

# Lukas Novotny

## List of Publications by Year in descending order

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138  
papers

19,396  
citations

36303

51  
h-index

18647

119  
g-index

141  
all docs

141  
docs citations

141  
times ranked

15979  
citing authors

#	ARTICLE	IF	CITATIONS
1	Enhancement and Quenching of Single-Molecule Fluorescence. <i>Physical Review Letters</i> , 2006, 96, 113002.	7.8	2,632
2	Antennas for light. <i>Nature Photonics</i> , 2011, 5, 83-90.	31.4	2,345
3	Optical Antennas. <i>Advances in Optics and Photonics</i> , 2009, 1, 438.	25.5	1,131
4	Theory of Nanometric Optical Tweezers. <i>Physical Review Letters</i> , 1997, 79, 645-648.	7.8	945
5	Effective Wavelength Scaling for Optical Antennas. <i>Physical Review Letters</i> , 2007, 98, 266802.	7.8	941
6	High-Resolution Near-Field Raman Microscopy of Single-Walled Carbon Nanotubes. <i>Physical Review Letters</i> , 2003, 90, 095503.	7.8	787
7	Longitudinal Field Modes Probed by Single Molecules. <i>Physical Review Letters</i> , 2001, 86, 5251-5254.	7.8	723
8	Near-Field Second-Harmonic Generation Induced by Local Field Enhancement. <i>Physical Review Letters</i> , 2003, 90, 013903.	7.8	549
9	Spectral dependence of single molecule fluorescence enhancement. <i>Optics Express</i> , 2007, 15, 14266.	3.4	495
10	Subkelvin Parametric Feedback Cooling of a Laser-Trapped Nanoparticle. <i>Physical Review Letters</i> , 2012, 109, 103603.	7.8	461
11	NEAR-FIELD OPTICAL MICROSCOPY AND SPECTROSCOPY WITH POINTED PROBES. <i>Annual Review of Physical Chemistry</i> , 2006, 57, 303-331.	10.8	371
12	Confined linear carbon chains as a route to bulk $\text{C}_{60}$ . <i>Nature Materials</i> , 2016, 15, 634-639.	27.5	341
13	Direct Measurement of Photon Recoil from a Levitated Nanoparticle. <i>Physical Review Letters</i> , 2016, 116, 243601.	7.8	239
14	Thermal nonlinearities in a nanomechanical oscillator. <i>Nature Physics</i> , 2013, 9, 806-810.	16.7	230
15	Waveguide-integrated van der Waals heterostructure photodetector at telecom wavelengths with high speed and high responsivity. <i>Nature Nanotechnology</i> , 2020, 15, 118-124.	31.5	208
16	Electrical Excitation of Surface Plasmons. <i>Physical Review Letters</i> , 2011, 106, 226802.	7.8	200
17	GHz Rotation of an Optically Trapped Nanoparticle in Vacuum. <i>Physical Review Letters</i> , 2018, 121, 033602.	7.8	198
18	Quantum control of a nanoparticle optically levitated in cryogenic free space. <i>Nature</i> , 2021, 595, 378-382.	27.8	163

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19	Dynamic relaxation of a levitated nanoparticle from a non-equilibrium steady state. Nature Nanotechnology, 2014, 9, 358-364.	31.5	151
20	Levitodynamics: Levitation and control of microscopic objects in vacuum. Science, 2021, 374, eabg3027.	12.6	142
21	Antenna-coupled photon emission from hexagonal boron nitride tunnel junctions. Nature Nanotechnology, 2015, 10, 1058-1063.	31.5	141
22	Graphene transfer with reduced residue. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 1455-1458.	2.1	140
23	Characterization of nanoplasmonic structures by locally excited photoluminescence. Applied Physics Letters, 2003, 83, 5041-5043.	3.3	137
24	Highly Reproducible Near-Field Optical Imaging with Sub-20-nm Resolution Based on Template-Stripped Gold Pyramids. ACS Nano, 2012, 6, 9168-9174.	14.6	130
25	Excitation of Magnetic Dipole Transitions at Optical Frequencies. Physical Review Letters, 2015, 114, 163903.	7.8	130
26	Nonlinear plasmonics with gold nanoparticle antennas. Journal of Optics, 2009, 11, 114030.	1.5	128
27	Tip-enhanced Raman spectroscopy of carbon nanotubes. Journal of Raman Spectroscopy, 2009, 40, 1420-1426.	2.5	122
28	Cold Damping of an Optically Levitated Nanoparticle to Microkelvin Temperatures. Physical Review Letters, 2019, 122, 223601.	7.8	109
29	Minimizing residues and strain in 2D materials transferred from PDMS. Nanotechnology, 2018, 29, 265203.	2.6	108
30	Motional Sideband Asymmetry of a Nanoparticle Optically Levitated in Free Space. Physical Review Letters, 2020, 124, 013603.	7.8	104
31	Direct measurement of Kramers turnover with a levitated nanoparticle. Nature Nanotechnology, 2017, 12, 1130-1133.	31.5	102
32	Cavity-Based 3D Cooling of a Levitated Nanoparticle via Coherent Scattering. Physical Review Letters, 2019, 122, 123601.	7.8	99
33	Sensing Static Forces with Free-Falling Nanoparticles. Physical Review Letters, 2018, 121, 063602.	7.8	97
34	Chapter 5 The history of near-field optics. Progress in Optics, 2007, , 137-184.	0.6	95
35	Color Rendering Plasmonic Aluminum Substrates with Angular Symmetry Breaking. ACS Nano, 2015, 9, 12383-12391.	14.6	92
36	Self-Similar Gold-Nanoparticle Antennas for a Cascaded Enhancement of the Optical Field. Physical Review Letters, 2012, 109, 017402.	7.8	84

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37	Optically levitated nanoparticle as a model system for stochastic bistable dynamics. Nature Communications, 2017, 8, 15141.	12.8	84
38	Fast MoTe <sub>2</sub> Waveguide Photodetector with High Sensitivity at Telecommunication Wavelengths. ACS Photonics, 2018, 5, 1846-1852.	6.6	83
39	Focusing of surface phonon polaritons. Applied Physics Letters, 2008, 92, .	3.3	80
40	Near-field scattering of longitudinal fields. Applied Physics Letters, 2003, 82, 4596-4598.	3.3	76
41	From near-field optics to optical antennas. Physics Today, 2011, 64, 47-52.	0.3	71
42	Controlling the net charge on a nanoparticle optically levitated in vacuum. Physical Review A, 2017, 95, .	2.5	69
43	Optical antennas tuned to pitch. Nature, 2008, 455, 887-887.	27.8	66
44	Spatial Coherence in Near-Field Raman Scattering. Physical Review Letters, 2014, 113, 186101.	7.8	63
45	Light from van der Waals quantum tunneling devices. Nature Communications, 2019, 10, 292.	12.8	63
46	One-Dimensional Edge Contacts to a Monolayer Semiconductor. Nano Letters, 2019, 19, 6914-6923.	9.1	61
47	Carbon Nanotube Chirality Determines Properties of Encapsulated Linear Carbon Chain. Nano Letters, 2018, 18, 5426-5431.	9.1	60
48	Optical antennas driven by quantum tunneling: a key issues review. Reports on Progress in Physics, 2019, 82, 112401.	20.1	56
49	Calibration and energy measurement of optically levitated nanoparticle sensors. Review of Scientific Instruments, 2018, 89, 033111.	1.3	54
50	Nonlinear Mode Coupling and Synchronization of a Vacuum-Trapped Nanoparticle. Physical Review Letters, 2014, 112, 103603.	7.8	53
51	Light at the End of the Tunnel. ACS Photonics, 2018, 5, 4195-4202.	6.6	53
52	Nanoscale spectroscopy with optical antennas. Chemical Science, 2011, 2, 136-140.	7.4	52
53	Mechanism of near-field Raman enhancement in two-dimensional systems. Physical Review B, 2012, 85, .	3.2	52
54	Cooling and manipulation of a levitated nanoparticle with an optical fiber trap. Applied Physics Letters, 2015, 107, .	3.3	51

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55	Controllable optical negative refraction and phase conjugation in graphite thin films. <i>Nature Physics</i> , 2013, 9, 423-425.	16.7	50
56	Measuring the internal temperature of a levitated nanoparticle in high vacuum. <i>Physical Review A</i> , 2018, 97, .	2.5	49
57	Transition Metal Dichalcogenide Resonators for Second Harmonic Signal Enhancement. <i>ACS Photonics</i> , 2020, 7, 2482-2488.	6.6	48
58	Optical-Phonon Resonances with Saddle-Point Excitons in Twisted-Bilayer Graphene. <i>Nano Letters</i> , 2014, 14, 5687-5692.	9.1	45
59	Polyne electronic and vibrational properties under environmental interactions. <i>Physical Review B</i> , 2016, 94, .	3.2	45
60	Theory for cavity cooling of levitated nanoparticles via coherent scattering: Master equation approach. <i>Physical Review A</i> , 2019, 100, .	2.5	44
61	The classical Bloch equations. <i>American Journal of Physics</i> , 2014, 82, 947-954.	0.7	42
62	Electron Transport through Metal/MoS <sub>2</sub> Interfaces: Edge- or Area-Dependent Process?. <i>Nano Letters</i> , 2019, 19, 3641-3647.	9.1	42
63	Enhanced reflectivity contrast in confocal solid immersion lens microscopy. <i>Applied Physics Letters</i> , 2000, 77, 3459-3461.	3.3	40
64	Direct On-Chip Optical Plasmon Detection with an Atomically Thin Semiconductor. <i>Nano Letters</i> , 2015, 15, 5477-5481.	9.1	40
65	Plasmon-Enhanced Photoemission from a Single Y <sub>3</sub> N@C <sub>80</sub> Fullerene. <i>Journal of Physical Chemistry C</i> , 2010, 114, 7444-7447.	3.1	38
66	Cooling Mechanical Oscillators by Coherent Control. <i>Physical Review Letters</i> , 2016, 117, 163601.	7.8	37
67	Van der Waals versus optical interaction between metal nanoparticles. <i>Optics Letters</i> , 2008, 33, 1029.	3.3	36
68	Stokes-anti-Stokes correlations in diamond. <i>Optics Letters</i> , 2015, 40, 2393.	3.3	36
69	Multispectral Imaging with Tunable Plasmonic Filters. <i>ACS Photonics</i> , 2017, 4, 236-241.	6.6	36
70	Probing exciton propagation and quenching in carbon nanotubes with near-field optical microscopy. <i>Physica Status Solidi (B): Basic Research</i> , 2009, 246, 2683-2688.	1.5	32
71	Optimal position detection of a dipolar scatterer in a focused field. <i>Physical Review A</i> , 2019, 100, .	2.5	32
72	Sub-Kelvin Feedback Cooling and Heating Dynamics of an Optically Levitated Librator. <i>Physical Review Letters</i> , 2021, 127, 123605.	7.8	32

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73	Theory of Spatial Coherence in Near-Field Raman Scattering. <i>Physical Review X</i> , 2014, 4, .	8.9	31
74	Individual Template-Stripped Conductive Gold Pyramids for Tip-Enhanced Dielectrophoresis. <i>ACS Photonics</i> , 2014, 1, 464-470.	6.6	30
75	Optical levitation and feedback cooling of a nanoparticle at subwavelength distances from a membrane. <i>Physical Review A</i> , 2018, 98, .	2.5	30
76	Raman Scattering Cross Section of Confined Carbyne. <i>Nano Letters</i> , 2020, 20, 6750-6755.	9.1	30
77	Optical Detection of Single Nanoparticles and Viruses. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2006, 12, 1292-1300.	2.9	29
78	Resolved-Sideband Cooling of a Levitated Nanoparticle in the Presence of Laser Phase Noise. <i>Physical Review Letters</i> , 2019, 123, 153601.	7.8	29
79	Temporal Quantum Correlations in Inelastic Light Scattering from Water. <i>Physical Review Letters</i> , 2016, 117, 243603.	7.8	28
80	Tip-enhanced optical spectroscopy for surface analysis in biosciences. <i>Surface and Interface Analysis</i> , 2006, 38, 1472-1480.	1.8	26
81	Escape dynamics of active particles in multistable potentials. <i>Nature Communications</i> , 2021, 12, 2446.	12.8	26
82	Coupling Interlayer Excitons to Whispering Gallery Modes in van der Waals Heterostructures. <i>Nano Letters</i> , 2020, 20, 6155-6161.	9.1	25
83	Beam Steering with a Nonlinear Optical Phased Array Antenna. <i>Nano Letters</i> , 2019, 19, 6097-6103.	9.1	24
84	Optically levitated rotor at its thermal limit of frequency stability. <i>Physical Review A</i> , 2020, 102, .	2.5	24
85	On the concept of imaging nanoscale vector fields. <i>Nature Photonics</i> , 2007, 1, 242-242.	31.4	23
86	Raman resonance profile of an individual confined long linear carbon chain. <i>Carbon</i> , 2018, 139, 581-585.	10.3	22
87	Antenna-Coupled Tunnel Junctions. <i>Springer Series in Solid-state Sciences</i> , 2017, , 211-236.	0.3	21
88	Experimental study of nanoparticle detection by optical gradient forces. <i>Review of Scientific Instruments</i> , 2003, 74, 5231-5235.	1.3	20
89	First-principles simulations of 2-D semiconductor devices: Mobility, I-V characteristics, and contact resistance. , 2016, , .		20
90	Defect-Free Carbon Nanotube Coils. <i>Nano Letters</i> , 2016, 16, 2152-2158.	9.1	20

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91	Anti-Stokes Raman Scattering of Single Carbyne Chains. ACS Nano, 2021, 15, 12249-12255.	14.6	20
92	Resonant Light Emission from Graphene/Hexagonal Boron Nitride/Graphene Tunnel Junctions. Nano Letters, 2021, 21, 8332-8339.	9.1	20
93	Exciton transfer and propagation in carbon nanotubes studied by near-field optical microscopy. Physica Status Solidi (B): Basic Research, 2008, 245, 2243-2246.	1.5	19
94	Coherence measurements with the two-photon Michelson interferometer. Physical Review A, 2012, 86, .	2.5	19
95	Stokes and anti-Stokes Raman spectra of the high-energy C-C stretching modes in graphene and diamond. Physica Status Solidi (B): Basic Research, 2015, 252, 2380-2384.	1.5	17
96	Near-field imaging and spectroscopy of electronic states in single-walled carbon nanotubes. Physica Status Solidi (B): Basic Research, 2006, 243, 3146-3150.	1.5	16
97	Detection of nanoparticles using optical gradient forces. Journal of Modern Optics, 2003, 50, 1509-1520.	1.3	15
98	Stacked optical antennas. Applied Physics Letters, 2011, 98, 023111.	3.3	15
99	Kovacs Memory Effect with an Optically Levitated Nanoparticle. Physical Review Letters, 2021, 127, 130603.	7.8	15
100	FPGA Implementation of a Kalman-Based Motion Estimator for Levitated Nanoparticles. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 2374-2386.	4.7	13
101	Quantized thermal conductance in metallic heterojunctions. Applied Physics Letters, 2019, 114, 123102.	3.3	13
102	Insights into light and mass transport in nanoparticle-based aerogels: the advantages of monolithic 3D photocatalysts. Journal of Materials Chemistry A, 2021, 9, 22380-22391.	10.3	13
103	Near-field Raman spectroscopy of nanocarbon materials. Faraday Discussions, 2015, 184, 193-206.	3.2	11
104	Controlling the Color of Plasmonic Substrates with Inkjet Printing. Advanced Optical Materials, 2017, 5, 1700153.	7.3	11
105	Resonant Optical Antennas with Atomic-Sized Tips and Tunable Gaps Achieved by Mechanical Actuation and Electrical Control. Nano Letters, 2020, 20, 4346-4353.	9.1	11
106	Rapid Flipping of Parametric Phase States. Physical Review Letters, 2019, 123, 254102.	7.8	10
107	NEAR-FIELD RAMAN SPECTROSCOPY OF INDIVIDUAL SINGLE-WALLED CARBON NANOTUBES. International Journal of Nanoscience, 2004, 03, 371-379.	0.7	7
108	Tip-Enhanced Stokes and Anti-Stokes Scattering from Carbyne. Nano Letters, 2022, , .	9.1	7

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109	Quantum engineers in high demand. Nature Materials, 2021, 20, 1449-1449.	27.5	6
110	Freestanding and Permeable Nanoporous Gold Membranes for Surface-Enhanced Raman Scattering. ACS Applied Materials & Interfaces, 2022, 14, 16558-16567.	8.0	6
111	Near-Field Optical Characterization of Nanocomposite Materials. Journal of the American Ceramic Society, 2002, 85, 1057-1060.	3.8	5
112	Optoelectronics in Flatland. Optics and Photonics News, 2015, 26, 24.	0.5	5
113	Observing the Angular Distribution of Raman Scattered Fields. ACS Nano, 2016, 10, 1722-1723.	14.6	5
114	Tip-Enhanced Spectroscopy and Imaging of Carbon Nanomaterials. World Scientific Series on Carbon Nanoscience, 2019, , 175-221.	0.1	4
115	Tip-enhanced Raman spectroscopy of confined carbon chains. Journal of Chemical Physics, 2022, 156, 044203.	3.0	4
116	Transverse confinement of electron beams in a 2D optical lattice for compact coherent x-ray sources. New Journal of Physics, 2021, 23, 083033.	2.9	3
117	Detection of nanoparticles using optical gradient forces. Journal of Modern Optics, 2003, 50, 1509-1520.	1.3	3
118	Optimal orientation detection of an anisotropic dipolar scatterer. Physical Review A, 2022, 105, .	2.5	3
119	Ion Migration in Monolayer $\text{MoS}_2$ Memristors. Physical Review Applied, 2022, 18, .	3.8	3
120	Plasmon coupled tip-enhanced near-field optical microscopy. , 0, , .		1
121	Photoluminescence from sharp gold tips. , 2003, , .		1
122	Near-field optical spectroscopy with 20 nm spatial resolution. , 2003, , .		1
123	Optical near-field mapping with a superconducting nanowire detector. Applied Physics Letters, 2018, 113, 011103.	3.3	1
124	Single-Mode, Broadband, Near Infrared Light Emission from Metal-Oxide-Semiconductor Tunnel Junctions in Silicon Photonics. , 2021, , .		1
125	Nanoparticle-sensor based on optical gradient force. , 2003, , .		0
126	Near-field Raman Spectroscopy using the Local Field-Enhancement Technique. Microscopy and Microanalysis, 2003, 9, 1078-1079.	0.4	0



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127	Local phonon modes of single-walled carbon nanotubes observed by near-field Raman spectroscopy. AIP Conference Proceedings, 2004, , .	0.4	0
128	Individual single wall carbon nanotube photonics. , 0, , .		0
129	Local Fields of Optical Antenna Structures. , 2007, , .		0
130	Raman spectroscopic study of silicone-based hydrogel polymers with large index changes induced by femtosecond laser micromachining. , 2008, , .		0
131	Near-field Raman Microscopy and Spectroscopy of Carbon Nanotubes. , 2010, , .		0
132	Optomechanics at the photon recoil limit with levitated nanoparticles. , 2017, , .		0
133	Cold Damping of a Levitated Nanoparticle. , 2019, , .		0
134	Correction to Light at the End of the Tunnel. ACS Photonics, 2021, 8, 682-682.	6.6	0
135	Ground-state cooling of a levitated nanoparticle. , 2021, , .		0
136	MoTe <sub>2</sub> Vertical Heterostructure Waveguide Detector. , 2019, , .		0
137	Confined Electron Laser. , 2021, , .		0
138	Electrically Tunable Graphene Organic Hybrid Ring Resonators. , 2021, , .		0