

# 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	Tip-enhanced Raman spectroscopy of confined carbon chains. Journal of Chemical Physics, 2022, 156, 044203.	3.0	4
2	Freestanding and Permeable Nanoporous Gold Membranes for Surface-Enhanced Raman Scattering. ACS Applied Materials & Interfaces, 2022, 14, 16558-16567.	8.0	6
3	Tip-Enhanced Stokes-“Anti-Stokes Scattering from Carbyne. Nano Letters, 2022, , .	9.1	7
4	Optimal orientation detection of an anisotropic dipolar scatterer. Physical Review A, 2022, 105, .	2.5	3
5	Ion Migration in Monolayer $S_2$ Memristors. Physical Review Applied, 2022, 18, .	3.8	3
6	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
7	Correction to Light at the End of the Tunnel. ACS Photonics, 2021, 8, 682-682.	6.6	0
8	Escape dynamics of active particles in multistable potentials. Nature Communications, 2021, 12, 2446.	12.8	26
9	Single-Mode, Broadband, Near Infrared Light Emission from Metal-Oxide-Semiconductor Tunnel Junctions in Silicon Photonics. , 2021, , .		1
10	Ground-state cooling of a levitated nanoparticle. , 2021, , .		0
11	Anti-Stokes Raman Scattering of Single Carbyne Chains. ACS Nano, 2021, 15, 12249-12255.	14.6	20
12	Quantum control of a nanoparticle optically levitated in cryogenic free space. Nature, 2021, 595, 378-382.	27.8	163
13	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
14	Quantum engineers in high demand. Nature Materials, 2021, 20, 1449-1449.	27.5	6
15	Kovacs Memory Effect with an Optically Levitated Nanoparticle. Physical Review Letters, 2021, 127, 130603.	7.8	15
16	Sub-Kelvin Feedback Cooling and Heating Dynamics of an Optically Levitated Librator. Physical Review Letters, 2021, 127, 123605.	7.8	32
17	Levitodynamics: Levitation and control of microscopic objects in vacuum. Science, 2021, 374, eabg3027.	12.6	142
18	Resonant Light Emission from Graphene/Hexagonal Boron Nitride/Graphene Tunnel Junctions. Nano Letters, 2021, 21, 8332-8339.	9.1	20

#	ARTICLE	IF	CITATIONS
19	Confined Electron Laser. , 2021, , .		0
20	Electrically Tunable Graphene Organic Hybrid Ring Resonators. , 2021, , .		0
21	Coupling Interlayer Excitons to Whispering Gallery Modes in van der Waals Heterostructures. Nano Letters, 2020, 20, 6155-6161.	9.1	25
22	Raman Scattering Cross Section of Confined Carbyne. Nano Letters, 2020, 20, 6750-6755.	9.1	30
23	Optically levitated rotor at its thermal limit of frequency stability. Physical Review A, 2020, 102, .	2.5	24
24	Transition Metal Dichalcogenide Resonators for Second Harmonic Signal Enhancement. ACS Photonics, 2020, 7, 2482-2488.	6.6	48
25	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
26	Motional Sideband Asymmetry of a Nanoparticle Optically Levitated in Free Space. Physical Review Letters, 2020, 124, 013603.	7.8	104
27	Waveguide-integrated van der Waals heterostructure photodetector at telecom wavelengths with high speed and high responsivity. Nature Nanotechnology, 2020, 15, 118-124.	31.5	208
28	Beam Steering with a Nonlinear Optical Phased Array Antenna. Nano Letters, 2019, 19, 6097-6103.	9.1	24
29	Theory for cavity cooling of levitated nanoparticles via coherent scattering: Master equation approach. Physical Review A, 2019, 100, .	2.5	44
30	Optimal position detection of a dipolar scatterer in a focused field. Physical Review A, 2019, 100, .	2.5	32
31	Resolved-Sideband Cooling of a Levitated Nanoparticle in the Presence of Laser Phase Noise. Physical Review Letters, 2019, 123, 153601.	7.8	29
32	Optical antennas driven by quantum tunneling: a key issues review. Reports on Progress in Physics, 2019, 82, 112401.	20.1	56
33	One-Dimensional Edge Contacts to a Monolayer Semiconductor. Nano Letters, 2019, 19, 6914-6923.	9.1	61
34	Light from van der Waals quantum tunneling devices. Nature Communications, 2019, 10, 292.	12.8	63
35	Cold Damping of an Optically Levitated Nanoparticle to Microkelvin Temperatures. Physical Review Letters, 2019, 122, 223601.	7.8	109
36	Electron Transport through Metal/MoS <sub>2</sub> Interfaces: Edge- or Area-Dependent Process?. Nano Letters, 2019, 19, 3641-3647.	9.1	42

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37	FPGA Implementation of a Kalman-Based Motion Estimator for Levitated Nanoparticles. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 2374-2386.	4.7	13
38	Cavity-Based 3D Cooling of a Levitated Nanoparticle via Coherent Scattering. Physical Review Letters, 2019, 122, 123601.	7.8	99
39	Quantized thermal conductance in metallic heterojunctions. Applied Physics Letters, 2019, 114, 123102.	3.3	13
40	Cold Damping of a Levitated Nanoparticle. , 2019, , .		0
41	Rapid Flipping of Parametric Phase States. Physical Review Letters, 2019, 123, 254102.	7.8	10
42	Tip-Enhanced Spectroscopy and Imaging of Carbon Nanomaterials. World Scientific Series on Carbon Nanoscience, 2019, , 175-221.	0.1	4
43	MoTe <sub>2</sub> Vertical Heterostructure Waveguide Detector. , 2019, , .		0
44	Measuring the internal temperature of a levitated nanoparticle in high vacuum. Physical Review A, 2018, 97, .	2.5	49
45	Minimizing residues and strain in 2D materials transferred from PDMS. Nanotechnology, 2018, 29, 265203.	2.6	108
46	Fast MoTe <sub>2</sub> Waveguide Photodetector with High Sensitivity at Telecommunication Wavelengths. ACS Photonics, 2018, 5, 1846-1852.	6.6	83
47	Calibration and energy measurement of optically levitated nanoparticle sensors. Review of Scientific Instruments, 2018, 89, 033111.	1.3	54
48	Light at the End of the Tunnel. ACS Photonics, 2018, 5, 4195-4202.	6.6	53
49	Optical near-field mapping with a superconducting nanowire detector. Applied Physics Letters, 2018, 113, 011103.	3.3	1
50	Optical levitation and feedback cooling of a nanoparticle at subwavelength distances from a membrane. Physical Review A, 2018, 98, .	2.5	30
51	Sensing Static Forces with Free-Falling Nanoparticles. Physical Review Letters, 2018, 121, 063602.	7.8	97
52	Raman resonance profile of an individual confined long linear carbon chain. Carbon, 2018, 139, 581-585.	10.3	22
53	GHz Rotation of an Optically Trapped Nanoparticle in Vacuum. Physical Review Letters, 2018, 121, 033602.	7.8	198
54	Carbon Nanotube Chirality Determines Properties of Encapsulated Linear Carbon Chain. Nano Letters, 2018, 18, 5426-5431.	9.1	60

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55	Multispectral Imaging with Tunable Plasmonic Filters. ACS Photonics, 2017, 4, 236-241.	6.6	36
56	Optically levitated nanoparticle as a model system for stochastic bistable dynamics. Nature Communications, 2017, 8, 15141.	12.8	84
57	Controlling the Color of Plasmonic Substrates with Inkjet Printing. Advanced Optical Materials, 2017, 5, 1700153.	7.3	11
58	Antenna-Coupled Tunnel Junctions. Springer Series in Solid-state Sciences, 2017, , 211-236.	0.3	21
59	Direct measurement of Kramers turnover with a levitated nanoparticle. Nature Nanotechnology, 2017, 12, 1130-1133.	31.5	102
60	Controlling the net charge on a nanoparticle optically levitated in vacuum. Physical Review A, 2017, 95, .	2.5	69
61	Optomechanics at the photon recoil limit with levitated nanoparticles. , 2017, , .		0
62	Temporal Quantum Correlations in Inelastic Light Scattering from Water. Physical Review Letters, 2016, 117, 243603.	7.8	28
63	First-principles simulations of 2-D semiconductor devices: Mobility, I-V characteristics, and contact resistance. , 2016, , .		20
64	Confined linear carbon chains as a route to bulk <sup>∞</sup> acetylene. Nature Materials, 2016, 15, 634-639.	27.5	341
65	Cooling Mechanical Oscillators by Coherent Control. Physical Review Letters, 2016, 117, 163601.	7.8	37
66	Direct Measurement of Photon Recoil from a Levitated Nanoparticle. Physical Review Letters, 2016, 116, 243601.	7.8	239
67	Polyene electronic and vibrational properties under environmental interactions. Physical Review B, 2016, 94, .	3.2	45
68	Observing the Angular Distribution of Raman Scattered Fields. ACS Nano, 2016, 10, 1722-1723.	14.6	5
69	Defect-Free Carbon Nanotube Coils. Nano Letters, 2016, 16, 2152-2158.	9.1	20
70	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
71	Cooling and manipulation of a levitated nanoparticle with an optical fiber trap. Applied Physics Letters, 2015, 107, .	3.3	51
72	Optoelectronics in Flatland. Optics and Photonics News, 2015, 26, 24.	0.5	5

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73	Near-field Raman spectroscopy of nanocarbon materials. Faraday Discussions, 2015, 184, 193-206.	3.2	11
74	Color Rendering Plasmonic Aluminum Substrates with Angular Symmetry Breaking. ACS Nano, 2015, 9, 12383-12391.	14.6	92
75	Direct On-Chip Optical Plasmon Detection with an Atomically Thin Semiconductor. Nano Letters, 2015, 15, 5477-5481.	9.1	40
76	Excitation of Magnetic Dipole Transitions at Optical Frequencies. Physical Review Letters, 2015, 114, 163903.	7.8	130
77	Stokes-anti-Stokes correlations in diamond. Optics Letters, 2015, 40, 2393.	3.3	36
78	Antenna-coupled photon emission from hexagonal boron nitride tunnel junctions. Nature Nanotechnology, 2015, 10, 1058-1063.	31.5	141
79	Spatial Coherence in Near-Field Raman Scattering. Physical Review Letters, 2014, 113, 186101.	7.8	63
80	Dynamic relaxation of a levitated nanoparticle from a non-equilibrium steady state. Nature Nanotechnology, 2014, 9, 358-364.	31.5	151
81	Optical-Phonon Resonances with Saddle-Point Excitons in Twisted-Bilayer Graphene. Nano Letters, 2014, 14, 5687-5692.	9.1	45
82	Individual Template-Stripped Conductive Gold Pyramids for Tip-Enhanced Dielectrophoresis. ACS Photonics, 2014, 1, 464-470.	6.6	30
83	Theory of Spatial Coherence in Near-Field Raman Scattering. Physical Review X, 2014, 4, .	8.9	31
84	The classical Bloch equations. American Journal of Physics, 2014, 82, 947-954.	0.7	42
85	Nonlinear Mode Coupling and Synchronization of a Vacuum-Trapped Nanoparticle. Physical Review Letters, 2014, 112, 103603.	7.8	53
86	Graphene transfer with reduced residue. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 1455-1458.	2.1	140
87	Thermal nonlinearities in a nanomechanical oscillator. Nature Physics, 2013, 9, 806-810.	16.7	230
88	Controllable optical negative refraction and phase conjugation in graphite thin films. Nature Physics, 2013, 9, 423-425.	16.7	50
89	Mechanism of near-field Raman enhancement in two-dimensional systems. Physical Review B, 2012, 85, .	3.2	52
90	Coherence measurements with the two-photon Michelson interferometer. Physical Review A, 2012, 86, .	2.5	19

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91	Subkelvin Parametric Feedback Cooling of a Laser-Trapped Nanoparticle. <i>Physical Review Letters</i> , 2012, 109, 103603.	7.8	461
92	Highly Reproducible Near-Field Optical Imaging with Sub-20-nm Resolution Based on Template-Stripped Gold Pyramids. <i>ACS Nano</i> , 2012, 6, 9168-9174.	14.6	130
93	Self-Similar Gold-Nanoparticle Antennas for a Cascaded Enhancement of the Optical Field. <i>Physical Review Letters</i> , 2012, 109, 017402.	7.8	84
94	Nanoscale spectroscopy with optical antennas. <i>Chemical Science</i> , 2011, 2, 136-140.	7.4	52
95	Electrical Excitation of Surface Plasmons. <i>Physical Review Letters</i> , 2011, 106, 226802.	7.8	200
96	From near-field optics to optical antennas. <i>Physics Today</i> , 2011, 64, 47-52.	0.3	71
97	Antennas for light. <i>Nature Photonics</i> , 2011, 5, 83-90.	31.4	2,345
98	Stacked optical antennas. <i>Applied Physics Letters</i> , 2011, 98, 023111.	3.3	15
99	Near-field Raman Microscopy and Spectroscopy of Carbon Nanotubes. , 2010, , .		0
100	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
101	Tip-enhanced Raman spectroscopy of carbon nanotubes. <i>Journal of Raman Spectroscopy</i> , 2009, 40, 1420-1426.	2.5	122
102	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
103	Optical Antennas. <i>Advances in Optics and Photonics</i> , 2009, 1, 438.	25.5	1,131
104	Nonlinear plasmonics with gold nanoparticle antennas. <i>Journal of Optics</i> , 2009, 11, 114030.	1.5	128
105	Exciton transfer and propagation in carbon nanotubes studied by near-field optical microscopy. <i>Physica Status Solidi (B): Basic Research</i> , 2008, 245, 2243-2246.	1.5	19
106	Optical antennas tuned to pitch. <i>Nature</i> , 2008, 455, 887-887.	27.8	66
107	Focusing of surface phonon polaritons. <i>Applied Physics Letters</i> , 2008, 92, .	3.3	80
108	Van der Waals versus optical interaction between metal nanoparticles. <i>Optics Letters</i> , 2008, 33, 1029.	3.3	36

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109	Raman spectroscopic study of silicone-based hydrogel polymers with large index changes induced by femtosecond laser micromachining. , 2008, , .		0
110	Local Fields of Optical Antenna Structures. , 2007, , .		0
111	Effective Wavelength Scaling for Optical Antennas. Physical Review Letters, 2007, 98, 266802.	7.8	941
112	Spectral dependence of single molecule fluorescence enhancement. Optics Express, 2007, 15, 14266.	3.4	495
113	Chapter 5 The history of near-field optics. Progress in Optics, 2007, , 137-184.	0.6	95
114	On the concept of imaging nanoscale vector fields. Nature Photonics, 2007, 1, 242-242.	31.4	23
115	NEAR-FIELD OPTICAL MICROSCOPY AND SPECTROSCOPY WITH POINTED PROBES. Annual Review of Physical Chemistry, 2006, 57, 303-331.	10.8	371
116	Enhancement and Quenching of Single-Molecule Fluorescence. Physical Review Letters, 2006, 96, 113002.	7.8	2,632
117	Optical Detection of Single Nanoparticles and Viruses. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1292-1300.	2.9	29
118	Tip-enhanced optical spectroscopy for surface analysis in biosciences. Surface and Interface Analysis, 2006, 38, 1472-1480.	1.8	26
119	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
120	Local phonon modes of single-walled carbon nanotubes observed by near-field Raman spectroscopy. AIP Conference Proceedings, 2004, , .	0.4	0
121	NEAR-FIELD RAMAN SPECTROSCOPY OF INDIVIDUAL SINGLE-WALLED CARBON NANOTUBES. International Journal of Nanoscience, 2004, 03, 371-379.	0.7	7
122	Characterization of nanoplasmonic structures by locally excited photoluminescence. Applied Physics Letters, 2003, 83, 5041-5043.	3.3	137
123	Detection of nanoparticles using optical gradient forces. Journal of Modern Optics, 2003, 50, 1509-1520.	1.3	15
124	Near-Field Second-Harmonic Generation Induced by Local Field Enhancement. Physical Review Letters, 2003, 90, 013903.	7.8	549
125	Photoluminescence from sharp gold tips. , 2003, , .		1
126	Nanoparticle-sensor based on optical gradient force. , 2003, , .		0



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127	Experimental study of nanoparticle detection by optical gradient forces. Review of Scientific Instruments, 2003, 74, 5231-5235.	1.3	20
128	Near-field optical spectroscopy with 20 nm spatial resolution. , 2003, , .		1
129	Near-field scattering of longitudinal fields. Applied Physics Letters, 2003, 82, 4596-4598.	3.3	76
130	High-Resolution Near-Field Raman Microscopy of Single-Walled Carbon Nanotubes. Physical Review Letters, 2003, 90, 095503.	7.8	787
131	Near-field Raman Spectroscopy using the Local Field-Enhancement Technique. Microscopy and Microanalysis, 2003, 9, 1078-1079.	0.4	0
132	Detection of nanoparticles using optical gradient forces. Journal of Modern Optics, 2003, 50, 1509-1520.	1.3	3
133	Near-Field Optical Characterization of Nanocomposite Materials. Journal of the American Ceramic Society, 2002, 85, 1057-1060.	3.8	5
134	Longitudinal Field Modes Probed by Single Molecules. Physical Review Letters, 2001, 86, 5251-5254.	7.8	723
135	Enhanced reflectivity contrast in confocal solid immersion lens microscopy. Applied Physics Letters, 2000, 77, 3459-3461.	3.3	40
136	Theory of Nanometric Optical Tweezers. Physical Review Letters, 1997, 79, 645-648.	7.8	945
137	Plasmon coupled tip-enhanced near-field optical microscopy. , 0, , .		1
138	Individual single wall carbon nanotube photonics. , 0, , .		0