Daniel J Friedman

List of Publications by Year
in descending order

82	2,166	236925 25	233421 45
papers	citations	h-index	g-index

84	84	84	1918
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dilute nitride GaInNAs and GaInNAsSb solar cells by molecular beam epitaxy. Journal of Applied Physics, 2007, 101, 114916.	2.5	192
2	Building a Six-Junction Inverted Metamorphic Concentrator Solar Cell. IEEE Journal of Photovoltaics, 2018, 8, 626-632.	2.5	148
3	Thermophotovoltaic efficiency of 40%. Nature, 2022, 604, 287-291.	27.8	108
4	Quadruple-Junction Inverted Metamorphic Concentrator Devices. IEEE Journal of Photovoltaics, 2015, 5, 432-437.	2.5	101
5	Generalized Optoelectronic Model of Series-Connected Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 1827-1839.	2.5	97
6	Thermal energy grid storage using multi-junction photovoltaics. Energy and Environmental Science, 2019, 12, 334-343.	30.8	93
7	Progress Towards a 30% Efficient GaInP/Si Tandem Solar Cell. Energy Procedia, 2015, 77, 464-469.	1.8	87
8	Measuring IV Curves and Subcell Photocurrents in the Presence of Luminescent Coupling. IEEE Journal of Photovoltaics, 2013, 3, 879-887.	2.5	85
9	Design Flexibility of Ultrahigh Efficiency Four-Junction Inverted Metamorphic Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 578-583.	2.5	79
10	Effects of Internal Luminescence and Internal Optics on $V_{f oc}$ and $J_{f sc}$ of III–V Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 1437-1442.	2.5	77
11	Analysis of Multijunction Solar Cell Currentâ€“Voltage Characteristics in the Presence of Luminescent Coupling. IEEE Journal of Photovoltaics, 2013, 3, 1429-1436.	2.5	67
12	Effect of Luminescent Coupling on the Optimal Design of Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2014, 4, 986-990.	2.5	56
13	Increased Photovoltaic Power Output via Diffractive Spectrum Separation. Physical Review Letters, 2013, 110, 123901.	7.8	51
14	Development of High-Bandgap AlGaInP Solar Cells Grown by Organometallic Vapor-Phase Epitaxy. IEEE Journal of Photovoltaics, 2016, 6, 770-776.	2.5	48
15	Addressing the Stability Gap in Photoelectrochemistry: Molybdenum Disulfide Protective Catalysts for Tandem IIIâ€“V Unassisted Solar Water Splitting. ACS Energy Letters, 2020, 5, 2631-2640.	17.4	48
16	High-efficiency inverted metamorphic 1.7/1.1 eV GaInAsP/GaInAs dual-junction solar cells. Applied Physics Letters, 2018, 112, .	3.3	47
17	High performance III-V photoelectrodes for solar water splitting via synergistically tailored structure and stoichiometry. Nature Communications, 2019, 10, 3388.	12.8	42
18	Measurements and Modeling of III-V Solar Cells at High Temperatures up to 400 <inline-formula> <tex-math notation="latex">^{circ}</tex-math> </inline-formula>C. IEEE Journal of Photovoltaics, 2016, 6, 1345-1352.	2.5	40

#	Article	IF	Citations
19	Optically Enhanced Photon Recycling in Mechanically Stacked Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 358-365.	2.5	33
20	Comparative studies of optoelectrical properties of prominent PV materials: Halide perovskite, CdTe, and GaAs. Materials Today, 2020, 36, 18-29.	14.2	33
21	Pushing Inverted Metamorphic Multijunction Solar Cells Toward Higher Efficiency at Realistic Operating Conditions. IEEE Journal of Photovoltaics, 2013, 3, 893-898.	2.5	31
22	A new class of multiâ€bandgap highâ€efficiency photovoltaics enabled by broadband diffractive optics. Progress in Photovoltaics: Research and Applications, 2015, 23, 1073-1079.	8.1	29
23	Temperature-dependent measurements of an inverted metamorphic multijunction (IMM) solar cell. , 2011, , .		26
24	String-Level Modeling of Two, Three, and Four Terminal Si-Based Tandem Modules. IEEE Journal of Photovoltaics, 2018, 8, 1370-1375.	2.5	26
25	Energy Yield Analysis of Multiterminal Si-Based Tandem Solar Cells. IEEE Journal of Photovoltaics, 2018, 8, 1376-1383.	2.5	26
26	Design of integrated III-nitride/non-III-nitride tandem photovoltaic devices. Journal of Applied Physics, 2012, 111, 054503.	2.5	25
27	High aspect ratio electrodeposited Ni/Au contacts for GaAsâ€based IIIâ€“V concentrator solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 646-653.	8.1	25
28	Metamorphic IIIâ€“V Solar Cells: Recent Progress and Potential. IEEE Journal of Photovoltaics, 2016, 6, 366-373.	2.5	25
29	Interfacial engineering of gallium indium phosphide photoelectrodes for hydrogen evolution with precious metal and non-precious metal based catalysts. Journal of Materials Chemistry A, 2019, 7, 16821-16832.	10.3	24
30	Editorial: Toward 100 Gigawatts of Concentrator Photovoltaics by 2030. IEEE Journal of Photovoltaics, 2013, 3, 1460-1463.	2.5	23
31	Ultrabroadband and Wide-Angle Hybrid Antireflection Coatings With Nanostructures. IEEE Journal of Photovoltaics, 2014, 4, 962-967.	2.5	23
32	Six-junction concentrator solar cells. AIP Conference Proceedings, 2018, , .	0.4	21
33	Ordering-enhanced dislocation glide in III-V alloys. Journal of Applied Physics, 2013, 114, .	2.5	20
34	Device characterization for design optimization of 4 junction inverted metamorphic concentrator solar cells. AIP Conference Proceedings, 2014, , .	0.4	17
35	Implications of Redesigned, High-Radiative-Efficiency GaInP Junctions on III-V Multijunction Concentrator Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 418-424.	2.5	17
36	(Al)GaInP/GaAs Tandem Solar Cells for Power Conversion at Elevated Temperature and High Concentration. IEEE Journal of Photovoltaics, 2018, 8, 640-645.	2.5	17

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37	Multijunction solar cell design revisited: disruption of current matching by atmospheric absorption bands. Progress in Photovoltaics: Research and Applications, 2017, 25, 850-860.	8.1	15
38	Pathway to 50% efficient inverted metamorphic concentrator solar cells. AIP Conference Proceedings, 2017, , .	0.4	15
39	Photoelectrochemical water splitting using strain-balanced multiple quantum well photovoltaic cells. Sustainable Energy and Fuels, 2019, 3, 2837-2844.	4.9	14
40	Twoâ€terminal metalâ€interâ€connected multijunction IIIâ€“V solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 593-599.	8.1	13
41	Tunable Bandgap GaInAsP Solar Cells With 18.7% Photoconversion Efficiency Synthesized by Low-Cost and High-Growth Rate Hydride Vapor Phase Epitaxy. IEEE Journal of Photovoltaics, 2018, 8, 1577-1583.	2.5	13
42	Comprehensive Performance Calibration Guidance for Perovskites and Other Emerging Solar Cells. Advanced Energy Materials, 2021, 11, 2100728.	19.5	13
43	Design of semiconductor-based back reflectors for high V<inf>oc</inf> monolithic multijunction solar cells. , 2012, , .		12
44	Monolithic, Ultra-Thin GaInP/GaAs/GaInAs Tandem Solar Cells. , 2006, , .		11
45	Development of a 2.0 eV AlGaInP solar cell grown by OMVPE. , 2015, , .		11
46	Optimization of Multijunction Solar Cells Through Indoor Energy Yield Measurements. IEEE Journal of Photovoltaics, 2015, 5, 438-445.	2.5	11
47	Spectral binning for energy production calculations and multijunction solar cell design. Progress in Photovoltaics: Research and Applications, 2018, 26, 48-54.	8.1	11
48	Inverted metamorphic AlGaInAs/GaInAs tandem thermophotovoltaic cell designed for thermal energy grid storage application. Journal of Applied Physics, 2020, 128, .	2.5	10
49	Highly efficient and durable IIIâ€“V semiconductor-catalyst photocathodes via a transparent protection layer. Sustainable Energy and Fuels, 2020, 4, 1437-1442.	4.9	9
50	Development of highly-efficient GaInP/Si Tandem Solar Cells. , 2015, , .		8
51	Progress toward an advanced four-subcell inverted metamorphic multi-junction (IMM) solar cell. Progress in Photovoltaics: Research and Applications, 2016, 24, 139-149.	8.1	8
52	AlGaInP/GaAs tandem solar cells for power conversion at 400Â°C and high concentration. AIP Conference Proceedings, 2017, , .	0.4	8
53	Printed assemblies of microscale tripleâ€junction inverted metamorphic GaInP/GaAs/InGaAs solar cells. Progress in Photovoltaics: Research and Applications, 2019, 27, 520-527.	8.1	8
54	Reverse Heterojunction (Al)GaInP Solar Cells for Improved Efficiency at Concentration. IEEE Journal of Photovoltaics, 2020, 10, 487-494.	2.5	8

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55	Pushing inverted metamorphic multijunction solar cells toward higher efficiency at realistic operating conditions. , 2012, , .		7
56	A novel solar simulator based on a super-continuum laser. , 2012, , .		6
57	How Useful are Conventional Iâ€“Vs for Performance Calibration of Singleâ€•and Twoâ€Junction Perovskite Solar Cells? A Statistical Analysis of Performance Data on â‰ˆ200 Cells from 30 Global Sources. Solar Rrl, 2022, 6, 2100867.	5.8	6
58	Experimental and modeling analysis of internal luminescence in III-V solar cells. AIP Conference Proceedings, 2013, , .	0.4	5
59	An all optical approach for comprehensive in-operando analysis of radiative and nonradiative recombination processes in GaAs double heterostructures. Light: Science and Applications, 2022, 11, 137.	16.6	5
60	Cell-level thermal management issues in concentrator III–V multijunction solar cells. , 2010, , .		4
61	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2012, , .		4
62	Reliable Power Rating of Perovskite PV Modules. , 2021, , .		4
63	Energy yield determination of concentrator solar cells using laboratory measurements. AIP Conference Proceedings, 2015, , .	0.4	3
64	Field spectra binning for energy production calculations and multijunction solar cell design. , 2015, , .		3
65	Towards the ultimate multi-junction solar cell using transfer printing. , 2016, , .		3
66	Yield analysis and comparison of GaInP/Si and GaInP/GaAs multi-terminal tandem solar cells. AIP Conference Proceedings, 2018, , .	0.4	2
67	GaInNAsSb Solar Cells Grown by Molecular Beam Epitaxy. , 2006, , .		1
68	Design of ultra-broadband antireflection coatings utilizing integrated moth-eye structures for multi-junction device applications. , 2013, , .		1
69	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2013, , .		1
70	III-V/Si tandem cell to module interconnection - comparison between different operation modes. , 2017, , .		1
71	Notice of Removal Measurements and modeling of III-V solar cells at high temperatures up to 400Â°C. , 2017, , .		1
72	Combining Indoor and Outdoor Measurements to Lower Uncertainty in PV Modules Performance. , 2020, , .		1

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73	How Useful are Conventional Iâ€“Vs for Performance Calibration of Singleâ€•and Twoâ€Junction Perovskite Solar Cells? A Statistical Analysis of Performance Data on â‰ˆ200 Cells from 30 Global Sources. Solar Rrl, 2022, 6, 2270013.	5.8	1
74	Recent developments in terrestrial concentrator photovoltaics. AIP Conference Proceedings, 1997, , .	0.4	0
75	Concentrating and multijunction photovoltaics. , 0, , 257-271.		0
76	Pushing inverted metamorphic multijunction solar cells toward higher efficiency at realistic operating conditions. , 2013, , .		0
77	Spectral and Concentration Sensitivity of Multijunction Solar Cells at High Temperature. , 2017, , .		0
78	AlGaInP/GaAs Tandem Solar Cells for Power Conversion at 400Â°C and 1000X Concentration. , 2017, , .		0
79	Printed Assemblies of Microscale Triple-Junction (3J) Inverted Metamorphic (IMM) GaInP/GaAs/InGaAs Solar Cells. , 2017, , .		0
80	Effect of Atmospheric Absorption Bands on the Optimal Design of Multijunction Solar Cells. , 2017, , .		0
81	Design of Thermophotovoltaic Cells for Optimal System Efficiency, Accounting for Photon Reuse from Front and Back Contacts. , 2019, , .		0
82	Distribution of the spectral response of cells in silicon modules â€“ mechanisms and implications. , 2021, , .		0