

# Joseph G Tischler

## List of Publications by Year in descending order

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120  
papers

4,344  
citations

172457

29  
h-index

114465

63  
g-index

125  
all docs

125  
docs citations

125  
times ranked

4998  
citing authors

#	ARTICLE	IF	CITATIONS
1	Sub-diffractive volume-confined polaritons in the natural hyperbolic material hexagonal boron nitride. <i>Nature Communications</i> , 2014, 5, 5221.	12.8	686
2	Ultralow-loss polaritons in isotopically pure boron nitride. <i>Nature Materials</i> , 2018, 17, 134-139.	27.5	291
3	Optical Pumping of the Electronic and Nuclear Spin of Single Charge-Tunable Quantum Dots. <i>Physical Review Letters</i> , 2005, 94, 047402.	7.8	287
4	Low-Loss, Extreme Subdiffraction Photon Confinement via Silicon Carbide Localized Surface Phonon Polariton Resonators. <i>Nano Letters</i> , 2013, 13, 3690-3697.	9.1	259
5	Role of epsilon-near-zero substrates in the optical response of plasmonic antennas. <i>Optica</i> , 2016, 3, 339.	9.3	162
6	An extended hardness limit in bulk nanoceramics. <i>Acta Materialia</i> , 2014, 69, 9-16.	7.9	153
7	Comparison of Epitaxial Graphene on Si-face and C-face 4H SiC Formed by Ultrahigh Vacuum and RF Furnace Production. <i>Nano Letters</i> , 2009, 9, 2605-2609.	9.1	140
8	Graded band gap for dark-current suppression in long-wave infrared W-structured type-II superlattice photodiodes. <i>Applied Physics Letters</i> , 2006, 89, 121114.	3.3	139
9	Atomic-scale photonic hybrids for mid-infrared and terahertz nanophotonics. <i>Nature Nanotechnology</i> , 2016, 11, 9-15.	31.5	136
10	Enhanced Multiple Exciton Generation in Quasi-One-Dimensional Semiconductors. <i>Nano Letters</i> , 2011, 11, 3476-3481.	9.1	132
11	Fine structure of trions and excitons in single GaAs quantum dots. <i>Physical Review B</i> , 2002, 66, .	3.2	120
12	W-structured type-II superlattice long-wave infrared photodiodes with high quantum efficiency. <i>Applied Physics Letters</i> , 2006, 89, 053519.	3.3	110
13	Imaging of Anomalous Internal Reflections of Hyperbolic Phonon-Polaritons in Hexagonal Boron Nitride. <i>Nano Letters</i> , 2016, 16, 3858-3865.	9.1	106
14	Active tuning of surface phonon polariton resonances via carrier photoinjection. <i>Nature Photonics</i> , 2018, 12, 50-56.	31.4	102
15	Enhanced Open-Circuit Voltage of PbS Nanocrystal Quantum Dot Solar Cells. <i>Scientific Reports</i> , 2013, 3, 2225.	3.3	88
16	Binding energies of positive and negative trions: From quantum wells to quantum dots. <i>Physical Review B</i> , 2005, 72, .	3.2	86
17	Optical orientation and the Hanle effect of neutral and negatively charged excitons in GaAs/Al <sub>x</sub> Ga <sub>1-x</sub> As quantum wells. <i>Physical Review B</i> , 2002, 66, .	3.2	54
18	Hybrid longitudinal-transverse phonon polaritons. <i>Nature Communications</i> , 2019, 10, 1682.	12.8	46

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19	Structural and optical properties of thick freestanding GaN templates. Journal of Crystal Growth, 2001, 231, 322-328.	1.5	43
20	Antimonide Type-II $\text{InAsSb}$ Photodiodes with Long-Wave Infrared R O A Comparable to HgCdTe. Journal of Electronic Materials, 2007, 36, 852-856.	2.2	39
21	Semi-insulating GaN substrates for high-frequency device fabrication. Journal of Crystal Growth, 2008, 310, 3968-3972.	1.5	38
22	Enhanced Hot-Carrier Effects in InAlAs/InGaAs Quantum Wells. IEEE Journal of Photovoltaics, 2014, 4, 1526-1531.	2.5	38
23	Shallow-Etch Mesa Isolation of Graded-Bandgap $\text{InAsSb}$ Structured Type-II Superlattice Photodiodes. Journal of Electronic Materials, 2010, 39, 1070-1079.	2.2	35
24	Simulation of novel InAlAsSb solar cells. Proceedings of SPIE, 2012, , .	0.8	34
25	Controlling dark current in type-II superlattice photodiodes. Infrared Physics and Technology, 2009, 52, 326-334.	2.9	33
26	Controlling the Infrared Dielectric Function through Atomic-Scale Heterostructures. ACS Nano, 2019, 13, 6730-6741.	14.6	33
27	Band-edge excitons in PbSe nanocrystals and nanorods. Physical Review B, 2010, 82, .	3.2	32
28	Three-Dimensional Control of Self-Assembled Quantum Dot Configurations. ACS Nano, 2010, 4, 3877-3882.	14.6	32
29	Anisotropic Absorption in PbSe Nanorods. ACS Nano, 2014, 8, 581-590.	14.6	29
30	Spatially indirect radiative recombination in InAlAsSb grown lattice-matched to InP by molecular beam epitaxy. Journal of Applied Physics, 2015, 117, 215704.	2.5	29
31	Anharmonic decay of phonons in strain-free wurtzite AlN. Applied Physics Letters, 2004, 85, 1943-1945.	3.3	28
32	Effect of occupation of the excited states and phonon broadening on the determination of the hot carrier temperature from continuous wave photoluminescence in InGaAsP quantum well absorbers. Progress in Photovoltaics: Research and Applications, 2017, 25, 782-790.	8.1	27
33	W-structured type-II superlattice-based long- and very long wavelength infrared photodiodes. , 2005, , .		26
34	Control of PbSe Nanorod Aspect Ratio by Limiting Phosphine Hydrolysis. Journal of the American Chemical Society, 2013, 135, 15071-15076.	13.7	26
35	Aspect-ratio driven evolution of high-order resonant modes and near-field distributions in localized surface phonon polariton nanostructures. Scientific Reports, 2016, 6, 32959.	3.3	25
36	Design of an achievable, all lattice-matched multijunction solar cell using InGaAlAsSb. , 2011, , .		24

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37	Resonant quantum efficiency enhancement of midwave infrared $\text{InBn}$ photodetectors using one-dimensional plasmonic gratings. Applied Physics Letters, 2015, 106, .	3.3	24
38	Properties of Bulk AlN grown by thermodecomposition of $\text{AlCl}_3 \cdot \text{NH}_3$ . Applied Physics Letters, 2003, 83, 2584-2586.	3.3	23
39	Modeling and analysis of high-performance, multicolored anti-reflection coatings for solar cells. Optics Express, 2013, 21, A585.	3.4	22
40	Impact of Nanocrystal Spray Deposition on Inorganic Solar Cells. ACS Applied Materials & Interfaces, 2014, 6, 7902-7909.	8.0	21
41	Dual band LWIR/VLWIR type-II superlattice photodiodes. , 2005, , .		20
42	Seeded growth of GaN single crystals from solution at near atmospheric pressure. Journal of Crystal Growth, 2008, 310, 3934-3940.	1.5	20
43	Size and Temperature Dependence of Band-Edge Excitons in PbSe Nanowires. Journal of Physical Chemistry Letters, 2011, 2, 527-531.	4.6	20
44	Magneto-optical fingerprints of distinct graphene multilayers using the giant infrared Kerr effect. Scientific Reports, 2013, 3, 3143.	3.3	20
45	Synthesis and Characterization of PbS/ZnS Core/Shell Nanocrystals. Chemistry of Materials, 2018, 30, 4112-4123.	6.7	20
46	Sintered CdTe Nanocrystal Thin Films: Determination of Optical Constants and Application in Novel Inverted Heterojunction Solar Cells. IEEE Nanotechnology Magazine, 2014, 13, 551-556.	2.0	19
47	Effect of Ligand Structure on the Optical and Electronic Properties of Nanocrystalline PbSe Films. Journal of Physical Chemistry C, 2012, 116, 6031-6037.	3.1	18
48	Photoluminescence lineshape and dynamics of localized excitonic transitions in InAsP epitaxial layers. Journal of Applied Physics, 2014, 115, .	2.5	18
49	Molecular beam epitaxy growth of antimonide type-II $\text{InAsP}$ -high-power interband cascade lasers and long-wavelength infrared photodiodes. Journal of Vacuum Science & Technology B, 2007, 25, 991.	1.3	17
50	Inorganic Photovoltaic Devices Fabricated Using Nanocrystal Spray Deposition. ACS Applied Materials & Interfaces, 2013, 5, 8828-8832.	8.0	16
51	Optical properties of Si-doped and Be-doped InAlAs lattice-matched to InP grown by molecular beam epitaxy. Journal of Applied Physics, 2013, 114, .	2.5	16
52	Safer salts for CdTe nanocrystal solution processed solar cells: the dual roles of ligand exchange and grain growth. Journal of Materials Chemistry A, 2015, 3, 13057-13065.	10.3	16
53	In Situ Irradiation and Measurement of Triple Junction Solar Cells at Low Intensity, Low Temperature (LILT) Conditions. IEEE Transactions on Nuclear Science, 2008, 55, 3502-3507.	2.0	14
54	Effects of a Lead Chloride Shell on Lead Sulfide Quantum Dots. Journal of Physical Chemistry Letters, 2019, 10, 1914-1918.	4.6	14

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55	Ultrafast Active Tuning of the Berreman Mode. ACS Photonics, 2020, 7, 279-287.	6.6	14
56	Properties of Fe-doped semi-insulating GaN substrates for high-frequency device fabrication. Journal of Crystal Growth, 2007, 305, 403-407.	1.5	13
57	Recent progress in W- structured type-II superlattice photodiodes. , 2007, , .		12
58	Drift-diffusion modeling of InP-based triple junction solar cells. Proceedings of SPIE, 2013, , .	0.8	12
59	Synthesis and Optical Properties of PbSe Nanorods with Controlled Diameter and Length. Journal of Physical Chemistry Letters, 2015, 6, 3360-3364.	4.6	12
60	Full-spectrum optically detected resonance (ODR) spectroscopy of GaAs/AlGaAs quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 1998, 2, 39-43.	2.7	11
61	Radiation Damage in Type-II Superlattice Infrared Detectors. Journal of Electronic Materials, 2010, 39, 852-856.	2.2	11
62	Molecular beam epitaxial growth effects on type-II antimonide lasers and photodiodes. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2010, 28, C3G8-C3G12.	1.2	11
63	Probing hyperbolic polaritons. Nature Photonics, 2015, 9, 638-640.	31.4	11
64	Passivation of W-structured type-II superlattice long-wave infrared photodiodes. , 2007, 6542, 51.		10
65	Dynamics of photoexcited carriers and spins in InAsP ternary alloys. Applied Physics Letters, 2013, 102, 222102.	3.3	10
66	The effect and nature of N-H complexes in the control of the dominant photoluminescence transitions in UV-hydrogenated GaInNAs. RSC Advances, 2017, 7, 25353-25361.	3.6	10
67	Controlling dissolution of PbTe nanoparticles in organic solvents during liquid cell transmission electron microscopy. Nanoscale, 2019, 11, 14573-14580.	5.6	10
68	Pressure Tuning of Competing Charged and Neutral Exciton States in Quasi-2D Semiconductor Structures. Physica Status Solidi (B): Basic Research, 1999, 215, 263-267.	1.5	9
69	The effect of an InP cap layer on the photoluminescence of an In <sub>x</sub> Ga <sub>1-x</sub> As <sub>y</sub> P <sub>1-y</sub> /In <sub>z</sub> Al <sub>1-x-z</sub> As quantum well heterostructure. Journal of Applied Physics, 2017, 121, .	2.5	9
70	Synthesis of PbSe nanowires: the impact of alkylphosphonic acid addition. Journal of Materials Chemistry, 2011, 21, 2616.	6.7	8
71	Binary Superlattices of Infrared Plasmonic and Excitonic Nanocrystals. ACS Applied Materials & Interfaces, 2020, 12, 24271-24280.	8.0	8
72	Pressure Tuning of Many-Electron Impurity Interactions in Confined Semiconductor Structures. Physica Status Solidi (B): Basic Research, 1999, 211, 131-136.	1.5	7

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73	Optical characterization of In <sub>0.27</sub> Ga <sub>0.73</sub> Sb and In <sub>x</sub> Al <sub>1-x</sub> As <sub>y</sub> Sb <sub>1-y</sub> epitaxial layers for development of 6.2-ÅS-based heterojunction bipolar transistors. Journal of Vacuum Science & Technology B, 2006, 24, 1604.	1.3	7
74	Controlling interfacial disorder and strain of W-structured type-II superlattices using As <sub>2</sub> flux. Journal of Crystal Growth, 2007, 303, 515-519.	1.5	7
75	Towards high efficiency multi-junction solar cells grown on InP Substrates. , 2013, , .		7
76	Resonant donor defect as a cause of compensation in p-type ZnSe: Photoluminescence studies under hydrostatic pressure. Physical Review B, 2001, 63, .	3.2	6
77	GaN single crystals of different habit grown from solution at near atmospheric pressure. Journal of Crystal Growth, 2010, 312, 2551-2557.	1.5	6
78	Modeling, design and experimental results for high efficiency multi-junction solar cells lattice matched to InP. Proceedings of SPIE, 2014, , .	0.8	6
79	Pressure Dependence of the Electron Effective Mass in GaAs up to the 1s(Γ <sup>6</sup> )-1s(X) Crossover. Physica Status Solidi (B): Basic Research, 1996, 198, 41-47.	1.5	5
80	Heterostructure interface effects on the far-infrared magneto-optical spectra of InAs/GaSb quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 186-189.	2.7	5
81	Polarized electrons, trions, and nuclei in charged quantum dots. Physica Status Solidi (B): Basic Research, 2003, 238, 266-272.	1.5	5
82	Determination of conduction band offsets in type-III In <sub>0.27</sub> Ga <sub>0.73</sub> Sb <sub>1-x</sub> In <sub>x</sub> Al <sub>1-x</sub> As <sub>y</sub> Sb <sub>1-y</sub> heterostructures grown by molecular beam epitaxy. Physical Review B, 2006, 74, .	3.2	5
83	Solution processing of CdTe nanocrystals for thin-film solar cells. , 2012, , .		5
84	Vapor deposition of organic-inorganic hybrid perovskite thin-films for photovoltaic applications. , 2014, , .		5
85	Bulk properties of InN films determined by experiments and theory. Journal of Crystal Growth, 2014, 403, 124-127.	1.5	5
86	Hydrostatic pressure dependence of negative-donor-ion singlet and singlet-like bound magnetoplasmon transitions in doped GaAs/AlGaAs quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 6, 177-181.	2.7	4
87	Structural and electronic characteristics of Cu(In,Ga)Se <sub>2</sub> thin films sputtered from quaternary targets. , 2012, , .		4
88	Multiple exciton generation in PbSe nanorods. , 2012, , .		4
89	Implementation of plasmonic band structure to understand polariton hybridization within metamaterials. Optics Express, 2018, 26, 29363.	3.4	4
90	Giant magneto-optical Kerr enhancement from films on SiC due to the optical properties of the substrate. Physical Review B, 2019, 99, .	3.2	4

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91	Rapid thermal annealing of InAlAsSb lattice-matched to InP for top cell applications. , 2015, , .		3
92	Hot-carrier effects in type II heterostructures. , 2015, , .		3
93	Energy Level Alignment of Molybdenum Oxide on Colloidal Lead Sulfide (PbS) Thin Films for Optoelectronic Devices. ACS Applied Materials & Interfaces, 2018, 10, 24981-24986.	8.0	3
94	Natural hyperbolicity in bulk calcite. Journal of Applied Physics, 2021, 130, .	2.5	3
95	Optically detected resonance spectroscopy of interface fluctuation quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2005, 26, 158-162.	2.7	2
96	High quantum efficiency long-wave infrared photodiodes using W- structured type-II superlattices. , 2006, 6127, 195.		2
97	Internal transitions of quasi-two-dimensional charged magnetoexcitons in the presence of purposely introduced weak lateral potential energy variations. Physical Review B, 2007, 75, .	3.2	2
98	Solution-deposited CdTe nanocrystal thin-films for heterojunction solar cells. , 2013, , .		2
99	Electrical Measurement Under Atmospheric Conditions of PbSe Nanocrystal Thin Films Passivated by Remote Plasma Atomic Layer Deposition of Al <sub>2</sub> O <sub>3</sub> . IEEE Nanotechnology Magazine, 2013, 12, 146-151.	2.0	2
100	Improved bandgap-voltage offset in InGaAs/InAlGaAs quantum well solar cells. , 2013, , .		2
101	Step graded buffer for (110) InSb quantum wells grown by molecular beam epitaxy. Journal of Crystal Growth, 2014, 404, 122-129.	1.5	2
102	Molecular beam epitaxy of InAlAsSb for the top cell in high-efficiency InP-based lattice-matched triple-junction solar cells. , 2015, , .		2
103	Rapid Bimolecular and Defect-Assisted Carrier Recombination in Hexagonal Boron Nitride. Journal of Physical Chemistry C, 2019, 123, 14689-14695.	3.1	2
104	Intrinsic Gap States in Semiconductors with Inverted Band Structure: Comparison of SnTe vs PbTe Nanocrystals. Journal of Physical Chemistry C, 2019, 123, 11974-11981.	3.1	2
105	Plasmonic nanoarcs: a versatile platform with tunable localized surface plasmon resonances in octave intervals. Optics Express, 2020, 28, 30889.	3.4	2
106	Enhanced Infrared Photodiodes Based on PbS/PbCl <sub>2</sub> Core/Shell Nanocrystals. ACS Applied Materials & Interfaces, 2021, 13, 58916-58926.	8.0	2
107	Characterization, modeling and analysis of InAlAsSb Schottky barrier solar cells grown on InP. , 2014, , .		1
108	Fabrication of Fully Solution Processed Inorganic Nanocrystal Photovoltaic Devices. Journal of Visualized Experiments, 2016, , .	0.3	1

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109	Cu <sub>2-x</sub> S/PbS Core/Shell Nanocrystals with Improved Chemical Stability. Chemistry of Materials, 2021, 33, 6685-6691.	6.7	1
110	Recent progress by mid-IR antimonide type-II "W" interband cascade lasers and LWIR detectors. , 2006, , .		0
111	Modeling and analysis of multicolored anti-reflection coatings with high transmittance for different solar cell materials. , 2013, , .		0
112	The effects of electric field on InGaAs quantum well i-region placement in InAlGaAs solar cells. , 2014, , .		0
113	Improved theoretical model of InN optical properties. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 581-584.	0.8	0
114	Dark current reduction and bandgap-voltage offset in solution-processed nanocrystal solar cells. , 2015, , .		0
115	High-Order Multipole Resonances in Cuboidal Surface Phonon Polariton Nanoresonators. NATO Science for Peace and Security Series B: Physics and Biophysics, 2017, , 501-502.	0.3	0
116	Strong Coupling Effects Between IR-Inactive Zone Folded LO Phonon and Localized Surface Phonon Polariton Modes in SiC Nanopillars. NATO Science for Peace and Security Series B: Physics and Biophysics, 2018, , 417-418.	0.3	0
117	Far-Infrared Spectroscopy of Quasi-2D Impurity States in Semiconductor Nanostructures Under High Hydrostatic Pressure. , 2001, , 303-319.		0
118	Low-Loss Phonon Polaritons in Nanostructured Dielectrics. NATO Science for Peace and Security Series B: Physics and Biophysics, 2017, , 511-512.	0.3	0
119	Symmetry Breaking and Active Fano Resonance Tuning in Dolmen Nanostructures. NATO Science for Peace and Security Series B: Physics and Biophysics, 2018, , 407-408.	0.3	0
120	3D-printed infrared metamaterials. , 2019, , .		0