Andrei Piryatinski

List of Publications by Year
in descending order

76	4,042	159585 30	114465 63
papers	citations	h-index	g-index

81	81	81	4383
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Single-exciton optical gain in semiconductor nanocrystals. Nature, 2007, 447, 441-446.	27.8	894
2	Type-II Core/Shell CdS/ZnSe Nanocrystals:â€‰ Synthesis, Electronic Structures, and Spectroscopic Properties. Journal of the American Chemical Society, 2007, 129, 11708-11719.	13.7	402
3	Inverted Core/Shell Nanocrystals Continuously Tunable between Type-I and Type-II Localization Regimes. Nano Letters, 2004, 4, 1485-1488.	9.1	218
4	Effect of Quantum and Dielectric Confinement on the Excitonâ^'Exciton Interaction Energy in Type II Core/Shell Semiconductor Nanocrystals. Nano Letters, 2007, 7, 108-115.	9.1	217
5	Real-time observation of nonlinear coherent phonon dynamics in single-walled carbon nanotubes. Nature Physics, 2006, 2, 515-520.	16.7	174
6	Light Amplification Using Inverted Core/Shell Nanocrystals:Â Towards Lasing in the Single-Exciton Regime. Journal of Physical Chemistry B, 2004, 108, 10625-10630.	2.6	165
7	Two-Dimensional Raman Echoes:â€‰ Femtosecond View of Molecular Structure and Vibrational Coherence. Accounts of Chemical Research, 1999, 32, 145-154.	15.6	144
8	Suppressed Blinking and Auger Recombination in Near-Infrared Type-II InP/CdS Nanocrystal Quantum Dots. Nano Letters, 2012, 12, 5545-5551.	9.1	131
9	Signatures of Î²-Peptide Unfolding in Two-Dimensional Vibrational Echo Spectroscopy:Â A Simulation Study. Journal of the American Chemical Society, 2001, 123, 3114-3124.	13.7	99
10	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
11	Light Amplification in the Single-Exciton Regime Using Excitonâ^'Exciton Repulsion in Type-II Nanocrystal Quantum Dots. Journal of Physical Chemistry C, 2007, 111, 15382-15390.	3.1	84
12	Vibrational spectroscopy of HOD in liquid D2O. V. Infrared three-pulse photon echoes. Journal of Chemical Physics, 2003, 118, 9672-9679.	3.0	74
13	Elucidation of Two Giants: Challenges to Thick-Shell Synthesis in CdSe/ZnSe and ZnSe/CdS Core/Shell Quantum Dots. Journal of the American Chemical Society, 2015, 137, 3755-3758.	13.7	72
14	Simulations of two-dimensional femtosecond infrared photon echoes of glycine dipeptide. Journal of Raman Spectroscopy, 2000, 31, 125-135.	2.5	67
15	Vibrational Spectral Diffusion of Azide in Waterâ€. Journal of Physical Chemistry B, 2006, 110, 18933-18938.	2.6	66
16	Super-Poissonian Statistics of Photon Emission from Single CdSe-CdS Core-Shell Nanocrystals Coupled to Metal Nanostructures. Physical Review Letters, 2013, 110, 117401.	7.8	66
17	Determining Vibrational Solvation-Correlation Functions from Three-Pulse Infrared Photon Echoesâ€. Journal of Physical Chemistry B, 2002, 106, 8055-8063.	2.6	65
18	DFT Study of Ligand Binding to Small Gold Clusters. Journal of Physical Chemistry Letters, 2010, 1, 927-931.	4.6	64

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19	Vibrational spectroscopy of HOD in liquid D2O. IV. Infrared two-pulse photon echoes. Journal of Chemical Physics, 2003, 118, 9664-9671.	3.0	56
20	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
21	Giant PbSe/CdSe/CdSe Quantum Dots: Crystal-Structure-Defined Ultrastable Near-Infrared Photoluminescence from Single Nanocrystals. Journal of the American Chemical Society, 2017, 139, 11081-11088.	13.7	48
22	Excitons and Peierls Distortion in Conjugated Carbon Nanotubes. Nano Letters, 2007, 7, 86-92.	9.1	46
23	Bandgap Engineering of Indium Phosphide-Based Core/Shell Heterostructures Through Shell Composition and Thickness. Frontiers in Chemistry, 2018, 6, 567.	3.6	42
24	Bright and dark excitons in semiconductor carbon nanotubes: insights from electronic structure calculations. Physical Chemistry Chemical Physics, 2009, 11, 4113.	2.8	40
25	Extending the Near-Infrared Emission Range of Indium Phosphide Quantum Dots for Multiplexed In Vivo Imaging. Nano Letters, 2021, 21, 3271-3279.	9.1	40
26	Numerical Study of Carrier Multiplication Pathways in Photoexcited Nanocrystal and Bulk Forms of PbSe. Physical Review Letters, 2011, 106, 207401.	7.8	37
27	Non-van der Waals Treatment of the Hydrophobic Solubilities of CF4. Journal of the American Chemical Society, 2007, 129, 10133-10140.	13.7	35
28	An exciton scattering model for carrier multiplication in semiconductor nanocrystals: Theory. Journal of Chemical Physics, 2010, 133, 084508.	3.0	35
29	Semiclassical simulations of multidimensional Raman echoes. Journal of Chemical Physics, 1999, 110, 1711-1725.	3.0	33
30	Influences of Exciton Diffusion and Exciton-Exciton Annihilation on Photon Emission Statistics of Carbon Nanotubes. Physical Review Letters, 2015, 115, 017401.	7.8	33
31	Vibrational-exciton relaxation probed by three-pulse echoes in polypeptides. Chemical Physics, 2001, 266, 285-294.	1.9	29
32	Ligand Effects on Optical Properties of Small Gold Clusters: A TDDFT Study. Journal of Physical Chemistry C, 2012, 116, 3242-3249.	3.1	26
33	Plasmonic giant quantum dots: hybrid nanostructures for truly simultaneous optical imaging, photothermal effect and thermometry. Chemical Science, 2015, 6, 2224-2236.	7.4	26
34	Two-dimensional correlation spectroscopies of localized vibrations. Chemical Physics, 2001, 266, 311-322.	1.9	25
35	Quantum Light Emission from Coupled Defect States in DNA-Functionalized Carbon Nanotubes. ACS Nano, 2021, 15, 10406-10414.	14.6	22
36	PbS/CdS Quantum Dot Room-Temperature Single-Emitter Spectroscopy Reaches the Telecom O and S Bands via an Engineered Stability. ACS Nano, 2021, 15, 575-587.	14.6	22

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37	Hybrid Grapheneâ€“Giant Nanocrystal Quantum Dot Assemblies with Highly Efficient Biexciton Emission. Advanced Optical Materials, 2015, 3, 39-43.	7.3	21
38	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
39	Semiclassical Scattering on Conical Intersections. Physical Review Letters, 2005, 95, 223001.	7.8	17
40	Intrinsic limits of defect-state photoluminescence dynamics in functionalized carbon nanotubes. Nanoscale, 2019, 11, 9125-9132.	5.6	17
41	Influence of Exciton Dimensionality on Spectral Diffusion of Single-Walled Carbon Nanotubes. ACS Nano, 2014, 8, 10613-10620.	14.6	16
42	Resonance Raman signature of intertube excitons in compositionally-defined carbon nanotube bundles. Nature Communications, 2018, 9, 637.	12.8	16
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	Numerical analysis of carrier multiplication mechanisms in nanocrystalline and bulk forms of PbSe and PbS. Physical Review B, 2012, 86, .	3.2	15
45	Real Space Analysis of Excitonic Interactions and Coherence Length in Helical Aggregates. Journal of Physical Chemistry A, 2002, 106, 3524-3530.	2.5	14
46	When excitons and plasmons meet: Emerging function through synthesis and assembly. MRS Bulletin, 2015, 40, 768-776.	3.5	14
47	Probing dynamical symmetry breaking using quantum-entangled photons. Quantum Science and Technology, 2018, 3, 015003.	5.8	14
48	Excimer states and enhanced two-photon absorption in intramolecular charge-transfer crystals. Chemical Physics Letters, 1997, 269, 156-160.	2.6	13
49	On the existence of photoexcited breathers in conducting polymers. Physical Review B, 2004, 70, .	3.2	13
50	Photon entanglement entropy as a probe of many-body correlations and fluctuations. Journal of Chemical Physics, 2019, 150, 184106.	3.0	12
51	Complete Determination of Relaxation Parameters From Two-Dimensional Raman Spectroscopy. Laser Chemistry, 1999, 19, 109-116.	0.5	10
52	Probing exciton/exciton interactions with entangled photons: Theory. Journal of Chemical Physics, 2020, 152, 071101.	3.0	9
53	Cooperative Light Emission in the Presence of Strong Inhomogeneous Broadening. Physical Review Letters, 2019, 123, 123605.	7.8	8
54	Probing Interband Coulomb Interactions in Semiconductor Nanostructures with 2D Double-Quantum Coherence Spectroscopy. Journal of Physical Chemistry B, 2011, 115, 5372-5382.	2.6	7

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55	Quantum Symmetry Breaking of Exciton/Polaritons in a Metal-Nanorod Plasmonic Array. Journal of Physical Chemistry A, 2016, 120, 3109-3116.	2.5	7
56	Thermoelectric properties of semiconductor nanowire networks. Journal of Applied Physics, 2016, 119, 125107.	2.5	6
57	Modeling of diamond field emitter arrays for a compact source of high brightness electron beams. Journal of Applied Physics, 2019, 125, .	2.5	6
58	Femtosecond pumpâ€“probe spectroscopy of the dendrimeric nanostar. Journal of Luminescence, 2001, 94-95, 569-573.	3.1	5
59	Effect of Localized Surface-Plasmon Mode on Exciton Transport and Radiation Emission in Carbon Nanotubes. Journal of Physical Chemistry B, 2014, 118, 8070-8080.	2.6	5
60	Second-harmonic generation in nonlinear plasmonic lattices enhanced by quantum emitter gain medium. Journal of Chemical Physics, 2021, 154, 084703.	3.0	5
61	Three-pulse photon-echo spectroscopy as a probe of the photoexcited electronic state manifold in coupled electron-phonon systems. Physical Review B, 2004, 70, .	3.2	4
62	Nonequilibrium states of a plasmonic Dicke model with coherent and dissipative surface-plasmonâ€“quantum-emitter interactions. Physical Review Research, 2020, 2, .	3.6	3
63	Luminescence from interacting Frenkel excitons at high-level optical excitation. Physical Review B, 1998, 57, 3867-3873.	3.2	2
64	Dynamical variational approach to non-adiabatic electronic structure. Chemical Physics, 2008, 347, 25-38.	1.9	2
65	Theory of electron transport and emission from a semiconductor nanotip. Journal of Applied Physics, 2019, 125, 214301.	2.5	2
66	Strong Purcell enhancement at telecom wavelengths afforded by spinel Fe3O4 nanocrystals with size-tunable plasmonic properties. Nanoscale Horizons, 2021, , .	8.0	2
67	Low-temperature hopping dynamics with energy disorder: Renormalization group approach. Journal of Chemical Physics, 2013, 139, 084118.	3.0	1
68	Nonlinear two-dimensional IR spectroscopy of unfolding processes in ,Î²-peptides. Springer Series in Chemical Physics, 2001, , 507-509.	0.2	1
69	Stochastic exciton-scattering theory of optical line shapes: Renormalized many-body contributions. Journal of Chemical Physics, 2022, 157, .	3.0	1
70	Two-dimensional infrared femtosecond spectroscopy of cyclic pentapeptides. AIP Conference Proceedings, 2000, , .	0.4	0
71	Real time observation of non-linear coherent phonon dynamics in semiconducting single wall carbon nanotubes. , 2006, , .		0
72	Effect of periodic potential on exciton states in semiconductor carbon nanotubes. Chemical Physics, 2016, 481, 177-183.	1.9	0

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73	Probing Peptide and Protein Dynamics by Ultrafast Multidimensional Vibrational Spectroscopy. , 2000, , .		0
74	Two-Dimensional Coherent Infrared Spectroscopy of Vibrational Excitons in Polypeptides. , 2001, , .		0
75	Non-blinking "Giant" Nanocrystal Quantum Dots: Ideal Probes for Real-time Three-dimensional Tracking. , 2013, , .		0
76	Physics of Electron Emission and Beam Dynamics from a Single Diamond Field Emitter. , 2020, , .		0