Vladimir A Aksyuk

List of Publications by Year
in descending order

134 papers	4,779 citations	136885 32 h-index	98753 67 g-index
134 all docs	134 docs citations	134 times ranked	4349 citing authors

#	Article	IF	Citations
1	Quantum Mechanical Actuation of Microelectromechanical Systems by the Casimir Force. Science, 2001, 291, 1941-1944.	6.0	782
2	Nonlinear Micromechanical Casimir Oscillator. Physical Review Letters, 2001, 87, 211801.	2.9	417
3	Giant Piezoelectricity on Si for Hyperactive MEMS. Science, 2011, 334, 958-961.	6.0	394
4	Wavelength add-drop switching using tilting micromirrors. Journal of Lightwave Technology, 1999, 17, 904-911.	2.7	225
5	1100 x 1100 port MEMS-based optical crossconnect with 4-dB maximum loss. IEEE Photonics Technology Letters, 2003, 15, 1537-1539.	1.3	183
6	Wavelength-selective 1/spl times/K switches using free-space optics and MEMS micromirrors: theory, design, and implementation. Journal of Lightwave Technology, 2005, 23, 1620-1630.	2.7	176
7	Electromagnetically Induced Transparency and Wideband Wavelength Conversion in Silicon Nitride Microdisk Optomechanical Resonators. Physical Review Letters, 2013, 110, 223603.	2.9	134
8	Optomechanical Transduction of an Integrated Silicon Cantilever Probe Using a Microdisk Resonator. Nano Letters, 2011, 11, 791-797.	4.5	123
9	Strong Casimir force reduction through metallic surface nanostructuring. Nature Communications, 2013, 4, 2515.	5.8	113
10	Observation of mesoscopic vortex physics using micromechanical oscillators. Nature, 1999, 399, 43-46.	13.7	100
11	Photonic chip for laser stabilization to an atomic vapor with 10^{âˆ’11} instability. Optica, 2018, 5, 443.	4.8	95
12	Nanophotonic Atomic Force Microscope Transducers Enable Chemical Composition and Thermal Conductivity Measurements at the Nanoscale. Nano Letters, 2017, 17, 5587-5594.	4.5	93
13	Nanoscale Imaging of Plasmonic Hot Spots and Dark Modes with the Photothermal-Induced Resonance Technique. Nano Letters, 2013, 13, 3218-3224.	4.5	89
14	A silicon MEMS optical switch attenuator and its use in lightwave subsystems. IEEE Journal of Selected Topics in Quantum Electronics, 1999, 5, 18-25.	1.9	86
15	Nanoscale Infrared Spectroscopy: Improving the Spectral Range of the Photothermal Induced Resonance Technique. Analytical Chemistry, 2013, 85, 1972-1979.	3.2	84
16	Compact nanomechanical plasmonic phase modulators. Nature Photonics, 2015, 9, 267-273.	15.6	73
17	Observation of correlation between route to formation, coherence, noise, and communication performance of Kerr combs. Optics Express, 2012, 20, 29284.	1.7	71
18	<title>Lucent Microstar micromirror array technology for large optical crossconnects</title>. , 2000, , .		66

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19	A microelectromechanically controlled cavity optomechanical sensing system. New Journal of Physics, 2012, 14, 075015.	1.2	66
20	Photonic waveguide to free-space Gaussian beam extreme mode converter. Light: Science and Applications, 2018, 7, 72.	7.7	66
21	Nanoâ€“opto-electro-mechanical switches operated at CMOS-level voltages. Science, 2019, 366, 860-864.	6.0	64
22	Quantitative Chemical Analysis at the Nanoscale Using the Photothermal Induced Resonance Technique. Analytical Chemistry, 2017, 89, 13524-13531.	3.2	62
23	238 x 238 micromechanical optical cross connect. IEEE Photonics Technology Letters, 2003, 15, 587-589.	1.3	59
24	Wide cantilever stiffness range cavity optomechanical sensors for atomic force microscopy. Optics Express, 2012, 20, 18268.	1.7	59
25	Giant piezoelectricity in PMN-PT thin films: Beyond PZT. MRS Bulletin, 2012, 37, 1022-1029.	1.7	55
26	An Efficient Large-Area Grating Coupler for Surface Plasmon Polaritons. Plasmonics, 2012, 7, 269-277.	1.8	54
27	The Nanolithography Toolbox. Journal of Research of the National Institute of Standards and Technology, 2016, 121, 464.	0.4	54
28	Metasurface-Integrated Photonic Platform for Versatile Free-Space Beam Projection with Polarization Control. ACS Photonics, 2019, 6, 2902-2909.	3.2	49
29	256<tex>$,times,$</tex>256 Port Optical Cross-Connect Subsystem. Journal of Lightwave Technology, 2004, 22, 1499-1509.	2.7	48
30	MEMS-Based Channelized Dispersion Compensator With Flat Passbands. Journal of Lightwave Technology, 2004, 22, 101-105.	2.7	38
31	Magneto-optical trapping using planar optics. New Journal of Physics, 2021, 23, 013021.	1.2	37
32	NIST on a Chip: Realizing SI units with microfabricated alkali vapour cells. Journal of Physics: Conference Series, 2016, 723, 012056.	0.3	35
33	Silicon Micro-Machines for Fun and Profit. Journal of Low Temperature Physics, 2012, 169, 386-399.	0.6	33
34	Nanomechanical motion transduction with a scalable localized gap plasmon architecture. Nature Communications, 2016, 7, 13746.	5.8	33
35	Subnanometer localization accuracy in widefield optical microscopy. Light: Science and Applications, 2018, 7, 31.	7.7	32
36	High-Resolution Imaging and Spectroscopy at High Pressure: A Novel Liquid Cell for the Transmission Electron Microscope. Microscopy and Microanalysis, 2015, 21, 1629-1638.	0.2	31

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37	Near-field asymmetries in plasmonic resonators. Nanoscale, 2015, 7, 3634-3644.	2.8	31
38	Compact 64 x 64 micromechanical optical cross connect. IEEE Photonics Technology Letters, 2003, 15, 993-995.	1.3	29
39	Probing coherence in microcavity frequency combs via optical pulse shaping. Optics Express, 2012, 20, 21033.	1.7	28
40	MEMS thermal imager with optical readout. Sensors and Actuators A: Physical, 2009, 155, 47-57.	2.0	27
41	Stress-induced curvature engineering in surface-micromachined devices. , 1999, 3680, 984.		23
42	Integrated tuning fork nanocavity optomechanical transducers with high fMQM product and stress-engineered frequency tuning. Applied Physics Letters, 2015, 107, .	1.5	23
43	Micromechanical "Trampoline" Magnetometers for Use in Large Pulsed Magnetic Fields. Science, 1998, 280, 720-722.	6.0	22
44	MEMS for Light-Wave Networks. MRS Bulletin, 2001, 26, 328-329.	1.7	20
45	Quasianalytical modal approach for computing Casimir interactions in periodic nanostructures. Physical Review A, 2012, 86, .	1.0	19
46	A Hybrid MEMS-Waveguide Wavelength Selective Cross Connect. IEEE Photonics Technology Letters, 2004, 16, 99-101.	1.3	18
47	Electrically tunable plasmomechanical oscillators for localized modulation, transduction, and amplification. Optica, 2018, 5, 71.	4.8	18
48	Flexible fabrication of large pixel count piston-tip-tilt mirror arrays for fast spatial light modulators. Microelectronic Engineering, 2007, 84, 1157-1161.	1.1	17
49	Control of microelectromechanical systems membrane curvature by silicon ion implantation. Applied Physics Letters, 2003, 83, 2321-2323.	1.5	16
50	Imaging nanophotonic modes of microresonators using a focused ion beam. Nature Photonics, 2016, 10, 35-39.	15.6	16
51	Electron and X-ray Focused Beam-Induced Cross-Linking in Liquids: Toward Rapid Continuous 3D Nanoprinting and Interfacing using Soft Materials. ACS Nano, 2020, 14, 12982-12992.	7.3	16
52	Casimir Force in Micro and Nano Electro Mechanical Systems. Lecture Notes in Physics, 2011, , 287-309.	0.3	16
53	Reconfigurable 16-channel WDM drop module using silicon MEMS optical switches. IEEE Photonics Technology Letters, 1999, 11, 63-65.	1.3	15
54	Sensing without power. Nature Nanotechnology, 2017, 12, 940-941.	15.6	15

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55	High-Density Solder Bump Interconnect for MEMS Hybrid Integration. IEEE Transactions on Advanced Packaging, 2007, 30, 622-628.	1.7	14
56	Frequency Stabilization of Nanomechanical Resonators Using Thermally Invariant Strain Engineering. Nano Letters, 2020, 20, 3050-3057.	4.5	13
57	Meta-grating outcouplers for optimized beam shaping in the visible. Optics Express, 2021, 29, 14789.	1.7	13
58	Exceptional points in lossy media lead to deep polynomial wave penetration with spatially uniform power loss. Nature Nanotechnology, 2022, 17, 583-589.	15.6	12
59	High Throughput Nanoimaging of Thermal Conductivity and Interfacial Thermal Conductance. Nano Letters, 2022, 22, 4325-4332.	4.5	12
60	MEMS-based 14â€…GHz resolution dynamic optical filter. Electronics Letters, 2003, 39, 1744.	0.5	10
61	Optical MEMS devices for telecom systems. , 2003, , .		10
62	Design and modeling of an ultra-compact 2x2 nanomechanical plasmonic switch. Optics Express, 2015, 23, 11404.	1.7	10
63	Two-dimensional imaging and modification of nanophotonic resonator modes using a focused ion beam. Optica, 2017, 4, 1444.	4.8	10
64	<title>Mechanical reliability of surface-micromachined self-assembling two-axis MEMS tilting mirrors</title>. , 2000, 4180, 86.		9
65	Subdiffraction Spatial Mapping of Nanomechanical Modes Using a Plasmomechanical System. ACS Photonics, 2018, 5, 3658-3665.	3.2	8
66	Overcoming thermo-optical dynamics in broadband nanophotonic sensing. Microsystems and Nanoengineering, 2021, 7, 52.	3.4	7
67	<title>Design for reliability of MEMS/MOEMS for lightwave telecommunications</title>. , 2001, 4558, 6.		6
68	Two-dimensional MEMS array for maskless lithography and wavefront modulation. , 2007, , .		6
69	Enhanced coupling between light and surface plasmons by nano-structured Fabryâ€“PÃ©rot resonator. Journal of Applied Physics, 2011, 110, 066102.	1.1	6
70	Characterization of electrothermal actuation with nanometer and microradian precision. , 2015, , .		6
71	Transfer of motion through a microelectromechanical linkage at nanometer and microradian scales. Microsystems and Nanoengineering, 2016, 2, 16055.	3.4	6
72	A system for probing Casimir energy corrections to the condensation energy. Microsystems and Nanoengineering, 2020, 6, 115.	3.4	6

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73	MEMS mirror array for a wavelength-selective 1xK switch. , 2003, 5116, 445.		5
74	Fabrication Process for an Optomechanical Transducer Platform with Integrated Actuation. Journal of Research of the National Institute of Standards and Technology, 2016, 121, 507.	0.4	5
75	Collimating a Free-Space Gaussian Beam by Means of a Chip-Scale Photonic Extreme Mode Converter. , 2018, , .		5
76	Using thermo-optical nonlinearity to robustly separate absorption and radiation losses in nanophotonic resonators. Optics Express, 2021, 29, 6967.	1.7	5
77	<title>Electrical and environmental reliability characterization of surface-micromachined MEMS polysilicon test structures</title>. , 2000, 4180, 91.		4
78	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, 4177, 49.		4
79	MEMS/MOEMS for lightwave networks: Can little machines make it big?. , 2000, 4175, 2.		4
80	Diffraction limited focusing and routing of gap plasmons by a metal-dielectric-metal lens. Optics Express, 2015, 23, 21899.	1.7	4
81	Fundamental limits and optimal estimation of the resonance frequency of a linear harmonic oscillator. Communications Physics, 2021, 4, .	2.0	4
82	<title>Construction of a fully functional NSOM using MUMPs technology</title>. , 1997, , .		3
83	Optomechanical transducer-based nanocantilever for atomic force microscopy. , 2015, , .		3
84	Cantilever array with optomechanical read-out and integrated actuation for simultaneous high sensitivity force detection. , 2016, , .		3
85	High NA Free-Space Focusing Using a Metasurface-Integrated Photonic Platform for Atom Trapping. , 2019, , .		3
86	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, 4178, 2.		2
87	Closed-loop AO demonstration of MEMS SLM with piston, tip, and tilt control. Proceedings of SPIE, 2008, , .	0.8	2
88	Integrated MEMS Tunable High Quality Factor Optical Cavity for Optomechanical Transduction. , 2010, , .		2
89	Surface normal optical MEMS in dynamic WDM transport networks. , 1999, , .		1
90	Integrated cavity optomechanical sensors for atomic force microscopy. , 2012, , .		1

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91	NIST on a chip with alkali vapor cells: Initial results. , 2016, , .		1
92	A dual beam photonic wavelength refernce. Measurement: Sensors, 2021, 18, 100288.	1.3	1
93	Apodized Meta-Gratings for Visible- Wavelength Beam Shaping. , 2020, , .		1
94	High mechanical fMQM product tuning fork cavity optomechanical transducers. , 2015, , .		1
95	Plasmonic Nano-Electro-Mechanical Systems: from Local Motion Sensing to Powering Mechanical Oscillation. , 2019, , .		1
96	MEMS Based Optical Switching. , 2006, , 169-213.		1
97	Metasurface-Integrated Photonic Platform for Versatile Free-Space Beam Projection with Polarization Control. ACS Photonics, 2019, 6, .	3.2	1
98	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, 4179, 2.		0
99	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, , .		0
100	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, 4176, 2.		0
101	<title>MEMS/MOEMS for lightwave networks: Can little machines make it big?</title>. , 2000, , .		0
102	Silicon Micromachines for Lightwave Networks: Little machines with a Big Future (OPN Trends) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 30	0.4	0
103	CMOS-Based MEMS Mirror Driver for Maskless Lithography Systems. , 2007, , .		0
104	Optomechanical transduction of a cantilever probe using a high-Q Si microdisk cavity. , 2010, , .		0
105	Cavity optomechanical sensors for atomic force microscopy. , 2011, , .		0
106	Time Domain Study of On-Chip Microresonator Frequency Combs. , 2012, , .		0
107	Optical communication test of multiple-wavelength comb source from silicon nitride microresonators. , 2012, , .		0
108	On-chip microresonator frequency combs formation: Observation of comb line dependent mutual coherence. , 2012, , .		0

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109	MEMS and NEMS with integrated cavity optomechanical readout. , 2013, , .		0
110	Direct imaging of nanophotonic cavity modes using Li ion microscope. , 2014, , .		0
111	Silicon nitride cavity optomechanical transducers. , 2014, , .		0
112	Nanoscale Si₃N₄ tuning fork cavity optomechanical sensors with high <i>f_mQ_m</i> product. Proceedings of SPIE, 2016, , .	0.8	0
113	Active electromechanical resonance tuning of localized gap plasmons. , 2017, , .		0
114	Visible-Wavelength Beam Shaping using Two-Dimensional Meta-Grating Outcouplers. , 2020, , .		0
115	Frequency Stability of Stress-Engineered Nanomechanical Resonator and its Cramer-Rao Lower Bound. , 2020, , .		0
116	Laser Cooling Using Metasurface-Enabled Beam Shaping. , 2021, , .		0
117	Exceptional Points in Photonic Grating Band Diagrams Lead to Decay-Free Radiation. , 2021, , .		0
118	Uniformly-Distributed Energy Losses in Photonic Gratings Enabled by Exceptional Points in Band Diagrams. , 2021, , .		0
119	Ultra-Thin Reflective Light Modulators Enabled by Electro-Optical Tunable Gap Plasmons. , 2021, , .		0
120	Multi-Beam Integration for On-chip Quantum Devices. , 2021, , .		0
121	A MEMS Controlled Cavity Optomechanical Sensing System. , 2012, , .		0
122	Microresonator-Based Optical Frequency Combs: Time-Domain Studies. , 2012, , .		0
123	Wide Stiffness Range Cavity Optomechanical Sensors for Atomic Force Microscopy. , 2012, , .		0
124	Tuning Fork Cavity Optomechanical Transducers. , 2014, , .		0
125	Integrated silicon optomechanical transducers and their application in atomic force microscopy. , 2014, , .		0
126	Subdiffraction optical motion transduction using a scalable plasmomechanical platform. , 2016, , .		0

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127	Nanolithography Toolbox: Device design at the nanoscale. , 2017, , .		0
128	Electro-Optic Switching and Regenerative Oscillation of a Localized Gap Plasmomechanical Resonator. , 2017, , .		0
129	Projecting a Wide Surface-Normal Gaussian Beam from an Apodised Grating Supporting Spatially-Broad Standing Wave Resonances. , 2020, , .		0
130	Slow-Light Standing Wave Resonances in an Inverse-Designed Grating for Wide Surface-Normal Free-Space Beam Projection. , 2020, , .		0
131	Thermo-optical Tuning Effects in Photonic Nano-AFM Probe. , 2020, , .		0
132	Interfacing Photonics to Free-Space via Large-area Inverse-designed Diffraction Elements and Metasurfaces. , 2021, , .		0
133	Silicon Micromachines in Optical Communications Networks: Tiny Machines for Large Systems. , 0, , .		0
134	Surface-Normal Free-Space Beam Projection via Slow-Light Standing-Wave Resonance Photonic Gratings. ACS Photonics, 0, , .	3.2	0