

Andrei Piryatinski

List of Publications by Year in descending order

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76
papers

4,042
citations

159585

30
h-index

114465

63
g-index

81
all docs

81
docs citations

81
times ranked

4383
citing authors

#	ARTICLE	IF	CITATIONS
1	Stochastic exciton-scattering theory of optical line shapes: Renormalized many-body contributions. <i>Journal of Chemical Physics</i> , 2022, 157, .	3.0	1
2	Second-harmonic generation in nonlinear plasmonic lattices enhanced by quantum emitter gain medium. <i>Journal of Chemical Physics</i> , 2021, 154, 084703.	3.0	5
3	Extending the Near-Infrared Emission Range of Indium Phosphide Quantum Dots for Multiplexed <i>In Vivo</i> Imaging. <i>Nano Letters</i> , 2021, 21, 3271-3279.	9.1	40
4	Quantum Light Emission from Coupled Defect States in DNA-Functionalized Carbon Nanotubes. <i>ACS Nano</i> , 2021, 15, 10406-10414.	14.6	22
5	PbS/CdS Quantum Dot Room-Temperature Single-Emitter Spectroscopy Reaches the Telecom O and S Bands via an Engineered Stability. <i>ACS Nano</i> , 2021, 15, 575-587.	14.6	22
6	Strong Purcell enhancement at telecom wavelengths afforded by spinel Fe ₃ O ₄ nanocrystals with size-tunable plasmonic properties. <i>Nanoscale Horizons</i> , 2021, , .	8.0	2
7	Probing exciton/exciton interactions with entangled photons: Theory. <i>Journal of Chemical Physics</i> , 2020, 152, 071101.	3.0	9
8	Nonequilibrium states of a plasmonic Dicke model with coherent and dissipative surface-plasmon-quantum-emitter interactions. <i>Physical Review Research</i> , 2020, 2, .	3.6	3
9	Physics of Electron Emission and Beam Dynamics from a Single Diamond Field Emitter. , 2020, , .		0
10	Cooperative Light Emission in the Presence of Strong Inhomogeneous Broadening. <i>Physical Review Letters</i> , 2019, 123, 123605.	7.8	8
11	Theory of electron transport and emission from a semiconductor nanotip. <i>Journal of Applied Physics</i> , 2019, 125, 214301.	2.5	2
12	Photon entanglement entropy as a probe of many-body correlations and fluctuations. <i>Journal of Chemical Physics</i> , 2019, 150, 184106.	3.0	12
13	Modeling of diamond field emitter arrays for a compact source of high brightness electron beams. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	6
14	Intrinsic limits of defect-state photoluminescence dynamics in functionalized carbon nanotubes. <i>Nanoscale</i> , 2019, 11, 9125-9132.	5.6	17
15	Resonance Raman signature of intertube excitons in compositionally-defined carbon nanotube bundles. <i>Nature Communications</i> , 2018, 9, 637.	12.8	16
16	Bandgap Engineering of Indium Phosphide-Based Core/Shell Heterostructures Through Shell Composition and Thickness. <i>Frontiers in Chemistry</i> , 2018, 6, 567.	3.6	42
17	Probing dynamical symmetry breaking using quantum-entangled photons. <i>Quantum Science and Technology</i> , 2018, 3, 015003.	5.8	14
18	Giant PbSe/CdSe/CdSe Quantum Dots: Crystal-Structure-Defined Ultrastable Near-Infrared Photoluminescence from Single Nanocrystals. <i>Journal of the American Chemical Society</i> , 2017, 139, 11081-11088.	13.7	48

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19	Thermoelectric properties of semiconductor nanowire networks. <i>Journal of Applied Physics</i> , 2016, 119, 125107.	2.5	6
20	Effect of periodic potential on exciton states in semiconductor carbon nanotubes. <i>Chemical Physics</i> , 2016, 481, 177-183.	1.9	0
21	Quantum Symmetry Breaking of Exciton/Polaritons in a Metal-Nanorod Plasmonic Array. <i>Journal of Physical Chemistry A</i> , 2016, 120, 3109-3116.	2.5	7
22	When excitons and plasmons meet: Emerging function through synthesis and assembly. <i>MRS Bulletin</i> , 2015, 40, 768-776.	3.5	14
23	Influences of Exciton Diffusion and Exciton-Exciton Annihilation on Photon Emission Statistics of Carbon Nanotubes. <i>Physical Review Letters</i> , 2015, 115, 017401.	7.8	33
24	Plasmonic giant quantum dots: hybrid nanostructures for truly simultaneous optical imaging, photothermal effect and thermometry. <i>Chemical Science</i> , 2015, 6, 2224-2236.	7.4	26
25	Hybrid Graphene-Giant Nanocrystal Quantum Dot Assemblies with Highly Efficient Biexciton Emission. <i>Advanced Optical Materials</i> , 2015, 3, 39-43.	7.3	21
26	Elucidation of Two Giants: Challenges to Thick-Shell Synthesis in CdSe/ZnSe and ZnSe/CdS Core/Shell Quantum Dots. <i>Journal of the American Chemical Society</i> , 2015, 137, 3755-3758.	13.7	72
27	Influence of Exciton Dimensionality on Spectral Diffusion of Single-Walled Carbon Nanotubes. <i>ACS Nano</i> , 2014, 8, 10613-10620.	14.6	16
28	Effect of Localized Surface-Plasmon Mode on Exciton Transport and Radiation Emission in Carbon Nanotubes. <i>Journal of Physical Chemistry B</i> , 2014, 118, 8070-8080.	2.6	5
29	Low-temperature hopping dynamics with energy disorder: Renormalization group approach. <i>Journal of Chemical Physics</i> , 2013, 139, 084118.	3.0	1
30	Super-Poissonian Statistics of Photon Emission from Single CdSe-CdS Core-Shell Nanocrystals Coupled to Metal Nanostructures. <i>Physical Review Letters</i> , 2013, 110, 117401.	7.8	66
31	Non-blinking "Giant" Nanocrystal Quantum Dots: Ideal Probes for Real-time Three-dimensional Tracking. , 2013, , .		0
32	Numerical analysis of carrier multiplication mechanisms in nanocrystalline and bulk forms of PbSe and PbS. <i>Physical Review B</i> , 2012, 86, .	3.2	15
33	Suppressed Blinking and Auger Recombination in Near-Infrared Type-II InP/CdS Nanocrystal Quantum Dots. <i>Nano Letters</i> , 2012, 12, 5545-5551.	9.1	131
34	Ligand Effects on Optical Properties of Small Gold Clusters: A TDDFT Study. <i>Journal of Physical Chemistry C</i> , 2012, 116, 3242-3249.	3.1	26
35	Probing Interband Coulomb Interactions in Semiconductor Nanostructures with 2D Double-Quantum Coherence Spectroscopy. <i>Journal of Physical Chemistry B</i> , 2011, 115, 5372-5382.	2.6	7
36	Numerical Study of Carrier Multiplication Pathways in Photoexcited Nanocrystal and Bulk Forms of PbSe. <i>Physical Review Letters</i> , 2011, 106, 207401.	7.8	37

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37	DFT Study of Ligand Binding to Small Gold Clusters. Journal of Physical Chemistry Letters, 2010, 1, 927-931.	4.6	64
38	An exciton scattering model for carrier multiplication in semiconductor nanocrystals: Theory. Journal of Chemical Physics, 2010, 133, 084508.	3.0	35
39	Bright and dark excitons in semiconductor carbon nanotubes: insights from electronic structure calculations. Physical Chemistry Chemical Physics, 2009, 11, 4113.	2.8	40
40	Dynamical variational approach to non-adiabatic electronic structure. Chemical Physics, 2008, 347, 25-38.	1.9	2
41	First-Principles-Based Calculations of Vibrational Normal Modes in Polyatomic Materials with Translational Symmetry: Application to PETN Molecular Crystal. Journal of Physical Chemistry B, 2008, 112, 13252-13257.	2.6	19
42	Cross-polarized excitons in carbon nanotubes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 6797-6802.	7.1	49
43	Vibrational spectroscopy of polyatomic materials: Semiempirical calculations of anharmonic couplings and infrared and Raman linewidths in naphthalene and PETN crystals. Physical Review B, 2007, 75, .	3.2	15
44	Effect of Quantum and Dielectric Confinement on the Exciton-Exciton Interaction Energy in Type II Core/Shell Semiconductor Nanocrystals. Nano Letters, 2007, 7, 108-115.	9.1	217
45	Excitons and Peierls Distortion in Conjugated Carbon Nanotubes. Nano Letters, 2007, 7, 86-92.	9.1	46
46	Non-van der Waals Treatment of the Hydrophobic Solubilities of CF ₄ . Journal of the American Chemical Society, 2007, 129, 10133-10140.	13.7	35
47	Light Amplification in the Single-Exciton Regime Using Exciton-Exciton Repulsion in Type-II Nanocrystal Quantum Dots. Journal of Physical Chemistry C, 2007, 111, 15382-15390.	3.1	84
48	Single-exciton optical gain in semiconductor nanocrystals. Nature, 2007, 447, 441-446.	27.8	894
49	Type-II Core/Shell CdS/ZnSe Nanocrystals: Synthesis, Electronic Structures, and Spectroscopic Properties. Journal of the American Chemical Society, 2007, 129, 11708-11719.	13.7	402
50	Vibrational Spectral Diffusion of Azide in Water. Journal of Physical Chemistry B, 2006, 110, 18933-18938.	2.6	66
51	Real-time observation of nonlinear coherent phonon dynamics in single-walled carbon nanotubes. Nature Physics, 2006, 2, 515-520.	16.7	174
52	Absorption cross sections and Auger recombination lifetimes in inverted core-shell nanocrystals: Implications for lasing performance. Journal of Applied Physics, 2006, 99, 034309.	2.5	93
53	Real time observation of non-linear coherent phonon dynamics in semiconducting single wall carbon nanotubes. , 2006, , .		0
54	Semiclassical Scattering on Conical Intersections. Physical Review Letters, 2005, 95, 223001.	7.8	17

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55	Three-pulse photon-echo spectroscopy as a probe of the photoexcited electronic state manifold in coupled electron-phonon systems. <i>Physical Review B</i> , 2004, 70, .	3.2	4
56	On the existence of photoexcited breathers in conducting polymers. <i>Physical Review B</i> , 2004, 70, .	3.2	13
57	Inverted Core/Shell Nanocrystals Continuously Tunable between Type-I and Type-II Localization Regimes. <i>Nano Letters</i> , 2004, 4, 1485-1488.	9.1	218
58	Light Amplification Using Inverted Core/Shell Nanocrystals: Towards Lasing in the Single-Exciton Regime. <i>Journal of Physical Chemistry B</i> , 2004, 108, 10625-10630.	2.6	165
59	Vibrational spectroscopy of HOD in liquid D ₂ O. V. Infrared three-pulse photon echoes. <i>Journal of Chemical Physics</i> , 2003, 118, 9672-9679.	3.0	74
60	Vibrational spectroscopy of HOD in liquid D ₂ O. IV. Infrared two-pulse photon echoes. <i>Journal of Chemical Physics</i> , 2003, 118, 9664-9671.	3.0	56
61	Real Space Analysis of Excitonic Interactions and Coherence Length in Helical Aggregates. <i>Journal of Physical Chemistry A</i> , 2002, 106, 3524-3530.	2.5	14
62	Determining Vibrational Solvation-Correlation Functions from Three-Pulse Infrared Photon Echoes. <i>Journal of Physical Chemistry B</i> , 2002, 106, 8055-8063.	2.6	65
63	Signatures of β -Peptide Unfolding in Two-Dimensional Vibrational Echo Spectroscopy: A Simulation Study. <i>Journal of the American Chemical Society</i> , 2001, 123, 3114-3124.	13.7	99
64	Vibrational-exciton relaxation probed by three-pulse echoes in polypeptides. <i>Chemical Physics</i> , 2001, 266, 285-294.	1.9	29
65	Two-dimensional correlation spectroscopies of localized vibrations. <i>Chemical Physics</i> , 2001, 266, 311-322.	1.9	25
66	Femtosecond pump-probe spectroscopy of the dendrimeric nanostar. <i>Journal of Luminescence</i> , 2001, 94-95, 569-573.	3.1	5
67	Nonlinear two-dimensional IR spectroscopy of unfolding processes in β -peptides. <i>Springer Series in Chemical Physics</i> , 2001, , 507-509.	0.2	1
68	Two-Dimensional Coherent Infrared Spectroscopy of Vibrational Excitons in Polypeptides. , 2001, , .		0
69	Simulations of two-dimensional femtosecond infrared photon echoes of glycine dipeptide. <i>Journal of Raman Spectroscopy</i> , 2000, 31, 125-135.	2.5	67
70	Two-dimensional infrared femtosecond spectroscopy of cyclic pentapeptides. <i>AIP Conference Proceedings</i> , 2000, , .	0.4	0
71	Probing Peptide and Protein Dynamics by Ultrafast Multidimensional Vibrational Spectroscopy. , 2000, , .		0
72	Complete Determination of Relaxation Parameters From Two-Dimensional Raman Spectroscopy. <i>Laser Chemistry</i> , 1999, 19, 109-116.	0.5	10

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73	Semiclassical simulations of multidimensional Raman echoes. <i>Journal of Chemical Physics</i> , 1999, 110, 1711-1725.	3.0	33
74	Two-Dimensional Raman Echoes:â€‰ Femtosecond View of Molecular Structure and Vibrational Coherence. <i>Accounts of Chemical Research</i> , 1999, 32, 145-154.	15.6	144
75	Luminescence from interacting Frenkel excitons at high-level optical excitation. <i>Physical Review B</i> , 1998, 57, 3867-3873.	3.2	2
76	Excimer states and enhanced two-photon absorption in intramolecular charge-transfer crystals. <i>Chemical Physics Letters</i> , 1997, 269, 156-160.	2.6	13