Ryan France

List of Publications by Year
in descending order

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98 papers	4,592 citations	159585 30 h-index	102487 66 g-index
100 all docs	100 docs citations	100 times ranked	5649 citing authors

#	Article	IF	Citations
1	Observation of a hot-phonon bottleneck in lead-iodide perovskites. Nature Photonics, 2016, 10, 53-59.	31.4	760
2	Triple-halide wideâ€“band gap perovskites with suppressed phase segregation for efficient tandems. Science, 2020, 367, 1097-1104.	12.6	669
3	Six-junction IIIâ€“V solar cells with 47.1% conversion efficiency under 143â€‰Suns concentration. Nature Energy, 2020, 5, 326-335.	39.5	408
4	Direct solar-to-hydrogen conversion via inverted metamorphic multi-junction semiconductor architectures. Nature Energy, 2017, 2, .	39.5	333
5	Building a Six-Junction Inverted Metamorphic Concentrator Solar Cell. IEEE Journal of Photovoltaics, 2018, 8, 626-632.	2.5	148
6	Carrier control in Snâ€“Pb perovskites via 2D cation engineering for all-perovskite tandem solar cells with improved efficiency and stability. Nature Energy, 2022, 7, 642-651.	39.5	121
7	Thermophotovoltaic efficiency of 40%. Nature, 2022, 604, 287-291.	27.8	108
8	Kinetically limited growth of GaAsBi by molecular-beam epitaxy. Journal of Crystal Growth, 2012, 338, 107-110.	1.5	102
9	Quadruple-Junction Inverted Metamorphic Concentrator Devices. IEEE Journal of Photovoltaics, 2015, 5, 432-437.	2.5	101
10	Generalized Optoelectronic Model of Series-Connected Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 1827-1839.	2.5	97
11	Measuring IV Curves and Subcell Photocurrents in the Presence of Luminescent Coupling. IEEE Journal of Photovoltaics, 2013, 3, 879-887.	2.5	85
12	Vanadium-based Ohmic contacts to n-AlGaN in the entire alloy composition. Applied Physics Letters, 2007, 90, 062115.	3.3	82
13	Design Flexibility of Ultrahigh Efficiency Four-Junction Inverted Metamorphic Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 578-583.	2.5	79
14	Tandem Solar Cells from Solution-Processed CdTe and PbS Quantum Dots Using a ZnTeâ€“ZnO Tunnel Junction. Nano Letters, 2017, 17, 1020-1027.	9.1	71
15	Triple-junction solar cells with 39.5% terrestrial and 34.2% space efficiency enabled by thick quantum well superlattices. Joule, 2022, 6, 1121-1135.	24.0	67
16	Metamorphic epitaxy for multijunction solar cells. MRS Bulletin, 2016, 41, 202-209.	3.5	66
17	Reduction of crosshatch roughness and threading dislocation density in metamorphic GaInP buffers and GaInAs solar cells. Journal of Applied Physics, 2012, 111, .	2.5	58
18	High Efficiency Inverted GaAs and GaInP/GaAs Solar Cells With Strainâ€Balanced GaInAs/GaAsP Quantum Wells. Advanced Energy Materials, 2021, 11, 2002874.	19.5	55

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19	MOVPE Grown Gallium Phosphideâ€“Silicon Heterojunction Solar Cells. IEEE Journal of Photovoltaics, 2017, 7, 502-507.	2.5	54
20	Atomic ordering and phase separation in MBE GaAs1â^'xBix. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2011, 29, 03C121.	1.2	53
21	Gallium Phosphide Window Layer for Silicon Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 384-390.	2.5	52
22	Growth of antiphase-domain-free GaP on Si substrates by metalorganic chemical vapor deposition using an in situ AsH3 surface preparation. Applied Physics Letters, 2015, 107, .	3.3	51
23	Direct Growth of IIIâ€“V/Silicon Triple-Junction Solar Cells With 19.7% Efficiency. IEEE Journal of Photovoltaics, 2018, 8, 1590-1595.	2.5	48
24	High-efficiency inverted metamorphic 1.7/1.1 eV GaInAsP/GaInAs dual-junction solar cells. Applied Physics Letters, 2018, 112, .	3.3	47
25	Learning from existing photovoltaic technologies to identify alternative perovskite module designs. Energy and Environmental Science, 2020, 13, 3393-3403.	30.8	43
26	Lattice-Mismatched 0.7-eV GaInAs Solar Cells Grown on GaAs Using GaInP Compositionally Graded Buffers. IEEE Journal of Photovoltaics, 2014, 4, 190-195.	2.5	39
27	Epitaxial GaInP/GaAs/Si Tripleâ€Junction Solar Cell with 25.9% AM1.5g Efficiency Enabled by Transparent Metamorphic Al_xGa_{1â^'x}As_yP_{1â^'y} Stepâ€Graded Buffer Structures. Solar Rrl, 2021, 5, 2000763.	5.8	39
28	Blue-green-red LEDs based on InGaN quantum dots grown by plasma-assisted molecular beam epitaxy. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 2098-2102.	1.8	34
29	Optically Enhanced Photon Recycling in Mechanically Stacked Multijunction Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 358-365.	2.5	33
30	Control of misfit dislocation glide plane distribution during strain relaxation of CuPt-ordered GaInAs and GaInP. Journal of Applied Physics, 2012, 112, 023520.	2.5	32
31	Pushing Inverted Metamorphic Multijunction Solar Cells Toward Higher Efficiency at Realistic Operating Conditions. IEEE Journal of Photovoltaics, 2013, 3, 893-898.	2.5	31
32	Radiation Tolerant Nanowire Array Solar Cells. ACS Nano, 2019, 13, 12860-12869.	14.6	27
33	Enhanced Current Collection in 1.7 eV GaInAsP Solar Cells Grown on GaAs by Metalorganic Vapor Phase Epitaxy. IEEE Journal of Photovoltaics, 2017, 7, 927-933.	2.5	26
34	Metamorphic IIIâ€“V Solar Cells: Recent Progress and Potential. IEEE Journal of Photovoltaics, 2016, 6, 366-373.	2.5	25
35	Metamorphic Ga0.76In0.24As/GaAs0.75Sb0.25 tunnel junctions grown on GaAs substrates. Journal of Applied Physics, 2014, 116, .	2.5	23
36	Influence of Metalâ€“Organic Vapor Phase Epitaxy Reactor Environment on the Silicon Bulk Lifetime. IEEE Journal of Photovoltaics, 2016, 6, 1668-1672.	2.5	23

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37	Growth of lattice-matched GaInAsP grown on vicinal GaAs(001) substrates within the miscibility gap for solar cells. Journal of Crystal Growth, 2017, 458, 1-7.	1.5	21
38	Six-junction concentrator solar cells. AIP Conference Proceedings, 2018, , .	0.4	21
39	Ordering-enhanced dislocation glide in III-V alloys. Journal of Applied Physics, 2013, 114, .	2.5	20
40	Highly Transparent Compositionally Graded Buffers for New Metamorphic Multijunction Solar Cell Designs. IEEE Journal of Photovoltaics, 2017, 7, 347-353.	2.5	19
41	Control of asymmetric strain relaxation in InGaAs grown by molecular-beam epitaxy. Journal of Applied Physics, 2010, 107, 103530.	2.5	17
42	Device characterization for design optimization of 4 junction inverted metamorphic concentrator solar cells. AIP Conference Proceedings, 2014, , .	0.4	17
43	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
44	Electron channeling contrast imaging investigation of stacking fault pyramids in GaP on Si nucleation layers. Journal of Crystal Growth, 2020, 532, 125422.	1.5	17
45	Direct-indirect crossover in GaxIn1-xP alloys. Journal of Applied Physics, 2011, 110, .	2.5	16
46	Metal Pillar Interconnection Topology for Bonded Two-Terminal Multijunction IIIâ€“V Solar Cells. IEEE Journal of Photovoltaics, 2013, 3, 868-872.	2.5	16
47	In situ measurement of CuPt alloy ordering using strain anisotropy. Journal of Applied Physics, 2014, 115, 053502.	2.5	16
48	Comparison of the dilute bismide and nitride alloys GaAsBi and GaAsN. Physica Status Solidi (B): Basic Research, 2009, 246, 504-507.	1.5	15
49	In situ strain relaxation comparison between GaAsBi and GaInAs grown by molecular-beam epitaxy. Applied Physics Letters, 2011, 98, .	3.3	15
50	Pathway to 50% efficient inverted metamorphic concentrator solar cells. AIP Conference Proceedings, 2017, , .	0.4	15
51	Intermixing and chemical structure at the interface between n-GaN and V-based contacts. Applied Physics Letters, 2008, 93, .	3.3	14
52	Optimization of 3-junction inverted metamorphic solar cells for high-temperature and high-concentration operation. AIP Conference Proceedings, 2012, , .	0.4	14
53	Thin, high quality GaInP compositionally graded buffer layers grown at high growth rates for metamorphic IIIâ€“V solar cell applications. Journal of Crystal Growth, 2014, 393, 64-69.	1.5	14
54	Multijunction Solar Cells With Graded Buffer Bragg Reflectors. IEEE Journal of Photovoltaics, 2018, 8, 1608-1615.	2.5	14

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55	Improved performance of GaInNAs solar cells grown by molecular-beam epitaxy using increased growth rate instead of surfactants. Journal of Crystal Growth, 2009, 311, 1876-1880.	1.5	13
56	Twoâ€terminal metalâ€interâ€connected multijunction IIIâ€“V solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 593-599.	8.1	13
57	Design flexibility of ultra-high efficiency 4-junction inverted metamorphic solar cells. , 2015, , .		12
58	Development of lattice-matched 1.7 eV GaInAsP solar cells grown on GaAs by MOVPE. , 2016, , .		10
59	Surfaces and interfaces governing the OMVPE growth of APD-free GaP on AsH3-cleaned vicinal Si(100). Journal of Crystal Growth, 2016, 452, 235-239.	1.5	10
60	Reduced dislocation density in GaxIn1â^'xP compositionally graded buffer layers through engineered glide plane switch. Journal of Crystal Growth, 2017, 464, 20-27.	1.5	10
61	Inverted metamorphic AlGaInAs/GaInAs tandem thermophotovoltaic cell designed for thermal energy grid storage application. Journal of Applied Physics, 2020, 128, .	2.5	10
62	Graded buffer Bragg reflectors with high reflectivity and transparency for metamorphic optoelectronics. Journal of Applied Physics, 2021, 129, 173102.	2.5	9
63	Low-misfit epilayer analyses using in situ wafer curvature measurements. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2011, 29, .	1.2	8
64	Critical thickness of atomically ordered III-V alloys. Applied Physics Letters, 2015, 107, 151903.	3.3	8
65	Reverse Heterojunction (Al)GaInP Solar Cells for Improved Efficiency at Concentration. IEEE Journal of Photovoltaics, 2020, 10, 487-494.	2.5	8
66	Pushing inverted metamorphic multijunction solar cells toward higher efficiency at realistic operating conditions. , 2012, , .		7
67	Guided Optimization of Phase-Unstable IIIâ€“V Compositionally Graded Buffers by Cathodoluminescence Spectrum Imaging. IEEE Journal of Photovoltaics, 2020, 10, 109-116.	2.5	7
68	Low temperature photoluminescence from dilute bismides. Journal of Applied Physics, 2008, 104, .	2.5	6
69	Component integration strategies in metamorphic 4-junction III-V concentrator solar cells. , 2014, , .		6
70	Single- and dual-variant atomic ordering in GaAsP compositionally graded buffers on GaP and Si substrates. Journal of Crystal Growth, 2019, 506, 61-70.	1.5	6
71	Microstructure of vanadium-based contacts on n-type GaN. Journal Physics D: Applied Physics, 2012, 45, 105401.	2.8	5
72	Radiation effects on luminescent coupling in IIIâ€“V solar cells. , 2015, , .		5

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73	Improvement of front-junction GaInP by point-defect injection and annealing. , 2021, , .		5
74	High-Irradiance Degradation Studies of Metamorphic 1eV GaInAs Solar Cells. Materials Research Society Symposia Proceedings, 2012, 1432, 105.	0.1	4
75	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2012, , .		4
76	The influence of atomic ordering on strain relaxation during the growth of metamorphic solar cells. Journal of Physics: Conference Series, 2013, 471, 012006.	0.4	4
77	Strategies for Thinning Graded Buffer Regions in Metamorphic Solar Cells and Performance Tradeoffs. IEEE Journal of Photovoltaics, 2018, 8, 1349-1354.	2.5	4
78	A Route to Obtaining Low-Defect IIIâ€“V Epilayers on Si(100) Utilizing MOCVD. Crystal Growth and Design, 2021, 21, 5603-5613.	3.0	4
79	2.0–2.1 eV Ga<inf>x</inf>In<inf>1−x</inf>P solar cells grown on relaxed GaAsP step grades. , 2010, , .		3
80	Mechanically stacked four-junction concentrator solar cells. , 2015, , .		3
81	Energy yield determination of concentrator solar cells using laboratory measurements. AIP Conference Proceedings, 2015, , .	0.4	3
82	Platform for Accurate Efficiency Quantification of > 35% Efficient Thermophotovoltaic Cells. , 2021, , .		3
83	Counterbalancing light absorption and ionic transport losses in the electrolyte for integrated solar water splitting with IIIâ€“V/Si dual-junctions. Applied Physics Letters, 2021, 119, .	3.3	3
84	Investigation of GaP/Si heteroepitaxy on MOCVD prepared Si(100) surfaces. , 2015, , .		2
85	Rapid, enhanced IV characterization of multi-junction PV devices under one sun at NREL. , 2015, , .		2
86	Development of Lattice-Mismatched GaInAsP for Radiation Hardness. IEEE Journal of Photovoltaics, 2020, 10, 103-108.	2.5	2
87	Measuring IV curves and subcell photocurrents in the presence of luminescent coupling. , 2013, , .		1
88	Minority carrier lifetime limitations in Si wafer solar cells with gallium phosphide window layers. , 2016, , .		1
89	Rear Heterojunction GaAs Solar Cells With Strain-Balanced GaInAs/GaAsP Quantum Wells. , 2019, , .		1
90	Towards a III-V solar cell with a metamorphic graded buffer directly grown on v-groove Si substrates. , 2021, , .		1

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91	Measurements of Six-Junction Concentrator Solar Cells. , 2019, , .		1
92	Pushing inverted metamorphic multijunction solar cells toward higher efficiency at realistic operating conditions. , 2013, , .		0
93	Metamorphic IIIâ€“V solar cells: recent progress and potential. , 2015, , .		0
94	Photo-Electrochemical Hydrogen Generation from Inverted Metamorphic Multijunction III-Vs. , 2017, , .		0
95	Notice of Removal Highly transparent compositionally graded buffers for new metamorphic multi-junction solar cell designs. , 2017, , .		0
96	Reduction of defects in GaP layers grown on Si(100) by MOCVD. , 2021, , .		0
97	32.9% efficient tandem solar cell with strain-balanced GaInAs/GaAsP quantum wells. , 2021, , .		0
98	Irradiation Experiments on High Efficiency Nanowire Solar Cells Including Tilted Incidence Angle. , 2020, , .		0