

Norbert Scherer

List of Publications by Year in descending order

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115
papers

8,507
citations

66343

42
h-index

45317

90
g-index

118
all docs

118
docs citations

118
times ranked

9854
citing authors

#	ARTICLE	IF	CITATIONS
1	Single-molecule mechanics of mussel adhesion. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 12999-13003.	7.1	1,814
2	Fluorescence-detected wave packet interferometry: Time resolved molecular spectroscopy with sequences of femtosecond phase-locked pulses. Journal of Chemical Physics, 1991, 95, 1487-1511.	3.0	539
3	Nanometer-localized multiple single-molecule fluorescence microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 11298-11303.	7.1	309
4	Intracellular transport of insulin granules is a subordinated random walk. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 4911-4916.	7.1	296
5	Off-resonant transient birefringence in liquids. Journal of Chemical Physics, 1993, 99, 2410-2428.	3.0	248
6	Ultrafast solvent dynamics: Connection between time resolved fluorescence and optical Kerr measurements. Journal of Chemical Physics, 1992, 96, 5033-5038.	3.0	213
7	Scaling laws governing stochastic growth and division of single bacterial cells. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15912-15917.	7.1	195
8	Optical trapping and alignment of single gold nanorods by using plasmon resonances. Optics Letters, 2006, 31, 2075.	3.3	184
9	Real-time picosecond clocking of the collision complex in a bimolecular reaction: The birth of OH from H+CO ₂ . Journal of Chemical Physics, 1987, 87, 1451-1453.	3.0	176
10	Femtosecond wave packet and chemical reaction dynamics of iodine in solution: Tunable probe study of motion along the reaction coordinate. Journal of Chemical Physics, 1993, 99, 153-168.	3.0	164
11	Charge Transfer Across the Nanocrystalline-DNA Interface: Probing DNA Recognition. Nano Letters, 2004, 4, 1017-1023.	9.1	164
12	Evidence for a diffusion-controlled mechanism for fluorescence blinking of colloidal quantum dots. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 14249-14254.	7.1	158
13	Thermally-Induced Formation of Atomic Au Clusters and Conversion into Nanocubes. Journal of the American Chemical Society, 2004, 126, 9900-9901.	13.7	152
14	Propagation Lengths and Group Velocities of Plasmons in Chemically Synthesized Gold and Silver Nanowires. ACS Nano, 2012, 6, 472-482.	14.6	148
15	Correlating Second Harmonic Optical Responses of Single Ag Nanoparticles with Morphology. Journal of the American Chemical Society, 2005, 127, 12482-12483.	13.7	146
16	Photon echoes and related four-wave mixing spectroscopies using phase-locked pulses. Journal of Chemical Physics, 1992, 96, 5618-5629.	3.0	145
17	Electronic Relaxation Dynamics in Coupled Metal Nanoparticles. Journal of the American Chemical Society, 1997, 119, 6638-6647.	13.7	129
18	Single-molecule studies highlight conformational heterogeneity in the early folding steps of a large ribozyme. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 534-539.	7.1	117

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19	All-Optical Patterning of Au Nanoparticles on Surfaces Using Optical Traps. <i>Nano Letters</i> , 2010, 10, 4302-4308.	9.1	117
20	Distribution of directional change as a signature of complex dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 19689-19694.	7.1	105
21	Three-Dimensional Optical Trapping and Manipulation of Single Silver Nanowires. <i>Nano Letters</i> , 2012, 12, 5155-5161.	9.1	101
22	Guiding Spatial Arrangements of Silver Nanoparticles by Optical Binding Interactions in Shaped Light Fields. <i>ACS Nano</i> , 2013, 7, 1790-1802.	14.6	96
23	Generation of optical vector beams with a diffractive optical element interferometer. <i>Optics Letters</i> , 2005, 30, 2846.	3.3	81
24	Ultrafast Resonant Dynamics of Surface Plasmons in Gold Nanorods. <i>Journal of Physical Chemistry C</i> , 2007, 111, 116-123.	3.1	81
25	Nanoscale Electrical Conductivity and Surface Spectroscopic Studies of Indium-Tin Oxide. <i>Journal of Physical Chemistry B</i> , 2001, 105, 3282-3288.	2.6	80
26	Potential energy surfaces and reaction pathways for light-mediated self-organization of metal nanoparticle clusters. <i>Nature Communications</i> , 2014, 5, 3751.	12.8	80
27	Picosecond photofragment spectroscopy. II. The overtone initiated unimolecular reaction $\text{H}_2\text{O}_2(\nu_{\text{OH}}=5) \rightarrow 2\text{OH}$. <i>Journal of Chemical Physics</i> , 1987, 87, 97-114.	3.0	79
28	Fabrication of a Material Assembly of Silver Nanoparticles Using the Phase Gradients of Optical Tweezers. <i>Physical Review Letters</i> , 2015, 114, 143901.	7.8	76
29	Ultrafast Dephasing of Single Nanoparticles Studied by Two-Pulse Second-Order Interferometry. <i>Journal of Physical Chemistry B</i> , 2001, 105, 2135-2142.	2.6	75
30	Ultrafast Pump-Probe Studies of Excited-State Charge-Transfer Dynamics in Blue Copper Proteins. <i>Journal of Physical Chemistry A</i> , 1998, 102, 4350-4359.	2.5	73
31	Optical Vortex Induced Rotation of Silver Nanowires. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 2937-2942.	4.6	72
32	The solvent spectral density and vibrational multimode approach to optical dephasing: Two-pulse photon echo response. <i>Journal of Chemical Physics</i> , 1995, 103, 8346-8359.	3.0	66
33	SCIENCE EDUCATION: Enhanced: Educating Future Scientists. <i>Science</i> , 2003, 301, 1485-1485.	12.6	64
34	Plasmonic Interactions and Optical Forces between Au Bipyramidal Nanoparticle Dimers. <i>Journal of Physical Chemistry A</i> , 2009, 113, 4408-4415.	2.5	63
35	Excitation Dephasing, Product Formation, and Vibrational Coherence in an Intervalence Charge-Transfer Reaction. <i>Journal of the American Chemical Society</i> , 1995, 117, 12262-12272.	13.7	62
36	Wavelength-resolved stimulated photon echoes: Direct observation of ultrafast intramolecular vibrational contributions to electronic dephasing. <i>Journal of Chemical Physics</i> , 1999, 111, 792-795.	3.0	58

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37	Universality in Stochastic Exponential Growth. <i>Physical Review Letters</i> , 2014, 113, 028101.	7.8	57
38	Entanglement of two, three, or four plasmonically coupled quantum dots. <i>Physical Review B</i> , 2015, 92, .	3.2	54
39	Crossover from positive to negative optical torque in mesoscale optical matter. <i>Nature Communications</i> , 2018, 9, 4897.	12.8	50
40	Why Single-Beam Optical Tweezers Trap Gold Nanowires in Three Dimensions. <i>ACS Nano</i> , 2013, 7, 8794-8800.	14.6	49
41	Optical coherence and theoretical study of the excitation dynamics of a highly symmetric cyclophane-linked oligophenylenevinylene dimer. <i>Journal of Chemical Physics</i> , 2006, 124, 194904.	3.0	47
42	Driven optical matter: Dynamics of electrodynamically coupled nanoparticles in an optical ring vortex. <i>Physical Review E</i> , 2017, 95, 022604.	2.1	47
43	Controlling the Position and Orientation of Single Silver Nanowires on a Surface Using Structured Optical Fields. <i>ACS Nano</i> , 2012, 6, 8144-8155.	14.6	46
44	Excitation of Nonradiating Anapoles in Dielectric Nanospheres. <i>Physical Review Letters</i> , 2020, 124, 097402.	7.8	45
45	Single-molecule nonequilibrium periodic Mg ²⁺ -concentration jump experiments reveal details of the early folding pathways of a large RNA. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 6602-6607.	7.1	42
46	Dark Plasmon Modes in Symmetric Gold Nanoparticle Dimers Illuminated by Focused Cylindrical Vector Beams. <i>Journal of Physical Chemistry C</i> , 2018, 122, 27662-27672.	3.1	41
47	Optical Printing of Electrodynamically Coupled Metallic Nanoparticle Arrays. <i>Journal of Physical Chemistry C</i> , 2014, 118, 19315-19321.	3.1	40
48	Solvent intermolecular polarizability response in solvation. <i>Journal of Chemical Physics</i> , 2003, 118, 3917-3920.	3.0	38
49	Dissipative Self-Assembly of Anisotropic Nanoparticle Chains with Combined Electrodynamic and Electrostatic Interactions. <i>Advanced Materials</i> , 2018, 30, e1803238.	21.0	38
50	Efficient fluorescence labeling of a large RNA through oligonucleotide hybridization. <i>Rna</i> , 2005, 11, 234-239.	3.5	36
51	Stochastic scanning multiphoton multifocal microscopy. <i>Optics Express</i> , 2006, 14, 3406.	3.4	36
52	Controlling Plasmonic Wave Packets in Silver Nanowires. <i>Nano Letters</i> , 2010, 10, 3389-3394.	9.1	36
53	Plasmon-Driven Selective Deposition of Au Bipyramidal Nanoparticles. <i>Nano Letters</i> , 2011, 11, 4058-4066.	9.1	36
54	Biphasic growth dynamics control cell division in <i>Caulobacter crescentus</i> . <i>Nature Microbiology</i> , 2017, 2, 17116.	13.3	36

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55	Rotation and Negative Torque in Electrodynamically Bound Nanoparticle Dimers. <i>Nano Letters</i> , 2017, 17, 6548-6556.	9.1	34
56	Selective Induction of Optical Magnetism. <i>Nano Letters</i> , 2017, 17, 7196-7206.	9.1	34
57	Few-cycle mid-infrared pulse generation, characterization, and coherent propagation in optically dense media. <i>Review of Scientific Instruments</i> , 2002, 73, 2227-2236.	1.3	33
58	Single-molecule detection of structural changes during Per-Arnt-Sim (PAS) domain activation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 11561-11566.	7.1	33
59	Spectral tuning in photoactive yellow protein by modulation of the shape of the excited state energy surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 5821-5826.	7.1	33
60	Enhancing Nanoparticle Electrodynamics with Gold Nanoplate Mirrors. <i>Nano Letters</i> , 2014, 14, 2436-2442.	9.1	32
61	Vibronic effects in the spectroscopy and dynamics of <i>C</i> -phycoerythrin. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2012, 45, 154016.	1.5	31
62	Hierarchical Assembly of Plasmonic Nanoparticle Heterodimer Arrays with Tunable Sub-5 nm Nanogaps. <i>Nano Letters</i> , 2019, 19, 4314-4320.	9.1	30
63	Field-resolved measurement of reaction-induced spectral densities by polarizability response spectroscopy. <i>Journal of Chemical Physics</i> , 2007, 127, 184505.	3.0	29
64	Optical matter machines: angular momentum conversion by collective modes in optically bound nanoparticle arrays. <i>Optica</i> , 2020, 7, 1341.	9.3	28
65	Precise localization and correlation of single nanoparticle optical responses and morphology. <i>Applied Physics Letters</i> , 2006, 88, 263111.	3.3	27
66	Axis-dependent anisotropy in protein unfolding from integrated nonequilibrium single-molecule experiments, analysis, and simulation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 20799-20804.	7.1	27
67	Ultrafast Dynamics of Polarons in Conductive Polyaniline: Comparison of Primary and Secondary Doped Forms. <i>Journal of Physical Chemistry B</i> , 2008, 112, 15576-15587.	2.6	26
68	Reactive optical matter: light-induced motility in electrodynamically asymmetric nanoscale scatterers. <i>Light: Science and Applications</i> , 2018, 7, 105.	16.6	26
69	Controlling the Dynamics and Optical Binding of Nanoparticle Homodimers with Transverse Phase Gradients. <i>Nano Letters</i> , 2019, 19, 897-903.	9.1	25
70	Mechanical feedback promotes bacterial adaptation to antibiotics. <i>Nature Physics</i> , 2021, 17, 403-409.	16.7	25
71	Femtosecond transient absorption dynamics of close-packed gold nanocrystal monolayer arrays. <i>Chemical Physics Letters</i> , 2004, 386, 390-395.	2.6	24
72	Using the Bias from Flow to Elucidate Single DNA Repair Protein Sliding and Interactions with DNA. <i>Biophysical Journal</i> , 2009, 96, 1911-1917.	0.5	24

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73	Shape dynamics of growing cell walls. <i>Soft Matter</i> , 2016, 12, 3442-3450.	2.7	24
74	Hierarchical Photonic Synthesis of Hybrid Nanoparticle Assemblies. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 2630-2636.	4.6	23
75	Polarizability response spectroscopy: Formalism and simulation of ultrafast dynamics in solvation. <i>Chemical Physics</i> , 2007, 341, 344-356.	1.9	21
76	Single-gene tuning of <i>Caulobacter</i> cell cycle period and noise, swarming motility, and surface adhesion. <i>Molecular Systems Biology</i> , 2010, 6, 445.	7.2	21
77	Dynamics of the Optically Directed Assembly and Disassembly of Gold Nanoplatelet Arrays. <i>Nano Letters</i> , 2018, 18, 3391-3399.	9.1	20
78	Finite-difference time-domain simulation of ultrashort pulse propagation incorporating quantum-mechanical response functions. <i>Optics Letters</i> , 2003, 28, 573.	3.3	19
79	Two-dimensional measurements of the solvent structural relaxation dynamics in dipolar solvation. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 8116.	2.8	19
80	Imaging scanning tunneling microscope-induced electroluminescence in plasmonic corrals. <i>Applied Physics Letters</i> , 2004, 84, 1257-1259.	3.3	18
81	Solvent structural relaxation dynamics in dipolar solvation studied by resonant pump polarizability response spectroscopy. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 214-223.	2.8	18
82	Three-dimensional optical trapping and orientation of microparticles for coherent X-ray diffraction imaging. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 4018-4024.	7.1	18
83	Intergenerational continuity of cell shape dynamics in <i>Caulobacter crescentus</i> . <i>Scientific Reports</i> , 2015, 5, 9155.	3.3	17
84	Nanoscale Resolution 3D Snapshot Particle Tracking by Multifocal Microscopy. <i>Nano Letters</i> , 2019, 19, 6781-6787.	9.1	17
85	Snapshot multifocal light field microscopy. <i>Optics Express</i> , 2020, 28, 12108.	3.4	17
86	Coherent Electronic and Nuclear Dynamics for Charge Transfer in 1-Ethyl-4-(carbomethoxy)pyridinium iodide. <i>Journal of Physical Chemistry B</i> , 2006, 110, 19771-19783.	2.6	15
87	A Large Collapsed-state RNA Can Exhibit Simple Exponential Single-molecule Dynamics. <i>Journal of Molecular Biology</i> , 2008, 378, 943-953.	4.2	15
88	Single-pixel interior filling function approach for detecting and correcting errors in particle tracking. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 221-226.	7.1	14
89	Observation of coherent multiple scattering of surface plasmon polaritons on Ag and Au surfaces. <i>Chemical Physics Letters</i> , 1996, 262, 573-582.	2.6	13
90	The Pure Rotational Spectrum of Solvated HCl: Solute-Bath Interaction Strength and Dynamics. <i>Journal of Physical Chemistry A</i> , 1999, 103, 10054-10064.	2.5	13

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91	Ultrafast interferometric measurements of plasmonic transport in photonic crystals. <i>Optics Letters</i> , 2002, 27, 857.	3.3	13
92	Structural responses of quasi-two-dimensional colloidal fluids to excitations elicited by nonequilibrium perturbations. <i>Physical Review E</i> , 2012, 86, 031403.	2.1	13
93	Scattered Light Interference from a Single Metal Nanoparticle and Its Mirror Image. <i>Journal of Physical Chemistry B</i> , 2005, 109, 11858-11861.	2.6	12
94	Ultrafast Dephasing of Photoexcited Polarons in Primary Doped Polyaniline. <i>Journal of Physical Chemistry B</i> , 2002, 106, 12866-12873.	2.6	11
95	Thermally-Driven Nanoparticle Array Growth from Atomic Au Precursor Solutions. <i>Journal of Physical Chemistry C</i> , 2007, 111, 17993-17996.	3.1	11
96	Analysis and correction of errors in nanoscale particle tracking using the Single-pixel interior filling function (SPIFF) algorithm. <i>Scientific Reports</i> , 2017, 7, 16553.	3.3	11
97	Direct Visualization of Barrier Crossing Dynamics in a Driven Optical Matter System. <i>ACS Nano</i> , 2018, 12, 5168-5175.	14.6	11
98	Field-Resolved Coherent Raman Spectroscopy of High Frequency Vibrational Resonances. <i>Journal of Physical Chemistry A</i> , 2006, 110, 10925-10928.	2.5	10
99	Models of Single-Molecule Experiments with Periodic Perturbations Reveal Hidden Dynamics in RNA Folding. <i>Journal of Physical Chemistry B</i> , 2009, 113, 7579-7590.	2.6	10
100	Self-Organizing Arrays of Size Scalable Nanoparticle Rings. <i>ACS Nano</i> , 2016, 10, 8947-8955.	14.6	10
101	Phase Resetting Reveals Network Dynamics Underlying a Bacterial Cell Cycle. <i>PLoS Computational Biology</i> , 2012, 8, e1002778.	3.2	9
102	Pointillist microscopy. <i>Nature Nanotechnology</i> , 2006, 1, 19-20.	31.5	6
103	Mechanism for photon emission from Au nano-hemispheres induced by scanning tunneling microscopy. <i>Applied Physics Letters</i> , 1999, 74, 3966-3968.	3.3	5
104	Assessing the dephasing dynamics of water from linear field-resolved pulse propagation experiments and simulations in highly absorbing solutions. <i>Journal of Chemical Physics</i> , 2008, 129, 224502.	3.0	5
105	New Insights into Response Functions of Liquids by Electric Field-Resolved Polarization Emission Time Measurements. <i>Journal of Physical Chemistry B</i> , 2011, 115, 5617-5624.	2.6	4
106	Designing "Metamolecules" for Photonic Function: Reduced Backscattering. <i>Physica Status Solidi (B): Basic Research</i> , 2020, 257, 2000169.	1.5	4
107	Correlative imaging across microscopy platforms using the fast and accurate relocation of microscopic experimental regions (FARMER) method. <i>Review of Scientific Instruments</i> , 2017, 88, 053702.	1.3	4
108	Particle tracking by repetitive phase-shift interferometric super resolution microscopy. <i>Optics Letters</i> , 2018, 43, 2819.	3.3	3

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109	Data-driven reaction coordinate discovery in overdamped and non-conservative systems: application to optical matter structural isomerization. <i>Nature Communications</i> , 2021, 12, 2548.	12.8	3
110	Understanding and design of non-conservative optical matter systems using Markov state models. <i>Molecular Systems Design and Engineering</i> , 2022, 7, 1228-1238.	3.4	3
111	Local-heterogeneous responses and transient dynamics of cage breaking and formation in colloidal fluids. <i>Journal of Chemical Physics</i> , 2014, 141, 104907.	3.0	2
112	Facile Measurement of the Rotation of a Single Optically Trapped Nanoparticle Using the Diagonal Ratio of a Quadrant Photodiode. <i>ACS Photonics</i> , 2021, 8, 3162-3172.	6.6	2
113	Gain-switched, all-acousto-optic, femtosecond pulse amplifier. <i>Review of Scientific Instruments</i> , 2003, 74, 4961-4963.	1.3	0
114	Vector beam generation from a passively phase stable diffractive optical element interferometer. , 2006, , .		0
115	Identifying and correcting pixel locking errors with the SPIFF algorithm. , 2018, , .		0