

Toshimitsu Mochizuki

List of Publications by Year in descending order

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74
papers

640
citations

566801

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74
all docs

74
docs citations

74
times ranked

641
citing authors

#	ARTICLE	IF	CITATIONS
1	Thorough subcells diagnosis in a multi-junction solar cell via absolute electroluminescence-efficiency measurements. <i>Scientific Reports</i> , 2015, 5, 7836.	1.6	74
2	Conversion efficiency limits and bandgap designs for multi-junction solar cells with internal radiative efficiencies below unity. <i>Optics Express</i> , 2016, 24, A740.	1.7	34
3	High-efficiency III-V/Si tandem solar cells enabled by the Pd nanoparticle array-mediated "smart stack" approach. <i>Applied Physics Express</i> , 2017, 10, 072301.	1.1	34
4	Probing the surface potential of oxidized silicon by assessing terahertz emission. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	30
5	Subcycle Optical Response Caused by a Terahertz Dressed State with Phase-Locked Wave Functions. <i>Physical Review Letters</i> , 2016, 117, 277402.	2.9	29
6	Impact of sub-cell internal luminescence yields on energy conversion efficiencies of tandem solar cells: A design principle. <i>Applied Physics Letters</i> , 2014, 104, 031118.	1.5	28
7	Characterizations of Radiation Damage in Multijunction Solar Cells Focused on Subcell Internal Luminescence Quantum Yields via Absolute Electroluminescence Measurements. <i>IEEE Journal of Photovoltaics</i> , 2016, 6, 777-782.	1.5	25
8	Solar-cell radiance standard for absolute electroluminescence measurements and open-circuit voltage mapping of silicon solar modules. <i>Journal of Applied Physics</i> , 2016, 119, .	1.1	24
9	Robust red-emission spectra and yields in firefly bioluminescence against temperature changes. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	23
10	Evidence for Two-Dimensional Spin-Glass Ordering in Submonolayer Fe Films on Cleaved InAs Surfaces. <i>Physical Review Letters</i> , 2008, 101, 267204.	2.9	20
11	Gain-switched pulses from InGaAs ridge-quantum-well lasers limited by intrinsic dynamical gain suppression. <i>Optics Express</i> , 2013, 21, 7570.	1.7	19
12	Anomalous Metal Phase Emergent on the Verge of an Exciton Mott Transition. <i>Physical Review Letters</i> , 2017, 118, 067401.	2.9	18
13	Quantum Hall effect at cleaved InSb surfaces and low-temperature annealing effect. <i>Applied Physics Letters</i> , 2007, 90, 202104.	1.5	17
14	Terahertz-Induced Optical Emission of Photoexcited Undoped GaAs Quantum Wells. <i>Physical Review Letters</i> , 2013, 111, 067401.	2.9	16
15	Two-dimensional electrons at a cleaved semiconductor surface: Observation of the quantum Hall effect. <i>Applied Physics Letters</i> , 2005, 87, 062103.	1.5	15
16	Time-resolved observation of coherent excitonic nonlinear response with a table-top narrowband THz pulse wave. <i>Applied Physics Letters</i> , 2015, 107, 221106.	1.5	15
17	Observation of high Rydberg states of one-dimensional excitons in GaAs quantum wires by magnetophotoluminescence excitation spectroscopy. <i>Physical Review B</i> , 2012, 86, .	1.1	14
18	Transient hot-carrier optical gain in a gain-switched semiconductor laser. <i>Applied Physics Letters</i> , 2013, 103, .	1.5	14

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19	Noncontact evaluation of electrical passivation of oxidized silicon using laser terahertz emission microscope and corona charging. <i>Journal of Applied Physics</i> , 2019, 125, .	1.1	13
20	Analysis of Oxyluciferin Photoluminescence Pathways in Aqueous Solutions. <i>Photochemistry and Photobiology</i> , 2015, 91, 74-83.	1.3	12
21	Nonequilibrium Theory of the Conversion Efficiency Limit of Solar Cells Including Thermalization and Extraction of Carriers. <i>Physical Review Applied</i> , 2018, 10, .	1.5	12
22	Magnetotransport in adsorbate-induced two-dimensional electron systems on cleaved InAs surfaces. <i>Journal of Applied Physics</i> , 2011, 109, 102416.	1.1	10
23	Absolute electroluminescence imaging of multi-junction solar cells and calibration standards. , 2015, , .		10
24	Effects of different particle-sized Al pastes on rear local contact formation and cell performance in passivated emitter rear cells. <i>Energy Procedia</i> , 2017, 124, 412-417.	1.8	9
25	Cu Nanoparticle Array-Mediated III-V/Si Integration: Application in Series-Connected Tandem Solar Cells. <i>ACS Applied Energy Materials</i> , 2020, 3, 3445-3453.	2.5	9
26	Integration of Si Heterojunction Solar Cells with III-V Solar Cells by the Pd Nanoparticle Array-Mediated "Smart Stack" Approach. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 11322-11329.	4.0	9
27	Analysis of Gain-Switching Characteristics Including Strong Gain Saturation Effects in Low-Dimensional Semiconductor Lasers. <i>Japanese Journal of Applied Physics</i> , 2012, 51, 098001.	0.8	8
28	Biexciton Luminescence from Individual Isoelectronic Traps in Nitrogen δ -Doped GaAs. <i>Applied Physics Express</i> , 2012, 5, 111201.	1.1	8
29	An Investigation of Internal Quantum Efficiency of Bifacial Interdigitated Back Contact (IBC) Crystalline Silicon Solar Cell. <i>IEEE Journal of Photovoltaics</i> , 2019, 9, 1526-1531.	1.5	7
30	Alkali-metal-induced Fermi-level and two-dimensional electrons at cleaved InAs(110) surfaces. <i>Physical Review B</i> , 2008, 77, .	1.1	6
31	Intrinsic radiative lifetime derived via absorption cross section of one-dimensional excitons. <i>Scientific Reports</i> , 2013, 3, 1941.	1.6	6
32	A "smart stack" triple-junction cell consisting of InGaP/GaAs and crystalline Si. , 2016, , .		6
33	Evaluation of carrier collection probability in bifacial interdigitated-back-contact crystalline silicon solar cells by the internal quantum efficiency mapping method. <i>Japanese Journal of Applied Physics</i> , 2018, 57, 040315.	0.8	6
34	Bifacial interdigitated-back-contact (IBC) crystalline silicon solar cell: fabrication and evaluation by internal quantum efficiency mapping. , 2018, , .		6
35	Analysis of Photoexcitation Energy Dependence in the Photoluminescence of Firefly Luciferin. <i>Photochemistry and Photobiology</i> , 2014, 90, 820-828.	1.3	4
36	Internal quantum efficiency mapping analysis for a >20%-efficiency n-type bifacial solar cell with front-side emitter formed by BBr ₃ thermal diffusion. <i>Japanese Journal of Applied Physics</i> , 2017, 56, 102303.	0.8	4

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37	Electroluminescence of GaNAs/GaAs MQWs p-n junctions grown by RF-MBE using modulated nitrogen radical beam source. <i>Journal of Crystal Growth</i> , 2013, 378, 150-153.	0.7	3
38	Calibration standards and measurement accuracy of absolute electroluminescence and internal properties in multi-junction and arrayed solar cells. <i>Proceedings of SPIE</i> , 2016, , .	0.8	3
39	Characterization and modeling of radiation damages via internal radiative efficiency in multi-junction solar cells. <i>Proceedings of SPIE</i> , 2016, , .	0.8	3
40	Coherent detection of THz-induced sideband emission from excitons in the nonperturbative regime. <i>Physical Review B</i> , 2018, 97, .	1.1	3
41	Internal quantum efficiency mapping for evaluation of rear surface of passivated emitter and rear cell. <i>Applied Physics Express</i> , 2018, 11, 086601.	1.1	3
42	Heat-Recovery Solar Cell. <i>Physical Review Applied</i> , 2019, 12, .	1.5	3
43	Catalytic reduction and reductive functionalisation of carbon dioxide with waste silicon from solar panel as the reducing agent. <i>Energy Advances</i> , 2022, 1, 385-390.	1.4	3
44	Observation of the quantum Hall effect in cleaved InAs surfaces. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2006, 34, 156-159.	1.3	2
45	Single Photon Generation from Nitrogen Atomic-Layer Doped Gallium Arsenide. <i>Materials Science Forum</i> , 0, 706-709, 2916-2921.	0.3	2
46	Double-Core-Slab-Waveguide Semiconductor Lasers for End Optical Pumping. <i>Applied Physics Express</i> , 2013, 6, 062702.	1.1	2
47	Conversion efficiency limits and optimized designs for tandem solar cells with realistic sub-cell material quality. , 2014, , .		2
48	Effect of very high magnetic field on the optical properties of firefly light emitter oxyluciferin. <i>Journal of Luminescence</i> , 2015, 165, 15-18.	1.5	2
49	Multi-junction-solar-cell designs and characterizations based on detailed-balance principle and luminescence yields. <i>Proceedings of SPIE</i> , 2015, , .	0.8	2
50	Current leakage and fill factor in multi-junction solar cells linked via absolute electroluminescence characterization. , 2016, , .		2
51	A solar cell enabling heat recovery without fast carrier extraction. , 2018, , .		2
52	Instantaneous Photocarrier Transport at the Interface in Perovskite Solar Cells to Generate Photovoltage. <i>Photonics</i> , 2022, 9, 316.	0.9	2
53	Quantum Hall effect at cleaved surfaces of InAs and InSb. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2008, 40, 1030-1033.	1.3	1
54	Waveguide Two-Point Differential-Excitation Method for Quantitative Absorption Measurements of Nanostructures. <i>Japanese Journal of Applied Physics</i> , 2012, 51, 106601.	0.8	1

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55	Electrical and Optical Properties of GaNAs/GaAs MQW p-i-n Junction. Transactions of the Materials Research Society of Japan, 2012, 37, 193-196.	0.2	1
56	Fluorescent Radiation Thermometry at Cryogenic Temperatures Based on Detailed Balance Relation. Applied Physics Express, 2013, 6, 056602.	1.1	1
57	Impact of electrical shading loss suppression on interdigitated-back-contact Si solar cells with screen printing metallization concepts. AIP Conference Proceedings, 2019, , .	0.3	1
58	Waveguide Two-Point Differential-Excitation Method for Quantitative Absorption Measurements of Nanostructures. Japanese Journal of Applied Physics, 2012, 51, 106601.	0.8	1
59	Effects of the Non-Radiative Recombination and Bandgap Reduction in Heat-Recovery Solar Cell. , 2020, , .		1
60	Magnetotransport of Two-dimensional Electrons at In-situ Cleaved InAs Surfaces. AIP Conference Proceedings, 2007, , .	0.3	0
61	Evidence for spin-glass ordering in submonolayer Fe films on InAs. , 2010, , .		0
62	Alkali Metal Induced Two Dimensional Electron Systems at Cleaved Surfaces of InAs. , 2010, , .		0
63	Biexciton emission from single isoelectronic traps formed by nitrogen-nitrogen pairs in GaAs. , 2013, , .		0
64	Photoluminescence flash induced by intense single-cycle terahertz pulses in undoped GaAs quantum wells. , 2013, , .		0
65	High-power THz pulse generation and nonlinear THz spectroscopy. , 2013, , .		0
66	Mode imaging and loss evaluation of semiconductor waveguides. Review of Scientific Instruments, 2014, 85, 053109.	0.6	0
67	Balance sheets of energy and carriers and subcell characteristics in a GaInP/GaAs/Ge tandem solar cell. , 2014, , .		0
68	Gain switching of a double-core-waveguide semiconductor laser via traveling-wave optical pumping. Applied Physics Express, 2014, 7, 062701.	1.1	0
69	Characterizations of radiation damages in multi-junction solar cells focused on subcell internal luminescence quantum yields via absolute electroluminescence measurements. , 2015, , .		0
70	Time-resolved observation of excitonic dynamics under coherent terahertz excitation in GaAs quantum wells. , 2015, , .		0
71	Phase-sensitive observation of THz-dressed exciton. , 2016, , .		0
72	Subcycle control of optical response by using a terahertz excitonic dressed state. , 2017, , .		0

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73	Evaluation of Si-SiO _x Interface using Laser Terahertz Emission Microscope (LTEM). , 2016, , .		0
74	A concept of nonequilibrium solar cell heat recovery solar cell. , 2019, , .		0