Jacob J Krich

List of Publications by Year
in descending order

47 papers	803 citations	567281 15 h-index	526287 27 g-index
49 all docs	49 docs citations	49 times ranked	926 citing authors

#	Article	IF	Citations
1	Cubic Dresselhaus Spin-Orbit Coupling in 2D Electron Quantum Dots. Physical Review Letters, 2007, 98, 226802.	7.8	65
2	Quantum state and process tomography of energy transfer systems via ultrafast spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 17615-17620.	7.1	62
3	Nonradiative lifetimes in intermediate band photovoltaicsâ€"Absence of lifetime recovery. Journal of Applied Physics, 2012, 112, .	2.5	56
4	Dynamic Nuclear Polarization in Double Quantum Dots. Physical Review Letters, 2010, 104, 226807.	7.8	47
5	Methodology for vetting heavily doped semiconductors for intermediate band photovoltaics: A case study in sulfur-hyperdoped silicon. Journal of Applied Physics, 2013, 114, .	2.5	46
6	Coherent Exciton Dynamics in Supramolecular Light-Harvesting Nanotubes Revealed by Ultrafast Quantum Process Tomography. ACS Nano, 2014, 8, 5527-5534.	14.6	46
7	Targeted Search for Effective Intermediate Band Solar Cell Materials. IEEE Journal of Photovoltaics, 2015, 5, 212-218.	2.5	44
8	Picosecond carrier recombination dynamics in chalcogen-hyperdoped silicon. Applied Physics Letters, 2014, 105, .	3.3	42
9	A witness for coherent electronic vs vibronic-only oscillations in ultrafast spectroscopy. Journal of Chemical Physics, 2012, 136, 234501.	3.0	41
10	Deactivation of metastable single-crystal silicon hyperdoped with sulfur. Journal of Applied Physics, 2013, 114, .	2.5	41
11	Helix inversion in the chiral nematic and isotropic phases of a liquid crystal. Physical Review E, 2000, 61, 5372-5378.	2.1	27
12	Optimizations of GaAs Nanowire Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 1494-1501.	2.5	21
13	Emergent Percolation Length and Localization in Random Elastic Networks. Physical Review X, 2013, 3, .	8.9	20
14	Two-photon photocurrent in InGaN/GaN nanowire intermediate band solar cells. Communications Materials, 2020, 1, .	6.9	18
15	Increasing efficiency in intermediate band solar cells with overlapping absorptions. Journal of Optics (United Kingdom), 2016, 18, 074010.	2.2	17
16	Efficiency increase in multijunction monochromatic photovoltaic devices due to luminescent coupling. Journal of Applied Physics, 2020, 128, .	2.5	16
17	Practical witness for electronic coherences. Journal of Chemical Physics, 2014, 141, 244109.	3.0	14
18	Efficient wave optics modeling of nanowire solar cells using rigorous coupled-wave analysis. Optics Express, 2019, 27, A133.	3.4	14

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19	Scaling and Localization Lengths of a Topologically Disordered System. Physical Review Letters, 2011, 106, 156405.	7.8	13
20	Simudo: a device model for intermediate band materials. Journal of Computational Electronics, 2020, 19, 111-127.	2.5	13
21	High current density tunnel diodes for multi-junction photovoltaic devices on InP substrates. Applied Physics Letters, 2021, 118, .	3.3	13
22	Automatic Feynman diagram generation for nonlinear optical spectroscopies and application to fifth-order spectroscopy with pulse overlaps. Journal of Chemical Physics, 2021, 154, 034109.	3.0	12
23	Material Quality Requirements for Intermediate Band Solar Cells. IEEE Journal of Photovoltaics, 2020, 10, 467-474.	2.5	10
24	Efficient numerical method for predicting nonlinear optical spectroscopies of open systems. Journal of Chemical Physics, 2021, 154, 034108.	3.0	10
25	Numerical method for nonlinear optical spectroscopies: Ultrafast ultrafast spectroscopy. Journal of Chemical Physics, 2019, 150, 214105.	3.0	8
26	Modeling intermediate band solar cells: a roadmap to high efficiency. Proceedings of SPIE, 2014, , .	0.8	5
27	Opportunities for Increased Efficiency in Monochromatic Photovoltaic Light Conversion. , 2018, , .		4
28	Opportunities for High Efficiency Monochromatic Photovoltaic Power Conversion at 1310 nm. , 2019, , .		4
29	Efficiency limits of electronically coupled upconverter and quantum ratchet solar cells using detailed balance. Journal of Applied Physics, 2020, 127, .	2.5	3
30	InGaN Quantum Dot Superlattices as Ratchet Band Solar Cells. IEEE Journal of Photovoltaics, 2022, 12, 474-482.	2.5	3
31	Optimization of GaAs nanowire solar cell efficiency via optoelectronic modeling. , 2015, , .		2
32	Minimum material quality threshold for intermediate band solar cells using a multi-band device simulator with fully coupled optics. , 2019, , .		2
33	Plasma frequency in doped highly mismatched alloys. Physical Review B, 2021, 103, .	3.2	2
34	Efficient Fourier space quantum dot kâ€‰â‹…â€‰p for wurtzite systems including smooth alloy profile and spatially varying elastic and dielectric constants. Journal of Applied Physics, 2021, 129, .	2.5	2
35	Lossless plasmons in highly mismatched alloys. Applied Physics Letters, 2022, 120, 252102.	3.3	2
36	Optical Optimization of Passivated GaAs Nanowire Solar Cells. , 2017, , .		1

#	Article	IF	Citations
37	Wurtzite InGaN/GaN Quantum Dots for Intermediate Band Solar Cells. , 2019, , .		1
38	Device model for intermediate band materials. , 2019, , .		1
39	InGaN Quantum Dots for Intermediate Band Solar Cells. , 2019, , .		1
40	InGaN quantum dot superlattices as ratchet band solar cells. , 2021, , .		1
41	Erratum to â€œInGaN Quantum Dot Superlattices as Ratchet Band Solar Cellsâ€•[Mar 22 474-482]. IEEE Journal of Photovoltaics, 2022, 12, 1094-1095.	2.5	1
42	Light management in ultra-thin photonic power converters for 1310â€…nm laser illumination. Optics Express, 2022, 30, 23417.	3.4	1
43	Nonradiative trapping and localization in intermediate band solar cells. , 2013, , .		0
44	Device model for intermediate band materials. , 2019, , .		0
45	Detailed Balance Efficiency of 1310 nm Multijunction Photonic Power Converters. , 2019, , .		0
46	Reduced material quality requirements for electronically coupled upconverters compared to intermediate band solar cells. , 2021, , .		0
47	Optimal Band Gaps for Non-Ideal Intermediate Band Solar Cells. , 2020, , .		0