Lorenzo Marrucci

List of Publications by Citations

113 papers	8,536 citations	45 h-index	91 g-index
120 ext. papers	10,274 ext. citations	7.8 avg, IF	6.09 L-index

#	Paper	IF	Citations
113	Optical spin-to-orbital angular momentum conversion in inhomogeneous anisotropic media. *Physical Review Letters*, **2006**, 96, 163905	7.4	1220
112	Roadmap on structured light. *Journal of Optics (United Kingdom)*, **2017**, 19, 013001	1.7	518
111	Controlled generation of higher-order Poincar□sphere beams from a laser. *Nature Photonics*, **2016**, 10, 327-332	33.9	332
110	Spin-to-orbital conversion of the angular momentum of light and its classical and quantum applications. *Journal of Optics (United Kingdom)*, **2011**, 13, 064001	1.7	309
109	4 □20 Gbit/s mode division multiplexing over free space using vector modes and a q-plate mode (de)multiplexer. *Optics Letters*, **2015**, 40, 1980-3	3	266
108	Polarization pattern of vector vortex beams generated by q-plates with different topological charges. *Applied Optics*, **2012**, 51, C1-6	1.7	261
107	Free-space quantum key distribution by rotation-invariant twisted photons. *Physical Review Letters*, **2014**, 113, 060503	7.4	251
106	Tunable liquid crystal q-plates with arbitrary topological charge. *Optics Express*, **2011**, 19, 4085-90	3.3	242
105	Persistent currents and quantized vortices in a polariton superfluid. *Nature Physics*, **2010**, 6, 527-533	16.2	223
104	Complete experimental toolbox for alignment-free quantum communication. *Nature Communications*, **2012**, 3, 961	17.4	205
103	Pancharatnam-Berry phase optical elements for wave front shaping in the visible domain: Switchable helical mode generation. *Applied Physics Letters*, **2006**, 88, 221102	3.4	203
102	Optics. Observation of optical polarization M□bius strips. *Science*, **2015**, 347, 964-6	33.3	202
101	Hypergeometric-Gaussian modes. *Optics Letters*, **2007**, 32, 3053-5	3	196
100	Photonic polarization gears for ultra-sensitive angular measurements. *Nature Communications*, **2013**, 4, 2432	17.4	191
99	Light-induced spiral mass transport in azo-polymer films under vortex-beam illumination. *Nature Communications*, **2012**, 3, 989	17.4	176
98	Efficient generation and sorting of orbital angular momentum eigenmodes of light by thermally tuned q-plates. *Applied Physics Letters*, **2009**, 94, 231124	3.4	160
97	Optimal quantum cloning of orbital angular momentum photon qubits through Hong□Ou□Mandel coalescence. *Nature Photonics*, **2009**, 3, 720-723	33.9	158

96	Storage and retrieval of vector beams of light in a multiple-degree-of-freedom quantum memory. *Nature Communications*, **2015**, 6, 7706	17.4	155
95	Detection of Zak phases and topological invariants in a chiral quantum walk of twisted photons. *Nature Communications*, **2017**, 8, 15516	17.4	148
94	Generation and dynamics of optical beams with polarization singularities. *Optics Express*, **2013**, 21, 8815-20	3.9	130
93	Q-plate enabled spectrally diverse orbital-angular-momentum conversion for stimulated emission depletion microscopy. *Optica*, **2015**, 2, 900	8.6	114
92	Quantum walks and wavepacket dynamics on a lattice with twisted photons. *Science Advances*, **2015**, 1, e1500087	14.3	109
91	Photon spin-to-orbital angular momentum conversion via an electrically tunable q-plate. *Applied Physics Letters*, **2010**, 97, 241104	3.4	96
90	Statistical moments of quantum-walk dynamics reveal topological quantum transitions. *Nature Communications*, **2016**, 7, 11439	17.4	96
89	Surface-monolayer-induced bulk alignment of liquid crystals. *Physical Review Letters*, **1994**, 73, 1513-1516	7.4	92
88	Direct Femtosecond Laser Surface Structuring with Optical Vortex Beams Generated by a q-plate. *Scientific Reports*, **2015**, 5, 17929	4.9	88
87	Photoinduced molecular reorientation of absorbing liquid crystals. *Physical Review E*, **1997**, 56, 1765-1772	2.4	74
86	Laser-induced nonlinear dynamics in a nematic liquid-crystal film. *Physical Review Letters*, **1990**, 64, 1377-1380	7.4	73
85	Role of guest-host intermolecular forces in photoinduced reorientation of dyed liquid crystals. *Journal of Chemical Physics*, **1997**, 107, 9783-9793	3.9	69
84	Tunable supercontinuum light vector vortex beam generator using a q-plate. *Optics Letters*, **2013**, 38, 5083-6	3	65
83	Q-plate technology: a progress review [Invited]. *Journal of the Optical Society of America B: Optical Physics*, **2019**, 36, D70	1.7	64
82	Guiding light via geometric phases. *Nature Photonics*, **2016**, 10, 571-575	33.9	62
81	Measuring the complex orbital angular momentum spectrum and spatial mode decomposition of structured light beams. *Optica*, **2017**, 4, 1350	8.6	61
80	Directional Superficial Photofluidization for Deterministic Shaping of Complex 3D Architectures. *ACS Applied Materials & Interfaces*, **2015**, 7, 8209-17	9.5	58
79	Light propagation in a birefringent plate with topological charge. *Optics Letters*, **2009**, 34, 1225-7	3	58

78	Molecular model for light-driven spiral mass transport in azopolymer films. *Physical Review Letters*, **2013**, 110, 146102	7.4	57
77	Molecular-Field-Enhanced Optical Kerr Effect in Absorbing Liquids. *Physical Review Letters*, **1997**, 78, 38-41	7.4	57
76	Polarization control of single photon quantum orbital angular momentum states. *Optics Express*, **2009**, 17, 18745-59	3.3	55
75	Joining the quantum state of two photons into one. *Nature Photonics*, **2013**, 7, 521-526	33.9	53
74	12 mode, WDM, MIMO-free orbital angular momentum transmission. *Optics Express*, **2018**, 26, 20225-20232	3.3	53
73	Orientation of amphiphilic molecules on polar substrates. *Physical Review Letters*, **1995**, 75, 2144-2147	7.4	51
72	Q-plates as higher order polarization controllers for orbital angular momentum modes of fiber. *Optics Letters*, **2015**, 40, 1729-32	3	49
71	Polarization-controlled evolution of light transverse modes and associated Pancharatnam geometric phase in orbital angular momentum. *Physical Review A*, **2010**, 81,	2.6	48
70	The polarizing Sagnac interferometer: a tool for light orbital angular momentum sorting and spin-orbit photon processing. *Optics Express*, **2010**, 18, 27205-16	3.3	46
69	Role of dye structure in photoinduced reorientation of dye-doped liquid crystals. *Journal of Chemical Physics*, **2000**, 113, 10361-10366	3.9	44
68	Self-induced stimulated light scattering in nematic liquid crystals: Theory and experiment. *Physical Review A*, **1992**, 46, 4859-4868	2.6	44
67	Surface Structuring with Polarization-Singular Femtosecond Laser Beams Generated by a q-plate. *Scientific Reports*, **2017**, 7, 42142	4.9	43
66	Femtosecond laser surface structuring of silicon using optical vortex beams generated by a q-plate. *Applied Physics Letters*, **2014**, 104, 241604	3.4	43
65	Vortex and half-vortex dynamics in a nonlinear spinor quantum fluid. *Science Advances*, **2015**, 1, e1500807	14.3	42
64	Laser ablation of silicon induced by a femtosecond optical vortex beam. *Optics Letters*, **2015**, 40, 4611-4	3	41
63	Entangled vector vortex beams. *Physical Review A*, **2016**, 94,	2.6	41
62	Femtosecond laser surface structuring of silicon with Gaussian and optical vortex beams. *Applied Surface Science*, **2017**, 418, 565-571	6.7	40
61	Blue luminescence of SrTiO3 under intense optical excitation. *Journal of Applied Physics*, **2009**, 106, 103521	2.5	35

60	First observation of the quantized exciton-polariton field and effect of interactions on a single polariton. *Science Advances*, **2018**, 4, eaao6814	14.3	34
59	Experimental Engineering of Arbitrary Qudit States with Discrete-Time Quantum Walks. *Physical Review Letters*, **2019**, 122, 020503	7.4	34
58	Time-division multiplexing of the orbital angular momentum of light. *Optics Letters*, **2012**, 37, 127-9	3	30
57	Mechanisms of giant optical nonlinearity in light-absorbing liquid crystals: a brief primer. *Liquid Crystals Today*, **2002**, 11, 6-33	1.9	29
56	Enhanced optical nonlinearity by photoinduced molecular orientation in absorbing liquids. *Physical Review A*, **1998**, 58, 4926-4936	2.6	28
55	Topological features of vector vortex beams perturbed with uniformly polarized light. *Scientific Reports*, **2017**, 7, 40195	4.9	27
54	Test of mutually unbiased bases for six-dimensional photonic quantum systems. *Scientific Reports*, **2013**, 3, 2726	4.9	27
53	Improved focusing with hypergeometric-gaussian type-II optical modes. *Optics Express*, **2008**, 16, 21069-75	3.5	27
52	Enhanced spin orbit interaction of light in highly confining optical fibers for mode division multiplexing. *Nature Communications*, **2019**, 10, 4707	17.4	25
51	Experimental study of the molecular reorientation induced by the ordinary wave in a nematic liquid crystal film. *Liquid Crystals*, **1998**, 25, 357-362	2.3	25
50	Two-dimensional topological quantum walks in the momentum space of structured light. *Optica*, **2020**, 7, 108	8.6	22
49	Electromagnetic Confinement via Spin-Orbit Interaction in Anisotropic Dielectrics. *ACS Photonics*, **2016**, 3, 2249-2254	6.3	21
48	Direct femtosecond laser ablation of copper with an optical vortex beam. *Journal of Applied Physics*, **2014**, 116, 113102	2.5	21
47	Deterministic qubit transfer between orbital and spin angular momentum of single photons. *Optics Letters*, **2012**, 37, 172-4	3	21
46	Surface structures with unconventional patterns and shapes generated by femtosecond structured light fields. *Scientific Reports*, **2018**, 8, 13613	4.9	21
45	Resilience of hybrid optical angular momentum qubits to turbulence. *Scientific Reports*, **2015**, 5, 8424	4.9	20
44	Hardy's paradox tested in the spin-orbit Hilbert space of single photons. *Physical Review A*, **2014**, 89,	2.6	19
43	Nodal areas in coherent beams. *Optica*, **2015**, 2, 147	8.6	18

42	Shearing interferometry via geometric phase. *Optica*, **2019**, 6, 396	8.6	18
41	Simple method for the characterization of intense Laguerre-Gauss vector vortex beams. *Applied Physics Letters*, **2018**, 112, 211103	3.4	18
40	Potential-well depth at amorphous-LaAlO3/crystalline-SrTiO3 interfaces measured by optical second harmonic generation. *Applied Physics Letters*, **2014**, 104, 261603	3.4	17
39	Birth and evolution of an optical vortex. *Optics Express*, **2016**, 24, 16390-5	3.3	13
38	Interplay between diffraction and the Pancharatnam-Berry phase in inhomogeneously twisted anisotropic media. *Physical Review A*, **2017**, 95,	2.6	12
37	A versatile quantum walk resonator with bright classical light. *PLoS ONE*, **2019**, 14, e0214891	3.7	12
36	Directly measuring mean and variance of infinite-spectrum observables such as the photon orbital angular momentum. *Nature Communications*, **2015**, 6, 8606	17.4	12
35	Physics. Spinning the Doppler effect. *Science*, **2013**, 341, 464-5	33.3	12
34	Tunable Two-Photon Quantum Interference of Structured Light. *Physical Review Letters*, **2019**, 122, 013601	7.4	12
33	Optical second harmonic imaging as a diagnostic tool for monitoring epitaxial oxide thin-film growth. *Applied Surface Science*, **2015**, 327, 413-417	6.7	11
32	Light confinement via periodic modulation of the refractive index. *New Journal of Physics*, **2013**, 15, 083013	2.9	11
31	Influence of generalized focusing of few-cycle Gaussian pulses in attosecond pulse generation. *Optics Express*, **2013**, 21, 24991-9	3.3	11
30	Photoluminescence dynamics in strontium titanate. *Journal of Luminescence*, **2009**, 129, 1923-1926	3.8	11
29	Probing interfacial properties by optical second-harmonic generation. *Optics and Lasers in Engineering*, **2002**, 37, 601-610	4.6	11
28	Optical reorientation in cholesteric nematic mixtures. *Liquid Crystals*, **1993**, 14, 1431-1438	2.3	11
27	Monstar polarization singularities with elliptically-symmetric q-plates. *Optics Express*, **2017**, 25, 14935-14943	3.3	10
26	Spin-Orbit Coupled, Non-Integer OAM Fibers: Unlocking a New Eigenbasis for Transmitting 24 Uncoupled Modes **2016**,		10
25	Flat polarization-controlled cylindrical lens based on the PancharatnamBerry geometric phase. *European Journal of Physics*, **2017**, 38, 034007	0.8	9

24	Fluctuating-friction molecular motors. *Journal of Physics Condensed Matter*, **2001**, 13, 10371-10382	1.8	9
23	Symmetry Protection of Photonic Entanglement in the Interaction with a Single Nanoaperture. *Physical Review Letters*, **2018**, 121, 173901	7.4	9
22	Polar asymmetry of La(1)Al(1+)O3/SrTiO3 heterostructures probed by optical second harmonic generation. *Applied Physics Letters*, **2015**, 107, 101603	3.4	8
21	Large deuterium isotope effect in the rotational diffusion of anthraquinone dyes in liquid solution. *Journal of Chemical Physics*, **2002**, 117, 2187-2191	3.9	8
20	Liquid crystal reorientation induced by completely unpolarized light. *Physical Review E*, **1998**, 57, 3033-3037	2.4	8
19	Optical reorientation in nematic liquid crystals controlled by the laser beam shape. *Optics Communications*, **1999**, 171, 131-136	2	8
18	Vector vortex beams generated by q-plates as a versatile route to direct fs laser surface structuring. *Applied Surface Science*, **2019**, 471, 1028-1033	6.7	8
17	Bulk detection of time-dependent topological transitions in quenched chiral models. *Physical Review Research*, **2020**, 2,	3.9	7
16	Vortex stability and permanent flow in nonequilibrium polariton condensates. *Journal of Applied Physics*, **2011**, 109, 102406	2.5	6
15	Lagrangian approach to light propagation in liquid crystals. *Physical Review E*, **1995**, 52, 5053-5060	2.4	6
14	Multistability and non linear dynamics of the optical Fr□edericksz transition in homeotropically aligned nematics. *Journal De Physique II*, **1991**, 1, 543-557		5
13	Hyperentanglement in structured quantum light. *Physical Review Research*, **2020**, 2,	3.9	5
12	Electrically tunable vector vortex coronagraphs based on liquid-crystal geometric phase waveplates. *Molecular Crystals and Liquid Crystals*, **2019**, 684, 15-23	0.5	4
11	Terahertz Hyper-Raman Time-Domain Spectroscopy. *ACS Photonics*, **2019**, 6, 1515-1523	6.3	4
10	Optical vortices in antiguides. *Optics Letters*, **2013**, 38, 1618-20	3	3
9	Optical analysis of surfaces by second-harmonic generation: Possible applications to tribology. *TriboTest Journal: Tribology and Lubrication in Practice*, **2002**, 8, 329-337		2
8	Ultra-sensitive measurement of transverse displacements with linear photonic gears.. *Nature Communications*, **2022**, 13, 1080	17.4	2
7	Polarization effects in the optical reorientation of freely suspended smectic-C liquid-crystal films. *Journal of Applied Physics*, **1991**, 69, 1269-1274	2.5	1

6	Linking topological features of the Hofstadter model to optical diffraction figures. *New Journal of Physics*, **2022**, 24, 013028	2.9	1
5	Bloch–Landau–Zener dynamics induced by a synthetic field in a photonic quantum walk. *APL Photonics*, **2021**, 6, 020802	5.2	1
4	Coherent Raman spectroscopy of YBa2Cu3O7. *Optics Express*, **2008**, 16, 9054-9	3.3	0
3	Increasing the topological diversity of light with modulated Poincaré beams. *Journal of Optics (United Kingdom)*, **2021**, 23, 054002	1.7	0
2	Optical Second Harmonic Generation as a Tool for In Situ, Real-Time Monitor of Thin Film Epitaxial Growth. *Key Engineering Materials*, **2014**, 605, 223-226	0.4	
1	Spin and orbital angular momentum coupling **2021**, 177-203		