Miles J Padgett

List of Publications by Citations

463 papers	34,952 citations	94 h-index	176 g-index
582 ext. papers	43,480 ext. citations	5.4 avg, IF	7.63 L-index

#	Paper	IF	Citations
463	Orbital angular momentum: origins, behavior and applications. *Advances in Optics and Photonics*, **2011**, 3, 161	16.7	1687
462	Free-space information transfer using light beams carrying orbital angular momentum. *Optics Express*, **2004**, 12, 5448-56	3.3	1631
461	Tweezers with a twist. *Nature Photonics*, **2011**, 5, 343-348	33.9	1159
460	Mechanical equivalence of spin and orbital angular momentum of light: an optical spanner. *Optics Letters*, **1997**, 22, 52-4	3	784
459	Measuring the orbital angular momentum of a single photon. *Physical Review Letters*, **2002**, 88, 257901	7.4	688
458	Advances in optical angular momentum. *Laser and Photonics Reviews*, **2008**, 2, 299-313	8.3	627
457	IV The Orbital Angular Momentum of Light. *Progress in Optics*, **1999**, 39, 291-372	3.4	625
456	High-capacity millimetre-wave communications with orbital angular momentum multiplexing. *Nature Communications*, **2014**, 5, 4876	17.4	623
455	Intrinsic and extrinsic nature of the orbital angular momentum of a light beam. *Physical Review Letters*, **2002**, 88, 053601	7.4	596
454	Efficient sorting of orbital angular momentum states of light. *Physical Review Letters*, **2010**, 105, 153601	7.4	573
453	Roadmap on structured light. *Journal of Optics (United Kingdom)*, **2017**, 19, 013001	1.7	518
452	Detection of a spinning object using light's orbital angular momentum. *Science*, **2013**, 341, 537-40	33.3	512
451	3D computational imaging with single-pixel detectors. *Science*, **2013**, 340, 844-7	33.3	488
450	Optical Angular Momentum **2003**,		456
449	Light□ Orbital Angular Momentum. *Physics Today*, **2004**, 57, 35-40	0.9	427
448	Chapter 5 Singular Optics: Optical Vortices and Polarization Singularities. *Progress in Optics*, **2009**, 53, 293-363	3.4	425
447	Experimental high-dimensional two-photon entanglement and violations of generalized Bell inequalities. *Nature Physics*, **2011**, 7, 677-680	16.2	408

446	Quantum correlations in optical angle-orbital angular momentum variables. *Science*, **2010**, 329, 662-5	33.3	367
445	Orbital angular momentum 25 years on [Invited]. *Optics Express*, **2017**, 25, 11265-11274	3.3	356
444	High-dimensional quantum cryptography with twisted light. *New Journal of Physics*, **2015**, 17, 033033	2.9	335
443	Generation of a beam with a dark focus surrounded by regions of higher intensity: the optical bottle beam. *Optics Letters*, **2000**, 25, 191-3	3	320
442	100 Tbit/s free-space data link enabled by three-dimensional multiplexing of orbital angular momentum, polarization, and wavelength. *Optics Letters*, **2014**, 39, 197-200	3	309
441	The generation of free-space Laguerre-Gaussian modes at millimetre-wave frequencies by use of a spiral phaseplate. *Optics Communications*, **1996**, 127, 183-188	2	295
440	Lights, action: Optical tweezers. *Contemporary Physics*, **2002**, 43, 241-258	3.3	286
439	Isolated optical vortex knots. *Nature Physics*, **2010**, 6, 118-121	16.2	281
438	Second-harmonic generation and the orbital angular momentum of light. *Physical Review A*, **1996**, 54, R3742-R3745	2.6	269
437	Single-pixel three-dimensional imaging with time-based depth resolution. *Nature Communications*, **2016**, 7, 12010	17.4	261
436	Poincar□sphere equivalent for light beams containing orbital angular momentum. *Optics Letters*, **1999**, 24, 430-2	3	258
435	Observation of the vortex structure of a non-integer vortex beam. *New Journal of Physics*, **2004**, 6, 71-71	2.9	254
434	Principles and prospects for single-pixel imaging. *Nature Photonics*, **2019**, 13, 13-20	33.9	232
433	Optical ferris wheel for ultracold atoms. *Optics Express*, **2007**, 15, 8619-25	3.3	229
432	Interferometric methods to measure orbital and spin, or the total angular momentum of a single photon. *Physical Review Letters*, **2004**, 92, 013601	7.4	225
431	Imaging with a small number of photons. *Nature Communications*, **2015**, 6, 5913	17.4	224
430	Rotational Frequency Shift of a Light Beam. *Physical Review Letters*, **1998**, 81, 4828-4830	7.4	223
429	The Poynting vector in Laguerre-Gaussian laser modes. *Optics Communications*, **1995**, 121, 36-40	2	223

428	Noninvasive, near-field terahertz imaging of hidden objects using a single-pixel detector. *Science Advances*, **2016**, 2, e1600190	14.3	217
427	Observation of the transfer of the local angular momentum density of a multiringed light beam to an optically trapped particle. *Physical Review Letters*, **2003**, 91, 093602	7.4	216
426	Normalized ghost imaging. *Optics Express*, **2012**, 20, 16892	3.3	213
425	The production of multiringed Laguerre□Gaussian modes by computer-generated holograms. *Journal of Modern Optics*, **1998**, 45, 1231-1237	1.1	213
424	Second-harmonic generation and the conservation of orbital angular momentum with high-order Laguerre-Gaussian modes. *Physical Review A*, **1997**, 56, 4193-4196	2.6	209
423	Influence of atmospheric turbulence on optical communications using orbital angular momentum for encoding. *Optics Express*, **2012**, 20, 13195-200	3.3	206
422	Single-pixel infrared and visible microscope. *Optica*, **2014**, 1, 285	8.6	200
421	Higher-dimensional orbital-angular-momentum-based quantum key distribution with mutually unbiased bases. *Physical Review A*, **2013**, 88,	2.6	193
420	Optical tweezers and optical spanners with Laguerre□Gaussian modes. *Journal of Modern Optics*, **1996**, 43, 2485-2491	1.1	192
419	Optical trapping and binding. *Reports on Progress in Physics*, **2013**, 76, 026401	14.4	191
418	Measurement of the Rotational Frequency Shift Imparted to a Rotating Light Beam Possessing Orbital Angular Momentum. *Physical Review Letters*, **1998**, 80, 3217-3219	7.4	191
417	An experiment to observe the intensity and phase structure of Laguerre□Gaussian laser modes. *American Journal of Physics*, **1996**, 64, 77-82	0.7	176
416	Simultaneous real-time visible and infrared video with single-pixel detectors. *Scientific Reports*, **2015**, 5, 10669	4.9	169
415	Vortex knots in light. *New Journal of Physics*, **2005**, 7, 55-55	2.9	168
414	Holographic optical tweezers and their relevance to lab on chip devices. *Lab on A Chip*, **2011**, 11, 1196-205	5.2	166
413	The Poynting vector in Laguerre□Gaussian beams and the interpretation of their angular momentum density. *Optics Communications*, **2000**, 184, 67-71	2	165
412	Refractive elements for the measurement of the orbital angular momentum of a single photon. *Optics Express*, **2012**, 20, 2110-5	3.3	161
411	Laser beams: knotted threads of darkness. *Nature*, **2004**, 432, 165	50.4	160

410	Light beams with fractional orbital angular momentum and their vortex structure. *Optics Express*, **2008**, 16, 993-1006	3.3	159
409	Uncertainty principle for angular position and angular momentum. *New Journal of Physics*, **2004**, 6, 103-103	2.9	158
408	Light with a twist in its tail. *Contemporary Physics*, **2000**, 41, 275-285	3.3	158
407	Fast full-color computational imaging with single-pixel detectors. *Optics Express*, **2013**, 21, 23068-74	3.3	156
406	Divergence of an orbital-angular-momentum-carrying beam upon propagation. *New Journal of Physics*, **2015**, 17, 023011	2.9	154
405	Atmospheric turbulence effects on the performance of a free space optical link employing orbital angular momentum multiplexing. *Optics Letters*, **2013**, 38, 4062-5	3	154
404	3D manipulation of particles into crystal structures using holographic optical tweezers. *Optics Express*, **2004**, 12, 220-6	3.3	153
403	Imaging high-dimensional spatial entanglement with a camera. *Nature Communications*, **2012**, 3, 984	17.4	150
402	Measuring the accuracy of particle position and force in optical tweezers using high-speed video microscopy. *Optics Express*, **2008**, 16, 14561-70	3.3	150
401	Two-photon entanglement of orbital angular momentum states. *Physical Review A*, **2002**, 65,	2.6	149
400	An optically driven pump for microfluidics. *Lab on A Chip*, **2006**, 6, 735-9	7.2	148
399	Direct measurement of a 27-dimensional orbital-angular-momentum state vector. *Nature Communications*, **2014**, 5, 3115	17.4	145
398	Influence of atmospheric turbulence on states of light carrying orbital angular momentum. *Optics Letters*, **2012**, 37, 3735-7	3	139
397	Holographic ghost imaging and the violation of a Bell inequality. *Physical Review Letters*, **2009**, 103, 083602	7.4	134
396	Topology of optical vortex lines formed by the interference of three, four, and five plane waves. *Optics Express*, **2006**, 14, 3039-44	3.3	133
395	Performance of a cylindrical lens mode converter for producing Laguerre□Gaussian laser modes. *Optics Communications*, **1999**, 159, 13-18	2	128
394	Assembly of 3-dimensional structures using programmable holographic optical tweezers. *Optics Express*, **2004**, 12, 5475-80	3.3	123
393	Adaptive foveated single-pixel imaging with dynamic supersampling. *Science Advances*, **2017**, 3, e1601782	14.3	122

392	Violation of a Bell inequality in two-dimensional orbital angular momentum state-spaces. *Optics Express*, **2009**, 17, 8287-93	3.3	120
391	Spin-orbit hybrid entanglement of photons and quantum contextuality. *Physical Review A*, **2010**, 82,	2.6	119
390	Development of a 3D printer using scanning projection stereolithography. *Scientific Reports*, **2015**, 5, 9875	4.9	117
389	A Russian Dolls ordering of the Hadamard basis for compressive single-pixel imaging. *Scientific Reports*, **2017**, 7, 3464	4.9	117
388	Interface between path and orbital angular momentum entanglement for high-dimensional photonic quantum information. *Nature Communications*, **2014**, 5, 4502	17.4	116
387	H2S fluxes from Mt. Etna, Stromboli, and Vulcano (Italy) and implications for the sulfur budget at volcanoes. *Geochimica Et Cosmochimica Acta*, **2005**, 69, 1861-1871	5.5	116
386	Real-time imaging of methane gas leaks using a single-pixel camera. *Optics Express*, **2017**, 25, 2998-3005	3.3	111
385	Gaussian beams with very high orbital angular momentum. *Optics Communications*, **1997**, 144, 210-213	2	111
384	Fourier relationship between angular position and optical orbital angular momentum. *Optics Express*, **2006**, 14, 9071-6	3.3	109
383	Improving the signal-to-noise ratio of single-pixel imaging using digital microscanning. *Optics Express*, **2016**, 24, 10476-85	3.3	107
382	Deep learning for real-time single-pixel video. *Scientific Reports*, **2018**, 8, 2369	4.9	106
381	Interactive approach to optical tweezers control. *Applied Optics*, **2006**, 45, 897-903	1.7	106
380	Comparison of Faxén's correction for a microsphere translating or rotating near a surface. *Physical Review E*, **2009**, 79, 026301	2.4	104
379	Interactive application in holographic optical tweezers of a multi-plane Gerchberg-Saxton algorithm for three-dimensional light shaping. *Optics Express*, **2004**, 12, 1665-70	3.3	102
378	Holographic generation and orbital angular momentum of high-order Mathieu beams. *Journal of Optics B: Quantum and Semiclassical Optics*, **2002**, 4, S52-S57		102
377	Microrheology with optical tweezers. *Lab on A Chip*, **2009**, 9, 2568-75	7.2	100
376	An introduction to ghost imaging: quantum and classical. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2017**, 375,	3	99
375	Three-dimensional optical confinement of micron-sized metal particles and the decoupling of the spin and orbital angular momentum within an optical spanner. *Optics Communications*, **2000**, 185, 139-143	2	99

374	Optically controlled three-dimensional rotation of microscopic objects. *Applied Physics Letters*, **2003**, 82, 829-831	3.4	97
373	Direct measurement of the skew angle of the Poynting vector in a helically phased beam. *Optics Express*, **2006**, 14, 11919-24	3.3	96
372	Shape-induced force fields in optical trapping. *Nature Photonics*, **2014**, 8, 400-405	33.9	95
371	Adaptive optics compensation of multiple orbital angular momentum beams propagating through emulated atmospheric turbulence. *Optics Letters*, **2014**, 39, 2845-8	3	95
370	1000 fps computational ghost imaging using LED-based structured illumination. *Optics Express*, **2018**, 26, 2427-2434	3.3	94
369	Light-emitting diodes as measurement devices for femtosecond laser pulses. *Optics Letters*, **1997**, 22, 233-5	3	94
368	The generation of Bessel beams at millimetre-wave frequencies by use of an axicon. *Optics Communications*, **1999**, 170, 213-215	2	94
367	Angular diffraction. *New Journal of Physics*, **2008**, 10, 103013	2.9	92
366	Rotational control within optical tweezers by use of a rotating aperture. *Optics Letters*, **2002**, 27, 743-5	3	91
365	Optics. Spatially structured photons that travel in free space slower than the speed of light. *Science* , **2015**, 347, 857-60	33.3	90
364	Self-healing of quantum entanglement after an obstruction. *Nature Communications*, **2014**, 5, 3248	17.4	90
363	Axial and lateral trapping efficiency of Laguerre-Gaussian modes in inverted optical tweezers. *Optics Communications*, **2001**, 193, 45-50	2	90
362	An acoustic spanner and its associated rotational Doppler shift. *New Journal of Physics*, **2008**, 10, 013018	2.9	89
361	Polarization singularities in 2D and 3D speckle fields. *Physical Review Letters*, **2008**, 100, 203902	7.4	89
360	3D interferometric optical tweezers using a single spatial light modulator. *Optics Express*, **2005**, 13, 3777-386	3.3	88
359	Optical tweezers with increased axial trapping efficiency. *Journal of Modern Optics*, **1998**, 45, 1943-1949	1.1	88
358	EPR-based ghost imaging using a single-photon-sensitive camera. *New Journal of Physics*, **2013**, 15, 073032	2.9	87
357	Free-space propagation of high-dimensional structured optical fields in an urban environment. *Science Advances*, **2017**, 3, e1700552	14.3	86

356	Transfer of orbital angular momentum from a stressed fiber-optic waveguide to a light beam. *Applied Optics*, **1998**, 37, 469-72	1.7	85
355	Parametric down-conversion for light beams possessing orbital angular momentum. *Physical Review A*, **1999**, 59, 3950-3952	2.6	84
354	Compressed sensing with near-field THz radiation. *Optica*, **2017**, 4, 989	8.6	82
353	Entangled Bessel-Gaussian beams. *Optics Express*, **2012**, 20, 23589-97	3.3	82
352	Observation of the rotational Doppler shift of a white-light, orbital-angular-momentum-carrying beam backscattered from a rotating body. *Optica*, **2014**, 1, 1	8.6	80
351	High throughput diffractive multi-beam femtosecond laser processing using a spatial light modulator. *Applied Surface Science*, **2008**, 255, 2284-2289	6.7	80
350	Rotary photon drag enhanced by a slow-light medium. *Science*, **2011**, 333, 65-7	33.3	79
349	Single-pixel imaging 12 years on: a review. *Optics Express*, **2020**, 28, 28190-28208	3.3	79
348	Imaging with quantum states of light. *Nature Reviews Physics*, **2019**, 1, 367-380	23.6	78
347	On the natures of the spin and orbital parts of optical angular momentum. *Journal of Optics (United Kingdom)*, **2016**, 18, 064004	1.7	78
346	An improved algorithm for locating a gas source using inverse methods. *Atmospheric Environment*, **2007**, 41, 1128-1134	5.3	77
345	Generation of achromatic Bessel beams using a compensated spatial light modulator. *Optics Express*, **2006**, 14, 5581-7	3.3	75
344	Photon-sparse microscopy: visible light imaging using infrared illumination. *Optica*, **2015**, 2, 1049	8.6	74
343	Speeding up liquid crystal SLMs using overdrive with phase change reduction. *Optics Express*, **2013**, 21, 1779-97	3.3	74
342	Measurement of the light orbital angular momentum spectrum using an optical geometric transformation. *Journal of Optics (United Kingdom)*, **2011**, 13, 064006	1.7	74
341	Ghost Imaging Using Optical Correlations. *Laser and Photonics Reviews*, **2018**, 12, 1700143	8.3	74
340	Observation of chromatic effects near a white-light vortex. *New Journal of Physics*, **2003**, 5, 154-154	2.9	73
339	Fractality of light's darkness. *Physical Review Letters*, **2008**, 100, 053902	7.4	72

338	Quantum-inspired computational imaging. *Science*, **2018**, 361,	33.3	71
337	Exploring the quantum nature of the radial degree of freedom of a photon via Hong-Ou-Mandel interference. *Physical Review A*, **2014**, 89,	2.6	70
336	Particle tracking stereomicroscopy in optical tweezers: control of trap shape. *Optics Express*, **2010**, 18, 11785-90	3.3	70
335	Comparison of a high-speed camera and a quadrant detector for measuring displacements in optical tweezers. *Journal of Optics*, **2007**, 9, S264-S266		69
334	Aberration correction in holographic optical tweezers. *Optics Express*, **2006**, 14, 4169-74	3.3	68
333	Creating permanent 3D arrangements of isolated cells using holographic optical tweezers. *Lab on A Chip*, **2005**, 5, 1224-8	7.2	67
332	Optical activity in twisted solid-core photonic crystal fibers. *Physical Review Letters*, **2013**, 110, 143903	7.4	66
331	Orbital angular momentum exchange in cylindrical-lens mode converters. *Journal of Optics B: Quantum and Semiclassical Optics*, **2002**, 4, S17-S19		66
330	Increasing the dimension in high-dimensional two-photon orbital angular momentum entanglement. *Physical Review A*, **2012**, 86,	2.6	65
329	High-speed spatial control of the intensity, phase and polarisation of vector beams using a digital micro-mirror device. *Optics Express*, **2016**, 24, 29269-29282	3.3	65
328	Spiniform phase-encoded metagratings entangling arbitrary rational-order orbital angular momentum. *Light: Science and Applications*, **2018**, 7, 17156	16.7	64
327	Precision assembly of complex cellular microenvironments using holographic optical tweezers. *Scientific Reports*, **2015**, 5, 8577	4.9	64
326	Characterization of high-dimensional entangled systems via mutually unbiased measurements. *Physical Review Letters*, **2013**, 110, 143601	7.4	64
325	Real-time measurement of volcanic H2S and SO2 concentrations by UV spectroscopy. *Geophysical Research Letters*, **2003**, 30,	4.9	64
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323	R□ed Tweezers□Fast, customisable hologram generation for optical tweezers. *Computer Physics Communications*, **2014**, 185, 268-273	4.2	60
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321	Increasing trap stiffness with position clamping in holographic optical tweezers. *Optics Express*, **2009**, 17, 22718-25	3.3	60

320	Three-dimensional parallel holographic micropatterning using a spatial light modulator. *Optics Express*, **2008**, 16, 15942-8	3.3	59
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318	Touching the microworld with force-feedback optical tweezers. *Optics Express*, **2009**, 17, 10259-64	3.3	57
317	Defining the trapping limits of holographical optical tweezers. *Journal of Modern Optics*, **2004**, 51, 409-414	1.1	57
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315	Optical orbital angular momentum. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2017**, 375,	3	56
314	Efficient measurement of an optical orbital-angular-momentum spectrum comprising more than 50 states. *New Journal of Physics*, **2013**, 15, 013024	2.9	56
313	Entanglement of arbitrary superpositions of modes within two-dimensional orbital angular momentum state spaces. *Physical Review A*, **2010**, 81,	2.6	54
312	An optically actuated surface scanning probe. *Optics Express*, **2012**, 20, 29679-93	3.3	54
311	Multipoint holographic optical velocimetry in microfluidic systems. *Physical Review Letters*, **2006**, 96, 134502	7.4	54
310	Comparison of nematic liquid-crystal and DMD based spatial light modulation in complex photonics. *Optics Express*, **2017**, 25, 29874-29884	3.3	53
309	An optical trapped microhand for manipulating micron-sized objects. *Optics Express*, **2006**, 14, 12497-502	3.3	53
308	Application of laser spectroscopy for measurement of exhaled ethane in patients with lung cancer. *Respiratory Medicine*, **2006**, 100, 300-6	4.6	53
307	Sharing a Common Origin Between the Rotational and Linear Doppler Effects. *Laser and Photonics Reviews*, **2017**, 11, 1700183	8.3	52
306	Measuring the orbital angular momentum spectrum of an electron beam. *Nature Communications*, **2017**, 8, 15536	17.4	51
305	Measuring storage and loss moduli using optical tweezers: broadband microrheology. *Physical Review E*, **2010**, 81, 026308	2.4	51
304	Dove prisms and polarized light. *Journal of Modern Optics*, **1999**, 46, 175-179	1.1	51
303	Matrix formulation for the propagation of light beams with orbital and spin angular momenta. *Physical Review E*, **1999**, 60, 7497-503	2.4	51

302	Concepts in quantum state tomography and classical implementation with intense light: a tutorial. *Advances in Optics and Photonics*, **2019**, 11, 67	16.7	51
301	Parametric resonance of optically trapped aerosols. *Physical Review Letters*, **2007**, 99, 010601	7.4	50
300	Measuring orbital angular momentum superpositions of light by mode transformation. *Optics Letters*, **2011**, 36, 1863-5	3	49
299	Mathieu beams as versatile light moulds for 3D micro particle assemblies. *Optics Express*, **2010**, 18, 26084-91	3.3	49
298	Efficient sorting of Bessel beams. *Optics Express*, **2013**, 21, 165-71	3.3	48
297	An SLM-based Shack-Hartmann wavefront sensor for aberration correction in optical tweezers. *Journal of Optics (United Kingdom)*, **2010**, 12, 124004	1.7	48
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294	Single-pulse, Fourier-transform spectrometer having no moving parts. *Applied Optics*, **1994**, 33, 6035-40	1.7	45
293	Optical tweezers: wideband microrheology. *Journal of Optics (United Kingdom)*, **2011**, 13, 044022	1.7	44
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283	Hands-on with optical tweezers: a multitouch interface for holographic optical trapping. *Optics Express*, **2009**, 17, 3595-602	3.3	39
282	Assembly and force measurement with SPM-like probes in holographic optical tweezers. *New Journal of Physics*, **2009**, 11, 023012	2.9	38
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280	Imaging through noise with quantum illumination. *Science Advances*, **2020**, 6, eaay2652	14.3	37
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276	An intensity-stabilised He-Ne laser for measuring small magneto-optic Kerr rotations from thin ferromagnetic films. *Journal of Physics E: Scientific Instruments*, **1989**, 22, 308-312		36
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273	Holographic assembly workstation for optical manipulation. *Journal of Optics*, **2008**, 10, 044009		35
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271	Force sensing with a shaped dielectric micro-tool. *Europhysics Letters*, **2012**, 99, 58004	1.6	34
270	Characteristics of 5-aminolaevulinic acid-induced protoporphyrin IX fluorescence in human skin in vivo. *Photodermatology Photoimmunology and Photomedicine*, **2006**, 22, 105-10	2.4	34
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267	Independent polarisation control of multiple optical traps. *Optics Express*, **2008**, 16, 15897-902	3.3	32

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265	Two-photon optics of Bessel-Gaussian modes. *Physical Review A*, **2013**, 88,	2.6	31
264	Constructing 3D crystal templates for photonic band gap materials using holographic optical tweezers. *Optics Express*, **2008**, 16, 13005-15	3.3	31
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262	Optically Induced Forces Imposed in an Optical Funnel on a Stream of Particles in Air or Vacuum. *Physical Review Applied*, **2015**, 4,	4.3	30
261	The influence of non-imaging detector design on heralded ghost-imaging and ghost-diffraction examined using a triggered ICCD camera. *Optics Express*, **2013**, 21, 30460-73	3.3	30
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