ga(1-x)Se ₂ modules. <i>Solar Energy</i> , 2018 , 161, 1-5	6.8	21
184	Tunneling or Pinholes: Understanding the Transport Mechanisms in SiO _x Based Passivated Contacts for High-Efficiency Silicon Solar Cells 2018 ,		5
183	Thin-Film Module Reverse-Bias Breakdown Sites Identified by Thermal Imaging 2018 ,		6
182	Toward All-Solid-State Lithium Batteries: Three-Dimensional Visualization of Lithium Migration in Li ₃ PS ₄ Ceramic Electrolyte. <i>Journal of the Electrochemical Society</i> , 2018 , 165, A3732-A3737	3.9	37
181	Luminescence methodology to determine grain-boundary, grain-interior, and surface recombination in thin-film solar cells. <i>Journal of Applied Physics</i> , 2018 , 124, 113104	2.5	16
180	Overcoming Carrier Concentration Limits in Polycrystalline CdTe Thin Films with In Situ Doping. <i>Scientific Reports</i> , 2018 , 8, 14519	4.9	50
179	Sub-Bandgap Luminescence from Doped Polycrystalline and Amorphous Silicon Films and Its Application to Understanding Passivating-Contact Solar Cells. <i>ACS Applied Energy Materials</i> , 2018 , 1, 6618-6625 ¹³	6.1	13
178	Defect Detection in Solid-State Battery Electrolytes Using Lock-In Thermal Imaging. <i>Journal of the Electrochemical Society</i> , 2018 , 165, A3205-A3211	3.9	4
177	Evolution of Copper Electrodes Fabricated by Electroless Plating on BaZr _{0.7} Ce _{0.2} Y _{0.1} O _{3-δ} Proton-Conducting Ceramic Membrane: From Deposition to Testing in Methane. <i>Ceramics</i> , 2018 , 1, 261-273	1.7	0
176	Spatially Resolved Recombination Analysis of CuIn _x Ga _{1-x} Se ₂ Absorbers With Alkali Postdeposition Treatments. <i>IEEE Journal of Photovoltaics</i> , 2018 , 8, 1833-1840	3.7	7
175	A graded catalytic-protective layer for an efficient and stable water-splitting photocathode. <i>Nature Energy</i> , 2017 , 2,	62.3	113
174	Spatial luminescence imaging of dopant incorporation in CdTe Films. <i>Journal of Applied Physics</i> , 2017 , 121, 045304	2.5	3
173	Extrinsic ion migration in perovskite solar cells. <i>Energy and Environmental Science</i> , 2017 , 10, 1234-1242	35.4	336

172	Understanding and Eliminating Hysteresis for Highly Efficient Planar Perovskite Solar Cells. <i>Advanced Energy Materials</i> , 2017 , 7, 1700414	21.8	162
171	Near-field transport imaging applied to photovoltaic materials. <i>Solar Energy</i> , 2017 , 153, 134-141	6.8	5
170	Nanoscale insight into the p-n junction of alkali-incorporated Cu(In,Ga)Se ₂ solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2017 , 25, 764-772	6.8	24
169	Grain engineering: How nanoscale inhomogeneities can control charge collection in solar cells. <i>Nano Energy</i> , 2017 , 32, 488-493	17.1	32
168	Impact of Wide-Ranging Nanoscale Chemistry on Band Structure at Cu(In, Ga)Se Grain Boundaries. <i>Scientific Reports</i> , 2017 , 7, 14163	4.9	18
167	Imaging the Thickness of Passivation Layers for Crystalline Silicon with Micron-Scale Spatial Resolution Using Spectral Photoluminescence. <i>Solar Rrl</i> , 2017 , 1, 1700157	7.1	2
166	Junction Quality of SnO-Based Perovskite Solar Cells Investigated by Nanometer-Scale Electrical Potential Profiling. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 38373-38380	9.5	41
165	Perovskite Photovoltaics: The Path to a Printable Terawatt-Scale Technology. <i>ACS Energy Letters</i> , 2017 , 2, 2540-2544	20.1	42
164	NREL Efforts to Address Soiling on PV Modules 2017 ,		2
163	Investigating PID Shunting in Polycrystalline Silicon Modules via Multi-Scale, Multi-Technique Characterization 2017 ,		2
162	Quantification of Sheet Resistance in Boron-Diffused Silicon Using Micro-Photoluminescence Spectroscopy at Room Temperature. <i>Solar Rrl</i> , 2017 , 1, 1700088	7.1	5
161	In situ investigation of halide incorporation into perovskite solar cells. <i>MRS Communications</i> , 2017 , 7, 575-582	2.7	6
160	Development of in-situ high-voltage and high-temperature stressing capability on atomic force microscopy platform. <i>Solar Energy</i> , 2017 , 158, 746-752	6.8	4
159	Locating the electrical junctions in Cu(In,Ga)Se ₂ and Cu ₂ ZnSnSe ₄ solar cells by scanning capacitance spectroscopy. <i>Progress in Photovoltaics: Research and Applications</i> , 2017 , 25, 33-40	6.8	5
158	Using Time-of-Flight SIMS to Investigate Group V Dopant Distribution in CdTe 2017 ,		1
157	Analytical (S)TEM Studies of Defects Associated with PID in Stressed Si PV Modules 2017 ,		1
156	Identifying Reverse-Bias Breakdown Sites in CuIn _x Ga _(1-x) Se ₂ 2017 ,		4
155	Optimization of vertical and lateral distances between target and substrate in deposition process of CuGaSe ₂ thin films using one-step sputtering. <i>Materials Express</i> , 2017 , 7, 35-42	1.3	3

154	3-D point defect density distributions in thin film Cu(In,Ga)Se ₂ measured by atom probe tomography. <i>Acta Materialia</i> , 2016 , 102, 32-37	8.4	16
153	Cooperative tin oxide fullerene electron selective layers for high-performance planar perovskite solar cells. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 14276-14283	13	178
152	Contrasting the Material Chemistry of CuZnSnSe and CuZnSnS ₂ . <i>Advanced Science</i> , 2016 , 3, 1500320	13.6	10
151	Revealing Surface Modifications of Potassium-Fluoride-Treated Cu(In,Ga)Se ₂ : A Study of Material Structure, Chemistry, and Photovoltaic Performance. <i>Advanced Materials Interfaces</i> , 2016 , 3, 1600013	4.6	22
150	Employing Lead Thiocyanate Additive to Reduce the Hysteresis and Boost the Fill Factor of Planar Perovskite Solar Cells. <i>Advanced Materials</i> , 2016 , 28, 5214-21	24	403
149	Three-dimensional minority-carrier collection channels at shunt locations in silicon solar cells. <i>Solar Energy</i> , 2016 , 135, 163-168	6.8	3
148	Semi-statistical Atom Probe Tomography Analysis of Thin Film Grain Boundaries. <i>Microscopy and Microanalysis</i> , 2016 , 22, 644-645	0.5	4
147	Bandgap engineering of Cu(In _{1-x} Ga _x)Se ₂ absorber layers fabricated using CuInSe ₂ and CuGaSe ₂ targets for one-step sputtering process. <i>Optical Materials Express</i> , 2016 , 6, 3541	2.6	16
146	Cation ratio fluctuations in Cu ₂ ZnSnS ₄ at the 20 nm length scale investigated by analytical electron microscopy. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016 , 213, 2392-2399	1.6	11
145	Atomic scale understanding of poly-Si/SiO ₂ /c-Si passivated contacts: Passivation degradation due to metallization 2016 ,		1
144	Cathodoluminescence spectrum imaging analysis of CdTe thin-film bevels. <i>Journal of Applied Physics</i> , 2016 , 120, 105704	2.5	7
143	Synchrotron x-ray characterization of alkali elements at grain boundaries in Cu(In, Ga)Se ₂ solar cells 2016 ,		4
142	Module degradation mechanisms studied by a multi-scale approach 2016 ,		5
141	Nanometer-scale electrical potential profiling across perovskite solar cells 2016 ,		2
140	In situ investigation of the formation and metastability of formamidinium lead tri-iodide perovskite solar cells. <i>Energy and Environmental Science</i> , 2016 , 9, 2372-2382	35.4	64
139	Effect of Water Vapor, Temperature, and Rapid Annealing on Formamidinium Lead Triiodide Perovskite Crystallization. <i>ACS Energy Letters</i> , 2016 , 1, 155-161	20.1	21
138	Sodium Accumulation at Potential-Induced Degradation Shunted Areas in Polycrystalline Silicon Modules. <i>IEEE Journal of Photovoltaics</i> , 2016 , 6, 1440-1445	3.7	34
137	Interface Characterization of Single-Crystal CdTe Solar Cells With VOC > 950 mV. <i>IEEE Journal of Photovoltaics</i> , 2016 , 6, 1650-1653	3.7	8

136	Microscopic Real-Space Resistance Mapping Across CdTe Solar Cell Junctions by Scanning Spreading Resistance Microscopy. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 395-400	3.7	7
135	Combinatorial insights into doping control and transport properties of zinc tin nitride. <i>Journal of Materials Chemistry C</i> , 2015 , 3, 11017-11028	7.1	107
134	Mechanisms of Electron-Beam-Induced Damage in Perovskite Thin Films Revealed by Cathodoluminescence Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 26904-26911	3.8	117
133	Suppression of the Cu_{2-x}S Secondary Phases in CZTS Films Through Controlling the Film Elemental Composition. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1470-1475	3.7	8
132	Quantitative Determination of Grain-Boundary Recombination Velocity in CdTe by Cathodoluminescence Measurements and Numerical Simulations. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 1722-1726	3.7	20
131	Direct evidence of enhanced chlorine segregation at grain boundaries in polycrystalline CdTe thin films via three-dimensional TOF-SIMS imaging. <i>Progress in Photovoltaics: Research and Applications</i> , 2015 , 23, 838-846	6.8	38
130	LDA+U/GGA+U calculations of structural and electronic properties of CdTe: Dependence on the effective U parameter. <i>Computational Materials Science</i> , 2015 , 98, 18-23	3.2	15
129	Targeting Grain Boundaries for Structural and Chemical Analysis Using Correlative EBSD, TEM and APT. <i>Microscopy and Microanalysis</i> , 2015 , 21, 43-44	0.5	2
128	Predicting a quaternary tungsten oxide for sustainable photovoltaic application by density functional theory. <i>Applied Physics Letters</i> , 2015 , 107, 233902	3.4	1
127	Phosphorus doping of polycrystalline CdTe by diffusion 2015 ,		4
126	Texture Manipulation and Its Impact on Electrical Properties of Zinc Phosphide Thin Films. <i>Journal of Electronic Materials</i> , 2015 , 44, 2566-2573	1.9	1
125	Physics of grain boundaries in polycrystalline photovoltaic semiconductors. <i>Journal of Applied Physics</i> , 2015 , 117, 112807	2.5	44
124	Quantitative determination of grain boundary recombination velocity in CdTe by combination of cathodoluminescence measurements and numerical simulations 2015 ,		2
123	Alkali segregation and matrix concentrations in thin film Cu(In,Ga)Se ₂ at targeted interfaces characterized in 3-D at the nanoscale 2015 ,		4
122	Development of scanning capacitance spectroscopy of CIGS solar cells 2015 ,		1
121	Correlation between grain composition and charge carrier collection in Cu(In,Ga)Se ₂ solar cells 2015 ,		8
120	Latest developments in the x-ray based characterization of thin-film solar cells 2015 ,		13
119	Grain-boundary-enhanced carrier collection in CdTe solar cells. <i>Physical Review Letters</i> , 2014 , 112, 156103.4	3.4	210

118	Direct imaging of enhanced current collection on grain boundaries of Cu(In,Ga)Se ₂ solar cells. <i>Applied Physics Letters</i> , 2014 , 104, 063902	3.4	8
117	Direct evidence of a Cu(In,Ga) ₃ Se ₅ phase in a bulk, high-efficiency Cu(In,Ga)Se ₂ device using atom probe tomography 2014 ,		1
116	Fabrication and Characterization of CZTS Thin Films Prepared by the Sulfurization of RF-Sputtered Stacked Metal Precursors. <i>Journal of Electronic Materials</i> , 2014 , 43, 3145-3154	1.9	13
115	Characterization of Photovoltaics: From Cells Properties to Atoms. <i>Microscopy and Microanalysis</i> , 2014 , 20, 952-953	0.5	
114	Creating intermediate bands in ZnTe via co-alloying approach. <i>Applied Physics Express</i> , 2014 , 7, 121201	2.4	7
113	Cathodoluminescence Analysis of Grain Boundaries and Grain Interiors in Thin-Film CdTe. <i>IEEE Journal of Photovoltaics</i> , 2014 , 4, 1671-1679	3.7	19
112	The possibility of optical excitations at the smallest gap of Cu-delafoosite nanocrystals. <i>Journal Physics D: Applied Physics</i> , 2014 , 47, 405301	3	
111	The Effect of Ga Content on the Recombination Behavior of Grain Boundaries in Cu(In,Ga)Se ₂ Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2014 , 1670, 19		1
110	Engineering Grain Boundaries in Cu ₂ ZnSnSe ₄ for Better Cell Performance: A First-Principle Study. <i>Advanced Energy Materials</i> , 2014 , 4, 1300712	21.8	118
109	Structural, electronic, and optical properties of Cu ₃ -V-VI ₄ compound semiconductors. <i>Applied Physics Letters</i> , 2013 , 103, 152105	3.4	29
108	From atomic structure to photovoltaic properties in CdTe solar cells. <i>Ultramicroscopy</i> , 2013 , 134, 113-125.1		65
107	Effect of gas ambient and varying RF sputtering power for bandgap narrowing of mixed (ZnO:GaN) thin films for solar driven hydrogen production. <i>Journal of Power Sources</i> , 2013 , 232, 74-78	8.9	13
106	The structure and properties of (aluminum, oxygen) defect complexes in silicon. <i>Journal of Applied Physics</i> , 2013 , 114, 063520	2.5	10
105	Photoelectrochemical behavior of mixed ZnO and GaN (ZnO:GaN) thin films prepared by sputtering technique. <i>Applied Surface Science</i> , 2013 , 270, 718-721	6.7	4
104	Hydrothermally synthesized titania nanotubes as a promising electron transport medium in dye sensitized solar cells exhibiting a record efficiency of 7.6% for 1-D based devices. <i>Journal of Materials Chemistry A</i> , 2013 , 1, 5377	13	41
103	Built-in potential and charge distribution within single heterostructured nanorods measured by scanning Kelvin probe microscopy. <i>Nano Letters</i> , 2013 , 13, 1278-84	11.5	37
102	Defect segregation at grain boundary and its impact on photovoltaic performance of CuInSe ₂ . <i>Applied Physics Letters</i> , 2013 , 102, 193905	3.4	46
101	Core Structures of Dislocations within CdTe Grains. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1526, 1		3

100	Structural and Electro-Optical Properties of CdTe Films Used in CdTe/CdS Solar Cells Grown with Substrate Configuration. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1493, 183-188		
99	Structural, chemical and luminescent investigation of MBE- and CSS-deposited CdTe thin-films for solar cells 2013 ,		1
98	Defect characterization in compositionally graded InGaAs layers on GaAs(001) grown by MBE. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2013 , 10, 1640-1643		4
97	ZnO:GaN thin films for photoelectrochemical water splitting application. <i>Emerging Materials Research</i> , 2012 , 1, 201-204	1.4	5
96	Synthesis and Characterization of Magnesium-Alloyed Hematite Thin Films. <i>Journal of Electronic Materials</i> , 2012 , 41, 3100-3106	1.9	5
95	Electronic and optical properties of CoX ₂ O ₄ (X = Al, Ga, In) alloys. <i>Applied Physics Letters</i> , 2012 , 100, 023901	3.0	14
94	Quality characterization of silicon bricks using photoluminescence imaging and photoconductive decay 2012 ,		3
93	New Polytypoid SnO ₂ (ZnO:Sn) _m Nanowire: Characterization and Calculation of Its Electronic Structure. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 5009-5013	3.8	11
92	Unusual nonlinear strain dependence of valence-band splitting in ZnO. <i>Physical Review B</i> , 2012 , 86,	3.3	11
91	Comparative study of defect transition energy calculation methods: The case of oxygen vacancy in In ₂ O ₃ and ZnO. <i>Physical Review B</i> , 2012 , 86,	3.3	20
90	Possible effects of oxygen in Te-rich B (112) grain boundaries in CdTe. <i>Solid State Communications</i> , 2012 , 152, 1744-1747	1.6	25
89	Strong asymmetrical doping properties of spinel CoAl ₂ O ₄ . <i>Journal of Applied Physics</i> , 2012 , 111, 093723	2.5	3
88	Transmission electron microscopy of chalcogenide thin-film photovoltaic materials. <i>Current Opinion in Solid State and Materials Science</i> , 2012 , 16, 39-44	12	14
87	A comparative study of the defect point physics and luminescence of the kesterites Cu ₂ ZnSnS ₄ and Cu ₂ ZnSnSe ₄ and chalcopyrite Cu(In,Ga)Se ₂ 2012 ,		4
86	The delocalized nature of holes in (Ga, N) cluster-doped ZnO. <i>Journal of Physics Condensed Matter</i> , 2012 , 24, 415503	1.8	4
85	Enhancing the Stability of CuO Thin-Film Photoelectrodes by Ti Alloying. <i>Journal of Electronic Materials</i> , 2012 , 41, 3062-3067	1.9	27
84	Titanium and magnesium Co-alloyed hematite thin films for photoelectrochemical water splitting. <i>Journal of Applied Physics</i> , 2012 , 111, 073502	2.5	29
83	Defect-band photoluminescence imaging on multi-crystalline silicon wafers. <i>Physica Status Solidi - Rapid Research Letters</i> , 2012 , 6, 190-192	2.5	12

82	Origin of the diverse behavior of oxygen vacancies in ABO ₃ perovskites: A symmetry based analysis. <i>Physical Review B</i> , 2012 , 85,	3.3	26
81	Influence of Gas Flow Rate for Formation of Aligned Nanorods in ZnO Thin Films for Solar-Driven Hydrogen Production. <i>Jom</i> , 2012 , 64, 526-530	2.1	1
80	Comparison of photoluminescence imaging on starting multi-crystalline silicon wafers to finished cell performance 2012 ,		4
79	Zinc Oxide (ZnO) and Bandgap Engineering for Photoelectrochemical Splitting of Water to Produce Hydrogen. <i>Ceramic Transactions</i> , 2012 , 231-236	0.1	1
78	Quantification of atomic scale defects in poly Si PV devices using atom probe tomography 2012 ,		1
77	Investigation of ZnO:N and ZnO:(Al,N) Films for Solar Driven Hydrogen Production. <i>Ceramic Transactions</i> , 2012 , 237-242	0.1	
76	Synthesis and characterization of titanium-alloyed hematite thin films for photoelectrochemical water splitting. <i>Journal of Applied Physics</i> , 2011 , 110, 123511	2.5	25
75	Origin of Bonding between the SWCNT and the Fe ₃ O ₄ (001) Surface and the Enhanced Electrical Conductivity. <i>Journal of Physical Chemistry Letters</i> , 2011 , 2, 2853-2858	6.4	15
74	Comparative study of the luminescence and intrinsic point defects in the kesterite Cu ₂ ZnSnS ₄ and chalcopyrite Cu(In,Ga)Se ₂ thin films used in photovoltaic applications. <i>Physical Review B</i> , 2011 , 84,	3.3	177
73	The effects of Bi alloying in Cu delafossites: A density functional theory study. <i>Journal of Applied Physics</i> , 2011 , 109, 113710	2.5	15
72	Synthesis and Characterization of Ternary Cobalt Spinel Oxides for Photoelectrochemical Water Splitting to Produce Hydrogen. <i>Ceramic Transactions</i> , 2011 , 249-258	0.1	
71	Transmission electron microscopy study of dislocations and interfaces in CdTe solar cells. <i>Thin Solid Films</i> , 2011 , 519, 7168-7172	2.2	9
70	Prediction of the chemical trends of oxygen vacancy levels in binary metal oxides. <i>Applied Physics Letters</i> , 2011 , 99, 142109	3.4	35
69	Synthesis of ZnO Nanostructures and Their Influence on Photoelectrochemical Response for Solar Driven Water Splitting to Produce Hydrogen. <i>Ceramic Transactions</i> , 2011 , 143-153	0.1	
68	Imaging the solar cell P-N junction and depletion region using secondary electron contrast 2011 ,		2
67	Origin of charge separation in III-nitride nanowires under strain. <i>Applied Physics Letters</i> , 2011 , 99, 262103,	3.4	6
66	Phase separation in Ga and N co-incorporated ZnO films and its effects on photo-response in photoelectrochemical water splitting. <i>Thin Solid Films</i> , 2011 , 519, 5983-5987	2.2	24
65	Mott insulators: An early selection criterion for materials for photoelectrochemical H ₂ production. <i>Journal of Renewable and Sustainable Energy</i> , 2011 , 3, 053101	2.5	22

64	Atomic scale characterization of compound semiconductors using atom probe tomography 2011 ,		3
63	Defect-band emission photoluminescence imaging on multi-crystalline solar cells 2011 ,		1
62	Imaging study of multi-crystalline silicon wafers throughout the manufacturing process 2011 ,		3
61	Investigation of Charge Trapping at Grain Boundaries in Polycrystalline and Multicrystalline Silicon Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2010 , 1268, 11		1
60	SiO ₂ as barrier layer for Na out-diffusion from soda-lime glass 2010 ,		3
59	Amorphous copper tungsten oxide with tunable band gaps. <i>Journal of Applied Physics</i> , 2010 , 108, 043502.5	11	
58	Electronic, structural, and magnetic effects of 3d transition metals in hematite. <i>Journal of Applied Physics</i> , 2010 , 107, 123712	2.5	111
57	Improved current collection in WO ₃ :Mo/WO ₃ bilayer photoelectrodes. <i>Journal of Materials Research</i> , 2010 , 25, 45-51	2.5	29
56	Synthesis and characterization of band gap-reduced ZnO:N and ZnO:(Al,N) films for photoelectrochemical water splitting. <i>Journal of Materials Research</i> , 2010 , 25, 69-75	2.5	52
55	Band-Engineered Bismuth Titanate Pyrochlores for Visible Light Photocatalysis. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 10598-10605	3.8	100
54	Influence of Gas Flow Rate on the Formation of ZnO Nanorods and Their Effects on Photoelectrochemical Response. <i>Ceramic Transactions</i> , 2010 , 267-274	0.1	
53	Electrodeposited Aluminum-Doped Fe ₂ O ₃ Photoelectrodes: Experiment and Theory. <i>Chemistry of Materials</i> , 2010 , 22, 510-517	9.6	207
52	Microstructure and surface chemistry of nanoporous Black silicon for photovoltaics 2010 ,		3
51	Electrochemical deposition of copper oxide nanowires for photoelectrochemical applications. <i>Journal of Materials Chemistry</i> , 2010 , 20, 6962		83
50	Understanding and Use of IR Belt Furnace for Rapid Thermal Firing of Screen-Printed Contacts to Si Solar Cells. <i>IEEE Electron Device Letters</i> , 2010 , 31, 461-463	4.4	26
49	Effects of substrate temperature and RF power on the formation of aligned nanorods in ZnO thin films. <i>Jom</i> , 2010 , 62, 25-30	2.1	5
48	Effect of substrate temperature on the photoelectrochemical responses of Ga and N co-doped ZnO films. <i>Journal of Materials Science</i> , 2010 , 45, 5218-5222	4.3	17
47	Influence of gas ambient on the synthesis of co-doped ZnO:(Al,N) films for photoelectrochemical water splitting. <i>Journal of Power Sources</i> , 2010 , 195, 5801-5805	8.9	46

46	Symmetry-breaking-induced enhancement of visible light absorption in delafossite alloys. <i>Applied Physics Letters</i> , 2009 , 94, 251907	3.4	19
45	Ultrahigh-Crystalline-Quality Silicon Pillars Formed by Millimeter-Wave Annealing of Amorphous Silicon on Glass. <i>Advanced Materials</i> , 2009 , 21, 3002-3006	24	2
44	On the existence of SiC double bonded graphene-like layers. <i>Chemical Physics Letters</i> , 2009 , 479, 255-258.	5	36
43	CoAl ₂ O ₄ /Fe ₂ O ₃ p-n nanocomposite electrodes for photoelectrochemical cells. <i>Applied Physics Letters</i> , 2009 , 95, 022116	3.4	27
42	Nanoscale imaging of exciton transport in organic photovoltaic semiconductors by tip-enhanced tunneling luminescence. <i>Nano Letters</i> , 2009 , 9, 3904-8	11.5	11
41	Band Edge Electronic Structure of BiVO ₄ : Elucidating the Role of the Bi s and V d Orbitals. <i>Chemistry of Materials</i> , 2009 , 21, 547-551	9.6	542
40	Ternary cobalt spinel oxides for solar driven hydrogen production: Theory and experiment. <i>Energy and Environmental Science</i> , 2009 , 2, 774	35.4	55
39	Evaluation of Nitrogen Doping of Tungsten Oxide for Photoelectrochemical Water Splitting. <i>Journal of Physical Chemistry C</i> , 2008 , 112, 5213-5220	3.8	174
38	ZnO nanocoral structures for photoelectrochemical cells. <i>Applied Physics Letters</i> , 2008 , 93, 163117	3.4	87
37	Enhancement of photoelectrochemical response by aligned nanorods in ZnO thin films. <i>Journal of Power Sources</i> , 2008 , 176, 387-392	8.9	104
36	Photoelectrochemical Properties of N-Incorporated ZnO Films Deposited by Reactive RF Magnetron Sputtering. <i>Journal of the Electrochemical Society</i> , 2007 , 154, B956	3.9	75
35	Atomic structure of In ₂ O ₃ /ZnO systems. <i>Applied Physics Letters</i> , 2007 , 90, 261904	3.4	30
34	Plasmon excitations in scanning tunneling microscopy: Simultaneous imaging of modes with different localizations coupled at the tip. <i>Applied Physics Letters</i> , 2007 , 90, 193109	3.4	4
33	TEM study of Locations of Cu in CdTe Solar Cells. <i>Materials Research Society Symposia Proceedings</i> , 2007 , 1012, 1		4
32	Electron-Backscatter Diffraction of Photovoltaic Thin Films. <i>Materials Research Society Symposia Proceedings</i> , 2007 , 1012, 1		5
31	Effect of grain alignment on lateral carrier transport in aligned-crystalline silicon films on polycrystalline substrates. <i>Journal of Materials Research</i> , 2007 , 22, 821-825	2.5	7
30	Synthesis of band-gap-reduced p-type ZnO films by Cu incorporation. <i>Journal of Applied Physics</i> , 2007 , 102, 023517	2.5	103
29	Enhanced photoelectrochemical responses of ZnO films through Ga and N codoping. <i>Applied Physics Letters</i> , 2007 , 91, 231909	3.4	133

28	Epitaxial Silicon Thin Films by Low Temperature Aluminum Induced Crystallization of Amorphous Silicon. <i>Materials Research Society Symposia Proceedings</i> , 2006 , 910, 4		
27	Epitaxial silicon thin films by low-temperature aluminum induced crystallization of amorphous silicon for solar cell applications 2006 ,		1
26	TEM Investigation of the Role of a Nano-oxide Layer in Aluminum-Induced Crystallization of a-Si:H. <i>Electrochemical and Solid-State Letters</i> , 2006 , 9, G225		5
25	Imaging of resonant quenching of surface plasmons by quantum dots. <i>Nano Letters</i> , 2006 , 6, 2833-7	11.5	32
24	Damage-Layer-Mediated H Diffusion During SiN:H Processing: A Comprehensive Model 2006 ,		3
23	Low-temperature silicon homoepitaxy by hot-wire chemical vapor deposition with a Ta filament. <i>Journal of Crystal Growth</i> , 2006 , 287, 414-418	1.6	24
22	Lateral electron transport in Cu(In,Ga)Se ₂ investigated by electro-assisted scanning tunneling microscopy. <i>Applied Physics Letters</i> , 2005 , 87, 172106	3.4	23
21	Photon emission in CuInSe ₂ thin films observed by scanning tunneling microscopy. <i>Applied Physics Letters</i> , 2005 , 86, 143115	3.4	23
20	The Effects of an Oxide Layer on the Kinetics of Metal-Induced Crystallization of a-Si:H. <i>Journal of the Electrochemical Society</i> , 2005 , 152, G354	3.9	7
19	Understanding the Formation and Temperature Dependence of Thick-Film Ag Contacts on High-Sheet-Resistance Si Emitters for Solar Cells. <i>Journal of the Electrochemical Society</i> , 2005 , 152, G742	3.9	61
18	Nanocrystal formation in annealed a-SiO _{0.17} N _{0.07} :H films. <i>Nanotechnology</i> , 2004 , 15, 1831-1836	3.4	23
17	Advantages of using piezoelectric quantum structures for photovoltaics. <i>Journal of Applied Physics</i> , 2003 , 93, 626-631	2.5	8
16	Cathodoluminescence of Cu(In,Ga)Se ₂ thin films used in high-efficiency solar cells. <i>Applied Physics Letters</i> , 2003 , 83, 4770-4772	3.4	74
15	Beam injection methods for characterizing thin-film solar cells. <i>Progress in Photovoltaics: Research and Applications</i> , 2002 , 10, 445-455	6.8	29
14	Cathodoluminescence of Cu diffusion in CdTe thin films for CdTe/CdS solar cells. <i>Applied Physics Letters</i> , 2002 , 81, 2962-2964	3.4	37
13	Carrier diffusion and radiative recombination in CdTe thin films. <i>Applied Physics Letters</i> , 2002 , 81, 3161-3163	3.4	14
12	Cu(In,Ga)Se ₂ Thin-Film Evolution During Growth from (In,Ga) ₂ Se ₃ Precursors. <i>Materials Research Society Symposia Proceedings</i> , 2001 , 668, 1		7
11	Effects of hydrogen on the growth of nanocrystalline silicon films by electron-beam excited plasma chemical vapor deposition. <i>Journal of Applied Physics</i> , 2000 , 88, 6848-6855	2.5	7

10	Direct observation of Na and O impurities at grain surfaces of CuInSe ₂ thin films. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1999 , 17, 291-296	2.9	89
9	Mechanism of Zn and Si diffusion from a highly doped tunnel junction for InGaP/GaAs tandem solar cells. <i>Journal of Applied Physics</i> , 1999 , 85, 1481-1486	2.5	66
8	An x-ray photoelectron spectroscopy investigation of O impurity chemistry in CdS thin films grown by chemical bath deposition. <i>Journal of Applied Physics</i> , 1997 , 81, 1978-1984	2.5	49
7	Compositional analysis of CdS/SnO ₂ films after heat treatments and CdCl ₂ pretreatments. <i>Surface and Interface Analysis</i> , 1994 , 21, 160-162	1.5	
6	TFC17. Microstructural, compositional and electrical characterization of ferroelectric lead zirconate titanate thin films. <i>Ferroelectrics</i> , 1992 , 134, 303-312	0.6	8
5	Templated Growth and Passivation of Vertically Oriented Antimony Selenide Thin Films for High-Efficiency Solar Cells in Substrate Configuration. <i>Advanced Functional Materials</i> , 2110032	15.6	6
4	Effect of Gas Ambient on the Synthesis of Al and N Co-doped ZnO: (Al,N) Films and their Influence on PEC Response for Photoelectrochemical Water Splitting Application 135-142		
3	Imaging Techniques for the Characterization of Multi-Crystalline Silicon Bricks and Wafers 521-528		
2	Nitrogen Doped ZnO (ZnO:N) Thin Films Deposited by Reactive RF Magnetron Sputtering for PEC Application 669-676		
1	Trap-Assisted Dopant Compensation Prevents Shunting in Poly-Si Passivating Interdigitated Back Contact Silicon Solar Cells. <i>ACS Applied Energy Materials</i> ,	6.1	2