

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	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
2	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
3	Mechanical feedback promotes bacterial adaptation to antibiotics. <i>Nature Physics</i> , 2021, 17, 403-409.	16.7	25
4	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
5	Designing "Metamolecules" for Photonic Function: Reduced Backscattering. <i>Physica Status Solidi (B): Basic Research</i> , 2020, 257, 2000169.	1.5	4
6	Excitation of Nonradiating Anapoles in Dielectric Nanospheres. <i>Physical Review Letters</i> , 2020, 124, 097402.	7.8	45
7	Snapshot multifocal light field microscopy. <i>Optics Express</i> , 2020, 28, 12108.	3.4	17
8	Optical matter machines: angular momentum conversion by collective modes in optically bound nanoparticle arrays. <i>Optica</i> , 2020, 7, 1341.	9.3	28
9	Nanoscale Resolution 3D Snapshot Particle Tracking by Multifocal Microscopy. <i>Nano Letters</i> , 2019, 19, 6781-6787.	9.1	17
10	Hierarchical Assembly of Plasmonic Nanoparticle Heterodimer Arrays with Tunable Sub-5 nm Nanogaps. <i>Nano Letters</i> , 2019, 19, 4314-4320.	9.1	30
11	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
12	Controlling the Dynamics and Optical Binding of Nanoparticle Homodimers with Transverse Phase Gradients. <i>Nano Letters</i> , 2019, 19, 897-903.	9.1	25
13	Direct Visualization of Barrier Crossing Dynamics in a Driven Optical Matter System. <i>ACS Nano</i> , 2018, 12, 5168-5175.	14.6	11
14	Dynamics of the Optically Directed Assembly and Disassembly of Gold Nanoplatelet Arrays. <i>Nano Letters</i> , 2018, 18, 3391-3399.	9.1	20
15	Crossover from positive to negative optical torque in mesoscale optical matter. <i>Nature Communications</i> , 2018, 9, 4897.	12.8	50
16	Reactive optical matter: light-induced motility in electrodynamically asymmetric nanoscale scatterers. <i>Light: Science and Applications</i> , 2018, 7, 105.	16.6	26
17	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
18	Dissipative Self-Assembly of Anisotropic Nanoparticle Chains with Combined Electrodynamic and Electrostatic Interactions. <i>Advanced Materials</i> , 2018, 30, e1803238.	21.0	38

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19	Particle tracking by repetitive phase-shift interferometric super resolution microscopy. <i>Optics Letters</i> , 2018, 43, 2819.	3.3	3
20	Identifying and correcting pixel locking errors with the SPIFF algorithm. , 2018, , .		0
21	Driven optical matter: Dynamics of electrodynamically coupled nanoparticles in an optical ring vortex. <i>Physical Review E</i> , 2017, 95, 022604.	2.1	47
22	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
23	Rotation and Negative Torque in Electrodynamically Bound Nanoparticle Dimers. <i>Nano Letters</i> , 2017, 17, 6548-6556.	9.1	34
24	Biphasic growth dynamics control cell division in <i>Caulobacter crescentus</i> . <i>Nature Microbiology</i> , 2017, 2, 17116.	13.3	36
25	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
26	Selective Induction of Optical Magnetism. <i>Nano Letters</i> , 2017, 17, 7196-7206.	9.1	34
27	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
28	Self-Organizing Arrays of Size Scalable Nanoparticle Rings. <i>ACS Nano</i> , 2016, 10, 8947-8955.	14.6	10
29	Shape dynamics of growing cell walls. <i>Soft Matter</i> , 2016, 12, 3442-3450.	2.7	24
30	Entanglement of two, three, or four plasmonically coupled quantum dots. <i>Physical Review B</i> , 2015, 92, .	3.2	54
31	Intergenerational continuity of cell shape dynamics in <i>Caulobacter crescentus</i> . <i>Scientific Reports</i> , 2015, 5, 9155.	3.3	17
32	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
33	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
34	Scaling laws governing stochastic growth and division of single bacterial cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 15912-15917.	7.1	195
35	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
36	Enhancing Nanoparticle Electrodynamics with Gold Nanoplate Mirrors. <i>Nano Letters</i> , 2014, 14, 2436-2442.	9.1	32

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37	Universality in Stochastic Exponential Growth. <i>Physical Review Letters</i> , 2014, 113, 028101.	7.8	57
38	Optical Printing of Electrostatically Coupled Metallic Nanoparticle Arrays. <i>Journal of Physical Chemistry C</i> , 2014, 118, 19315-19321.	3.1	40
39	Hierarchical Photonic Synthesis of Hybrid Nanoparticle Assemblies. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 2630-2636.	4.6	23
40	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
41	Why Single-Beam Optical Tweezers Trap Gold Nanowires in Three Dimensions. <i>ACS Nano</i> , 2013, 7, 8794-8800.	14.6	49
42	Optical Vortex Induced Rotation of Silver Nanowires. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 2937-2942.	4.6	72
43	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
44	Intracellular transport of insulin granules is a subordinated random walk. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 4911-4916.	7.1	296
45	Vibronic effects in the spectroscopy and dynamics of <i>C</i> -phycocyanin. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2012, 45, 154016.	1.5	31
46	Phase Resetting Reveals Network Dynamics Underlying a Bacterial Cell Cycle. <i>PLoS Computational Biology</i> , 2012, 8, e1002778.	3.2	9
47	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
48	Two-dimensional measurements of the solvent structural relaxation dynamics in dipolar solvation. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 8116.	2.8	19
49	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
50	Three-Dimensional Optical Trapping and Manipulation of Single Silver Nanowires. <i>Nano Letters</i> , 2012, 12, 5155-5161.	9.1	101
51	Propagation Lengths and Group Velocities of Plasmons in Chemically Synthesized Gold and Silver Nanowires. <i>ACS Nano</i> , 2012, 6, 472-482.	14.6	148
52	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
53	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
54	Plasmon-Driven Selective Deposition of Au Bipyramidal Nanoparticles. <i>Nano Letters</i> , 2011, 11, 4058-4066.	9.1	36

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55	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
56	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
57	Controlling Plasmonic Wave Packets in Silver Nanowires. <i>Nano Letters</i> , 2010, 10, 3389-3394.	9.1	36
58	All-Optical Patterning of Au Nanoparticles on Surfaces Using Optical Traps. <i>Nano Letters</i> , 2010, 10, 4302-4308.	9.1	117
59	Plasmonic Interactions and Optical Forces between Au Bipyramidal Nanoparticle Dimers. <i>Journal of Physical Chemistry A</i> , 2009, 113, 4408-4415.	2.5	63
60	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
61	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
62	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
63	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
64	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
65	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
66	Evidence for a diffusion-controlled mechanism for fluorescence blinking of colloidal quantum dots. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 14249-14254.	7.1	158
67	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
68	Field-resolved measurement of reaction-induced spectral densities by polarizability response spectroscopy. <i>Journal of Chemical Physics</i> , 2007, 127, 184505.	3.0	29
69	Thermally-Driven Nanoparticle Array Growth from Atomic Au Precursor Solutions. <i>Journal of Physical Chemistry C</i> , 2007, 111, 17993-17996.	3.1	11
70	Ultrafast Resonant Dynamics of Surface Plasmons in Gold Nanorods. <i>Journal of Physical Chemistry C</i> , 2007, 111, 116-123.	3.1	81
71	Polarizability response spectroscopy: Formalism and simulation of ultrafast dynamics in solvation. <i>Chemical Physics</i> , 2007, 341, 344-356.	1.9	21
72	Single-molecule mechanics of mussel adhesion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 12999-13003.	7.1	1,814

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73	Field-Resolved Coherent Raman Spectroscopy of High Frequency Vibrational Resonances. Journal of Physical Chemistry A, 2006, 110, 10925-10928.	2.5	10
74	Coherent Electronic and Nuclear Dynamics for Charge Transfer in 1-Ethyl-4-(carbomethoxy)pyridinium iodide. Journal of Physical Chemistry B, 2006, 110, 19771-19783.	2.6	15
75	Optical trapping and alignment of single gold nanorods by using plasmon resonances. Optics Letters, 2006, 31, 2075.	3.3	184
76	Stochastic scanning multiphoton multifocal microscopy. Optics Express, 2006, 14, 3406.	3.4	36
77	Pointillist microscopy. Nature Nanotechnology, 2006, 1, 19-20.	31.5	6
78	Single-molecule detection of structural changes during Per-Arnt-Sim (PAS) domain activation. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11561-11566.	7.1	33
79	Precise localization and correlation of single nanoparticle optical responses and morphology. Applied Physics Letters, 2006, 88, 263111.	3.3	27
80	Optical coherence and theoretical study of the excitation dynamics of a highly symmetric cyclophane-linked oligophenylenevinylene dimer. Journal of Chemical Physics, 2006, 124, 194904.	3.0	47
81	Vector beam generation from a passively phase stable diffractive optical element interferometer. , 2006, , .		0
82	Correlating Second Harmonic Optical Responses of Single Ag Nanoparticles with Morphology. Journal of the American Chemical Society, 2005, 127, 12482-12483.	13.7	146
83	Efficient fluorescence labeling of a large RNA through oligonucleotide hybridization. Rna, 2005, 11, 234-239.	3.5	36
84	Scattered Light Interference from a Single Metal Nanoparticle and Its Mirror Image. Journal of Physical Chemistry B, 2005, 109, 11858-11861.	2.6	12
85	Generation of optical vector beams with a diffractive optical element interferometer. Optics Letters, 2005, 30, 2846.	3.3	81
86	Imaging scanning tunneling microscope-induced electroluminescence in plasmonic corrals. Applied Physics Letters, 2004, 84, 1257-1259.	3.3	18
87	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
88	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
89	Femtosecond transient absorption dynamics of close-packed gold nanocrystal monolayer arrays. Chemical Physics Letters, 2004, 386, 390-395.	2.6	24
90	Charge Transfer Across the Nanocrystalline-DNA Interface: Probing DNA Recognition. Nano Letters, 2004, 4, 1017-1023.	9.1	164

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91	Thermally-Induced Formation of Atomic Au Clusters and Conversion into Nanocubes. <i>Journal of the American Chemical Society</i> , 2004, 126, 9900-9901.	13.7	152
92	SCIENCE EDUCATION: Enhanced: Educating Future Scientists. <i>Science</i> , 2003, 301, 1485-1485.	12.6	64
93	Finite-difference time-domain simulation of ultrashort pulse propagation incorporating quantum-mechanical response functions. <i>Optics Letters</i> , 2003, 28, 573.	3.3	19
94	Gain-switched, all-acousto-optic, femtosecond pulse amplifier. <i>Review of Scientific Instruments</i> , 2003, 74, 4961-4963.	1.3	0
95	Solvent intermolecular polarizability response in solvation. <i>Journal of Chemical Physics</i> , 2003, 118, 3917-3920.	3.0	38
96	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
97	Ultrafast Dephasing of Photoexcited Polarons in Primary Doped Polyaniline. <i>Journal of Physical Chemistry B</i> , 2002, 106, 12866-12873.	2.6	11
98	Ultrafast interferometric measurements of plasmonic transport in photonic crystals. <i>Optics Letters</i> , 2002, 27, 857.	3.3	13
99	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
100	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
101	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
102	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
103	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
104	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
105	Electronic Relaxation Dynamics in Coupled Metal Nanoparticles. <i>Journal of the American Chemical Society</i> , 1997, 119, 6638-6647.	13.7	129
106	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
107	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
108	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

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109	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
110	Off-resonant transient birefringence in liquids. Journal of Chemical Physics, 1993, 99, 2410-2428.	3.0	248
111	Ultrafast solvent dynamics: Connection between time resolved fluorescence and optical Kerr measurements. Journal of Chemical Physics, 1992, 96, 5033-5038.	3.0	213
112	Photon echoes and related four-wave mixing spectroscopies using phase-locked pulses. Journal of Chemical Physics, 1992, 96, 5618-5629.	3.0	145
113	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
114	Picosecond photofragment spectroscopy. II. The overtone initiated unimolecular reaction $\text{H}_2\text{O}_2(\nu_{\text{OH}}=5) \rightarrow 2\text{OH}$. Journal of Chemical Physics, 1987, 87, 97-114.	3.0	79
115	Real-time picosecond clocking of the collision complex in a bimolecular reaction: The birth of OH from $\text{H}+\text{CO}_2$. Journal of Chemical Physics, 1987, 87, 1451-1453.	3.0	176