

Michael Mazilu

List of Publications by Year in descending order

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161
papers

6,517
citations

81900

39
h-index

64796

79
g-index

164
all docs

164
docs citations

164
times ranked

5299
citing authors

#	ARTICLE	IF	CITATIONS
1	Multiphoton propagation eigenmodes for sum-frequency generation. Optics Communications, 2020, 466, 125610.	2.1	0
2	Black Metals: Optical Absorbers. Micromachines, 2020, 11, 256.	2.9	14
3	Green-function Method for Nonlinear Interactions of Elastic Waves. , 2019, , .		1
4	Non-Classical Second-Order Nonlinear Elastic Wave Interactions. , 2019, , .		0
5	Nonlinear optical eigenmodes: perturbative approach. , 2019, , .		1
6	Optical eigenmode description of partially coherent light fields. , 2019, , .		0
7	Optical eigenmode description of single-photon light-matter interactions. , 2019, , .		0
8	Light-sheet microscopy with attenuation-compensated propagation-invariant beams. Science Advances, 2018, 4, eaar4817.	10.3	76
9	Breaking the Symmetry of Momentum Conservation Using Evanescent Acoustic Fields. Physical Review Letters, 2018, 121, 244301.	7.8	7
10	Wide-field multiphoton imaging through scattering media without correction. Science Advances, 2018, 4, eaau1338.	10.3	39
11	Ultrasonic waves in uniaxially stressed multilayered and one-dimensional phononic structures: Guided and Floquet wave analysis. Journal of the Acoustical Society of America, 2018, 144, 81-91.	1.1	0
12	Dynamics of optically levitated microparticles in vacuum placed in 2D and 3D optical potentials possessing orbital angular momentum. , 2017, , .		0
13	Rotational dynamics and heating of trapped nanovaterite particles. , 2017, , .		1
14	Modal beam splitter: determination of the transversal components of an electromagnetic light field. Scientific Reports, 2017, 7, 9139.	3.3	7
15	Harnessing speckle for a sub-femtometre resolved broadband wavemeter and laser stabilization. Nature Communications, 2017, 8, 15610.	12.8	80
16	Is it possible to create a perfect fractional vortex beam?. Optica, 2017, 4, 330.	9.3	60
17	Optically Trapped Microscopic Particles in a Perfect Fractional Vortex Beam. , 2016, , .		0
18	Encoding complex valued fields using intensity. Optics Express, 2016, 24, 23186.	3.4	5

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19	Is there an optimal basis to maximise optical information transfer?. Scientific Reports, 2016, 6, 22821.	3.3	38
20	Rotational Dynamics and Heating of Trapped Nanovaterite Particles. ACS Nano, 2016, 10, 11505-11510.	14.6	39
21	Measuring and structuring the spatial coherence length of organic light-emitting diodes. Laser and Photonics Reviews, 2016, 10, 82-90.	8.7	12
22	Orbital-angular-momentum transfer to optically levitated microparticles in vacuum. Physical Review A, 2016, 94, .	2.5	33
23	Identification of Single Human Immune Cells with Wavelength Modulation Raman Spectroscopy. , 2016, , .		0
24	Wavelength detection at sub-femtometer resolution and application to laser stabilization. , 2016, , .		0
25	Can information Capacity be Increased with Orbital Angular Momentum?. , 2016, , .		1
26	Integrating sphere based speckle generation for wavelength determination and laser stabilization. , 2016, , .		1
27	Airy Beams for Light-sheet Microscopy. Microscopy and Microanalysis, 2015, 21, 1723-1724.	0.4	2
28	Modulated Raman Spectroscopy for Enhanced Cancer Diagnosis at the Cellular Level. Sensors, 2015, 15, 13680-13704.	3.8	50
29	The Use of Wavelength Modulated Raman Spectroscopy in Label-Free Identification of T Lymphocyte Subsets, Natural Killer Cells and Dendritic Cells. PLoS ONE, 2015, 10, e0125158.	2.5	42
30	Quantitative Detection of Pharmaceuticals Using a Combination of Paper Microfluidics and Wavelength Modulated Raman Spectroscopy. PLoS ONE, 2015, 10, e0123334.	2.5	13
31	Color encoding of phase: A new step in imaging by structured light and single pixel detection. , 2015, , .		0
32	Rotation of two trapped microparticles in vacuum: observation of optically mediated parametric resonances. Optics Letters, 2015, 40, 4751.	3.3	24
33	Prospects for versatile phase manipulation in the TEM: Beyond aberration correction. Ultramicroscopy, 2015, 151, 85-93.	1.9	23
34	Creating and probing of a perfect vortex in situ with an optically trapped particle. Optical Review, 2015, 22, 162-165.	2.0	30
35	Development of a graded index microlens based fiber optical trap and its characterization using principal component analysis. Biomedical Optics Express, 2015, 6, 1512.	2.9	8
36	Enhanced Optical Manipulation of Cells Using Antireflection Coated Microparticles. ACS Photonics, 2015, 2, 1403-1409.	6.6	8

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37	Quantum mechanics compatible Maxwell's stress tensor (presentation video). Proceedings of SPIE, 2014, , .	0.8	0
38	Multi-mode fibre correction for applications in optomechanics using a digital micromirror device. , 2014, , .		0
39	Biologically enabled sub-diffractive focusing. Optics Express, 2014, 22, 27214.	3.4	36
40	Nonredundant Raman imaging using optical eigenmodes. Optica, 2014, 1, 257.	9.3	20
41	Attenuation compensating Airy beams generated by using a digital micro-mirror device. , 2014, , .		0
42	Optical trapping with a perfect vortex beam. Proceedings of SPIE, 2014, , .	0.8	18
43	Biomolecular sensing for cancer diagnostics using highly reproducible SERS substrates. , 2014, , .		0
44	SERS sensing of cancer biomarkers. , 2014, , .		1
45	Reproducible Surface-Enhanced Raman Quantification of Biomarkers in Multicomponent Mixtures. ACS Nano, 2014, 8, 2575-2583.	14.6	52
46	Generation of attenuation-compensating Airy beams. Optics Letters, 2014, 39, 4950.	3.3	28
47	Random super-prism wavelength meter. Optics Letters, 2014, 39, 96.	3.3	53
48	Dynamics of Microparticles Trapped in a Perfect Vortex Beam. , 2014, , .		0
49	Sub-diffractive light confinement: A biological-based approach. , 2014, , .		0
50	Density of optical degrees of freedom: intensity, linear, and angular momentum. , 2014, , .		0
51	Combining focusing properties of a single diatom valve with optical eigenmodes in ultra-shrinking of light. , 2014, , .		0
52	Real-time optical eigenmode characterisation. , 2014, , .		0
53	Rotation induced cooling of an optically trapped microgyroscope in vacuum. , 2014, , .		0
54	Exploiting Lens Aberrations to Create Electron-Vortex Beams. Physical Review Letters, 2013, 111, 064801.	7.8	72

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55	Laser-induced rotation and cooling of a trapped microgyroscope in vacuum. Nature Communications, 2013, 4, 2374.	12.8	251
56	Classification of Raman spectra of single cells with autofluorescence suppression by wavelength modulated excitation. Analytical Methods, 2013, 5, 4608.	2.7	22
57	Coherent control of plasmonic nanoantennas using optical eigenmodes. Scientific Reports, 2013, 3, 1808.	3.3	21
58	Wavelength modulated surface enhanced (resonance) Raman scattering for background-free detection. Analyst, The, 2013, 138, 2816.	3.5	8
59	Dynamics of microparticles trapped in a perfect vortex beam. Optics Letters, 2013, 38, 4919.	3.3	263
60	Enhanced cell transfection using subwavelength focused optical eigenmode beams [Invited]. Photonics Research, 2013, 1, 42.	7.0	9
61	Modal Characterization using Principal Component Analysis: application to Bessel, higher-order Gaussian beams and their superposition. Scientific Reports, 2013, 3, 1422.	3.3	25
62	Effect of the radial and azimuthal mode indices of a partially coherent vortex field upon a spatial correlation singularity. New Journal of Physics, 2013, 15, 113053.	2.9	46
63	Collision of propagating vortices embedded within Airy beams. Journal of Optics (United Kingdom), 2013, 15, 044001.	2.2	21
64	Optimisation of Wavelength Modulated Raman Spectroscopy: Towards High Throughput Cell Screening. PLoS ONE, 2013, 8, e67211.	2.5	11
65	Optical Eigenmode Compressive Imaging: Theory and Applications. , 2013, , .		0
66	Rotation induced cooling of an optically trapped microgyroscope in vacuum. , 2013, , .		0
67	Raman spectra of single cells with autofluorescence suppression by modulated wavelength excitation. Proceedings of SPIE, 2012, , .	0.8	1
68	Optical sorting of gold nanoparticles based on the red-shift of plasmon resonance. Proceedings of SPIE, 2012, , .	0.8	0
69	Algorithm-based continuous pulse duration tuning and performance control of a mode-locked laser diode. Optics Express, 2012, 20, 7022.	3.4	2
70	Auto-focusing and self-healing of Pearcey beams. Optics Express, 2012, 20, 18955.	3.4	252
71	An interacting dipole model to explore broadband transverse optical binding. Journal of Physics Condensed Matter, 2012, 24, 464117.	1.8	8
72	Resonance enhanced optical manipulation: the push and pull of light. , 2012, , .		3

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73	The role of spectral bandwidth in transverse optical binding. , 2012, , .		0
74	Exploring the ultrashort pulse laser parameter space for membrane permeabilisation in mammalian cells. Scientific Reports, 2012, 2, 858.	3.3	15
75	Etaloning, fluorescence and ambient light suppression by modulated wavelength Raman spectroscopy. Biomedical Spectroscopy and Imaging, 2012, 1, 383-389.	1.2	21
76	Optical eigenmodes for imaging applications. , 2012, , .		0
77	Measuring the orbital angular momentum of partially coherent optical vortices through singularities in their cross-spectral density functions. Optics Letters, 2012, 37, 4949.	3.3	56
78	Bidirectional Optical Sorting of Gold Nanoparticles. Nano Letters, 2012, 12, 1923-1927.	9.1	124
79	Simultaneous determination of the constituent azimuthal and radial mode indices for light fields possessing orbital angular momentum. Applied Physics Letters, 2012, 100, .	3.3	45
80	Fluorescence suppression using wavelength modulated Raman spectroscopy in fiber-probe-based tissue analysis. Journal of Biomedical Optics, 2012, 17, 0770061.	2.6	19
81	Fluorescence Suppression Using Modulated Wavelength Raman Spectroscopy for Tissue and Cell Analysis. , 2012, , .		0
82	Picoliter Rheology of Gaseous Media Using a Rotating Optically Trapped Birefringent Microparticle. Analytical Chemistry, 2011, 83, 8855-8858.	6.5	43
83	Far field subwavelength focusing using optical eigenmodes. Applied Physics Letters, 2011, 98, .	3.3	65
84	Modulated Raman spectroscopy for enhanced identification of bladder tumor cells in urine samples. Journal of Biomedical Optics, 2011, 16, 037002.	2.6	57
85	Optical Eigenmodes; exploiting the quadratic nature of the light-matter interaction. Optics Express, 2011, 19, 933.	3.4	77
86	Numerical investigation of passive optical sorting of plasmon nanoparticles. Optics Express, 2011, 19, 13922.	3.4	12
87	Enhanced bioanalyte detection in waveguide confined Raman spectroscopy using wavelength modulation. Journal of Biophotonics, 2011, 4, 514-518.	2.3	20
88	Optical eigenmode imaging. Physical Review A, 2011, 84, .	2.5	34
89	Observation and simulation of an optically driven micromotor. Journal of Optics (United Kingdom), 2011, 13, 044018.	2.2	29
90	Enhanced two-point resolution using optical eigenmode optimized pupil functions. Journal of Optics (United Kingdom), 2011, 13, 105707.	2.2	33

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91	Optical sculpting: trapping through disorder and transfer of orbital angular momentum. Proceedings of SPIE, 2011, , .	0.8	0
92	Optical eigenmodes; spin and angular momentum. Journal of Optics (United Kingdom), 2011, 13, 064009.	2.2	5
93	Passive optical sorting of plasmon nanoparticles: Numerical investigation of optimal illumination. , 2011, , .		0
94	Selective and optimal illumination of nano-photonic structures using optical eigenmodes. , 2011, , .		0
95	SHAPING THE FUTURE OF NANOBIPHOTONICS. , 2011, , .		0
96	Optimal focusing In Situ: new routes for optical trapping and Biophotonics. , 2011, , .		0
97	Optical Sculpting: trapping through disorder. , 2011, , .		0
98	Fluorescence-free biochemical characterization of cells using modulated Raman spectroscopy. Proceedings of SPIE, 2010, , .	0.8	0
99	Optical Sculpting: Shaping the Future of Biophotonic. , 2010, , .		0
100	Light beats the spread: "non-diffracting" beams. Laser and Photonics Reviews, 2010, 4, 529-547.	8.7	134
101	In situ wavefront correction and its application to micromanipulation. Nature Photonics, 2010, 4, 388-394.	31.4	390
102	Advanced Studies of "Non-Diffracting" Light Fields. , 2010, , .		0
103	Optical forces near a nanoantenna. Journal of Nanophotonics, 2010, 4, 041570.	1.0	59
104	Modulated Raman spectroscopy technique for real-time fluorescence rejection. , 2010, , .		1
105	Fluorescence-Free Biochemical Characterization of Cells Using Modulated Raman Spectroscopy. , 2010, , .		0
106	Determination of optical forces in the proximity of a nanoantenna. Proceedings of SPIE, 2010, , .	0.8	0
107	In situ wavefront optimization: towards the ideal performance of a biophotonics system. Proceedings of SPIE, 2010, , .	0.8	0
108	Effect of pulse temporal shape on optical trapping and impulse transfer using ultrashort pulsed lasers. Optics Express, 2010, 18, 7554.	3.4	53

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109	Optimal algorithm for fluorescence suppression of modulated Raman spectroscopy. Optics Express, 2010, 18, 11382.	3.4	79
110	Optical path clearing and enhanced transmission through colloidal suspensions. Optics Express, 2010, 18, 17130.	3.4	48
111	Online Fluorescence Suppression in Modulated Raman Spectroscopy. Analytical Chemistry, 2010, 82, 738-745.	6.5	106
112	Fluorescence background suppression in Raman spectroscopy. , 2010, , .		1
113	Optical Sculpting: Changing The Shape of Micromanipulation. , 2010, , .		0
114	Optical "snowblowing" of microparticles and cells in a microfluidic environment using Airy and parabolic wavepackets. , 2009, , .		1
115	Revisiting transverse optical binding. , 2009, , .		4
116	Accelerating vortices in Airy beams. Proceedings of SPIE, 2009, , .	0.8	31
117	Optical detection and grading of lung neoplasia by Raman microspectroscopy. International Journal of Cancer, 2009, 124, 376-380.	5.1	29
118	In-fiber common-path optical coherence tomography using a conical-tip fiber. Optics Express, 2009, 17, 2375.	3.4	109
119	Propagation characteristics of Airy beams: dependence upon spatial coherence and wavelength. Optics Express, 2009, 17, 13236.	3.4	103
120	Supercontinuum Airy beams. , 2009, , .		3
121	Spin and angular momentum operators and their conservation. Journal of Optics, 2009, 11, 094005.	1.5	16
122	Photons as momentum-energy eigenmodes. , 2009, , .		0
123	Optically mediated particle clearing using Airy wavepackets. Nature Photonics, 2008, 2, 675-678.	31.4	1,067
124	Optical manipulation of nanoparticles: a review. Journal of Nanophotonics, 2008, 2, 021875.	1.0	407
125	Simulated holographic three-dimensional intensity shaping of evanescent-wave fields. Journal of the Optical Society of America B: Optical Physics, 2008, 25, 849.	2.1	10
126	Optical deflection and sorting of microparticles in a near-field optical geometry. Optics Express, 2008, 16, 3712.	3.4	105

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127	Optical vortex trap for resonant confinement of metal nanoparticles. Optics Express, 2008, 16, 4991.	3.4	213
128	Optical micromanipulation using supercontinuum Laguerre-Gaussian and Gaussian beams. Optics Express, 2008, 16, 10117.	3.4	28
129	Guided neuronal growth using optical line traps. Optics Express, 2008, 16, 10507.	3.4	50
130	Optical trapping using ultrashort 12.9fs pulses. , 2008, , .		4
131	Early identification of cervical neoplasia with Raman spectroscopy and advanced methods for biomedical applications. , 2008, , .		0
132	Measurement of the Restoring Forces Acting on Two Optically Bound Particles from Normal Mode Correlations. Physical Review Letters, 2007, 98, 068102.	7.8	50
133	Holographic 3D intensity shaping of evanescent waves. , 2007, , .		1
134	The resolution of optical traps created by Light Induced Dielectrophoresis (LIDEP). Optics Express, 2007, 15, 12619.	3.4	73
135	Fluorescence suppression within Raman spectroscopy using annular beam excitation. Applied Physics Letters, 2007, 91, 023903.	3.3	15
136	Fluorescence spectroscopy of an in vitro model of human cervical precancer identifies neoplastic phenotype. International Journal of Cancer, 2007, 120, 1964-1970.	5.1	6
137	Early detection of cervical neoplasia by Raman spectroscopy. International Journal of Cancer, 2007, 121, 2723-2728.	5.1	150
138	Dual beam fibre trap for Raman micro-spectroscopy of single cells. Optics Express, 2006, 14, 5779.	3.4	172
139	Optical impedance of metallic nano-structures. Optics Express, 2006, 14, 7709.	3.4	14
140	Structural characterization of shock-affected sapphire. Applied Physics A: Materials Science and Processing, 2006, 86, 197-200.	2.3	21
141	Carrier heating in semiconductor optical amplifier-based Sagnac-type all-optical switches. Semiconductor Science and Technology, 2006, 21, 1703-1708.	2.0	5
142	Size resolution with light-induced dielectrophoresis (LIDEP). , 2006, 6326, 303.		4
143	Spin relaxation and all-optical polarisation switching in GaInNAs multiple quantum wells. , 2006, , .		2
144	Room temperature electron spin relaxation in GaInNAs multiple quantum wells at 1.31 μ m. Applied Physics Letters, 2006, 89, 211122.	3.3	9

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145	Intraband Carrier Dynamics In Semiconductor Optical Amplifier-Based Switch. AIP Conference Proceedings, 2005, , .	0.4	0
146	Dual lattice photonic-crystal beam splitters. Applied Physics Letters, 2005, 86, 211106.	3.3	26
147	Spatial dependence of gain nonlinearities in InGaAs semiconductor optical amplifier. Applied Physics Letters, 2005, 87, 121108.	3.3	1
148	Wavelet transforms for optical pulse analysis. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 2890.	1.5	3
149	Interferometric Hetero-Detector Phase Measurement. Optical and Quantum Electronics, 2004, 36, 431-442.	3.3	1
150	Planar photonic crystal polarization splitter. Optics Letters, 2004, 29, 1620.	3.3	75
151	Beam steering in planar-photonic crystals: from superprism to supercollimator. Journal of Lightwave Technology, 2003, 21, 561-566.	4.6	138
152	Dispersion-induced ultrafast pulse reshaping in 1.55- μm InGaAs-InGaAsP optical amplifiers. IEEE Journal of Quantum Electronics, 2003, 39, 1388-1393.	1.9	6
153	Low-threshold, multi-gigahertz repetition-rate femtosecond Ti:sapphire laser. Electronics Letters, 2003, 39, 1820.	1.0	4
154	Polarization switching and induced birefringence in InGaAsP multiple quantum wells at 1.5 μm . Journal of Applied Physics, 2002, 91, 4090-4094.	2.5	13
155	Superprism phenomena in planar photonic crystals. IEEE Journal of Quantum Electronics, 2002, 38, 915-918.	1.9	109
156	Modular method for calculation of transmission and reflection in multilayered structures. Applied Optics, 2001, 40, 6670.	2.1	10
157	Exciton saturation in GaAs multiple quantum wells at room temperature. Journal of Applied Physics, 1999, 86, 3734-3744.	2.5	17
158	Preparation of optical quality ZnCdTe thin films by vacuum evaporation. Applied Optics, 1998, 37, 2681.	2.1	9
159	Dynamics of optical nonlinearities induced by strong light illumination in CdS nanocrystallites. Journal of Applied Physics, 1997, 81, 3586-3591.	2.5	20
160	Tunable optical nonlinearities in Cd $_{1-x}$ Zn $_x$ Te ternary alloys. Journal of Applied Physics, 1997, 82, 1355-1358.	2.5	9
161	Exact solution for excitons in intense laser fields. Journal of Luminescence, 1997, 72-74, 802-803.	3.1	8