Mercedes Carrascosa

List of Publications by Citations

149 papers	2,106 citations	26 h-index	35 g-index
170 ext. papers	2,376 ext. citations	2.9 avg, IF	4.55 L-index

#	Paper	IF	Citations
149	Hydrogen in lithium niobate. *Advances in Physics*, **1996**, 45, 349-392	18.4	143
148	Theoretical modeling of the fixing and developing of holographic gratings in LiNbO_3. *Journal of the Optical Society of America B: Optical Physics*, **1990**, 7, 2317	1.7	71
147	LiNbO3: A photovoltaic substrate for massive parallel manipulation and patterning of nano-objects. *Applied Physics Reviews*, **2015**, 2, 040605	17.3	58
146	Monte Carlo simulation of the performance of PMMA luminescent solar collectors. *Applied Optics*, **1983**, 22, 3236	1.7	57
145	Nonlinear optical waveguides generated in lithium niobate by swift-ion irradiation at ultralow fluences. *Optics Letters*, **2007**, 32, 2587-9	3	52
144	Photovoltaic versus optical tweezers. *Optics Express*, **2011**, 19, 24320-30	3.3	47
143	Study of developing thermal fixed holograms in lithium niobate. *Journal of the Optical Society of America B: Optical Physics*, **2000**, 17, 1140	1.7	40
142	Effect of the oxidation state and hydrogen concentration on the lifetime of thermally fixed holograms in LiNbO3:Fe. *Physical Review B*, **2002**, 65,	3.3	39
141	Determination of H concentration in LiNbO3 by photorefractive fixing. *Applied Physics Letters*, **1992** , 60, 3212-3214	3.4	36
140	. *IEEE Journal of Quantum Electronics*, **1994**, 30, 875-880	2	35
139	Kinetics for optical erasure of sinusoidal holographic gratings in photorefractive materials. *IEEE Journal of Quantum Electronics*, **1986**, 22, 1369-1375	2	34
138	Efficient photo-induced dielectrophoretic particle trapping on Fe:LiNbO_3 for arbitrary two dimensional patterning. *Optical Materials Express*, **2015**, 5, 1137	2.6	33
137	Recording and erasure kinetics in photorefractive materials at large modulation depths. *Journal of the Optical Society of America B: Optical Physics*, **1994**, 11, 670	1.7	33
136	Biological applications of ferroelectric materials. *Applied Physics Reviews*, **2018**, 5, 041101	17.3	33
135	Recent Achievements on Photovoltaic Optoelectronic Tweezers Based on Lithium Niobate. *Crystals* , **2018**, 8, 65	2.3	32
134	Novel optical waveguides by in-depth controlled electronic damage with swift ions. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 257, 765-770	1.2	32
133	Buried amorphous layers by electronic excitation in ion-beam irradiated lithium niobate: Structure and kinetics. *Journal of Applied Physics*, **2007**, 101, 033512	2.5	32

132	Understanding light intensity thresholds for catastrophic optical damage in LiNbO3. *Optics Express*, **2008**, 16, 115-20	3.3	30
131	Optoelectronic tweezers under arbitrary illumination patterns: theoretical simulations and comparison to experiment. *Optics Express*, **2014**, 22, 29099-110	3.3	29
130	Light-induced charge transport in LiNbO3 crystals. *Physical Review B*, **2008**, 78,	3.3	29
129	Photorefractive fixing and related thermal effects in LiNbO3. *Journal of Physics Condensed Matter*, **1991**, 3, 5399-5406	1.8	29
128	Superlinear photovoltaic currents in LiNbO3: analyses under the two-center model. *Applied Physics B: Lasers and Optics*, **2004**, 79, 351-358	1.9	28
127	High-temperature photorefractive effects in LiNbO3:Fe. *Journal of Applied Physics*, **1993**, 73, 2709-2713	2.5	27
126	Erasure kinetics and spectral dependence of the photorefractive effect in Fe:LiNbO_3. *Journal of the Optical Society of America B: Optical Physics*, **1987**, 4, 309	1.7	27
125	Erasure of holographic gratings in photorefractive materials with two active species. *Applied Optics*, **1988**, 27, 2851-7	1.7	27
124	Trapping and patterning of biological objects using photovoltaic tweezers. *Applied Physics Letters*, **2016**, 108, 023703	3.4	26
123	Optical damage inhibition and thresholding effects in lithium niobate above room temperature. *Optics Communications*, **2000**, 178, 211-216	2	25
122	Lifetimes of thermally fixed holograms in LiNbO(3):Fe crystals. *Optics Letters*, **1998**, 23, 960-2	3	25
121	Theory of high-temperature photorefractive phenomena in LiNbO3 crystals and applications to experiment. *Physical Review B*, **1998**, 57, 12792-12805	3.3	24
120	Diffractive optical devices produced by light-assisted trapping of nanoparticles. *Optics Letters*, **2016** , 41, 432-5	3	23
119	Optimization of selective erasure in photorefractive memories. *Journal of the Optical Society of America B: Optical Physics*, **1997**, 14, 110	1.7	23
118	Isotropic versus anisotropic modeling of photorefractive solitons. *Physical Review E*, **2002**, 65, 066610	2.4	23
117	Massive ordering and alignment of cylindrical micro-objects by photovoltaic optoelectronic tweezers. *Optics Letters*, **2018**, 43, 30-33	3	22
116	Role of particle anisotropy and deposition method on the patterning of nano-objects by the photovoltaic effect in LiNbO3. *Optical Materials*, **2013**, 35, 1700-1705	3.3	22
115	Tumour cell death induced by the bulk photovoltaic effect of LiNbO3:Fe under visible light irradiation. *Photochemical and Photobiological Sciences*, **2011**, 10, 956-63	4.2	22

114	Outdoor evaluation of luminescent solar concentrator prototypes. *Applied Optics*, **1985**, 24, 2028	1.7	22
113	Photorefractive response and optical damage of LiNbO3 optical waveguides produced by swift heavy ion irradiation. *Applied Physics B: Lasers and Optics*, **2009**, 95, 429-433	1.9	21
112	Site correlation effects in the dynamics of iron impurities Fe2+Fe3+ and antisite defects NbLi4+NbLi5+ after a short-pulse excitation in LiNbO3. *Physical Review B*, **2005**, 72,	3.3	21
111	Analytical and numerical study of photorefractive kinetics at high modulation depths. *Journal of the Optical Society of America B: Optical Physics*, **1996**, 13, 2587	1.7	21
110	Holographic recording in photorefractive thin films: Edge effects. *Journal of Applied Physics*, **1995**, 78, 4840-4844	2.5	20
109	Experimental effects of light intensity modulation on the recording and erasure of holographic gratins in BSO crystals. *Optics Communications*, **1993**, 103, 22-28	2	19
108	Singular behavior of light-induced space charge in photorefractive media under an ac field. *Physical Review Letters*, **2000**, 84, 3839-42	7.4	18
107	Photorefractive charge compensation in phase proton-exchanged LiNbO_3 waveguides. *Journal of the Optical Society of America B: Optical Physics*, **2000**, 17, 1412	1.7	18
106	Electrophoretic Versus Dielectrophoretic Nanoparticle Patterning Using Optoelectronic Tweezers. *Physical Review Applied*, **2017**, 7,	4.3	17
105	Optimization of particle trapping and patterning via photovoltaic tweezers: role of light modulation and particle size. *Journal Physics D: Applied Physics*, **2014**, 47, 265101	3	17
104	Role of physical parameters on the photorefractive performance of semiconductor multiple quantum wells. *Journal of the Optical Society of America B: Optical Physics*, **1994**, 11, 1651	1.7	17
103	Comparative theoretical analysis between parallel and perpendicular geometries for 2D particle patterning in photovoltaic ferroelectric substrates. *Journal of the European Optical Society-Rapid Publications*, **2015**, 10,	2.5	16
102	Analysis of photorefractive optical damage in lithium niobate: application to planar waveguides. *Optics Express*, **2010**, 18, 20852-61	3.3	16
101	Optical damage in x-cut proton exchanged LiNbO3 planar waveguides. *Journal of Applied Physics*, **2006**, 100, 093103	2.5	16
100	Time evolution of grating decay during photorefractive fixing processes in LiNbO3. *Journal of Applied Physics*, **1995**, 77, 308-312	2.5	16
99	Particle trapping and structuring on the surface of LiNbO3:Fe optical waveguides using photovoltaic fields. *Optics Letters*, **2014**, 39, 649-52	3	15
98	Locality vs. nonlocality of (2+1)-dimensional light-induced space-charge field in photorefractive crystals. *Europhysics Letters*, **2002**, 60, 847-853	1.6	14
97	Nonperturbative analytical solution for steady-state photorefractive recording. *Optics Letters*, **1995**, 20, 1910-2	3	14

96	Edge effect on luminescent solar concentrators. *Solar Cells*, **1985**, 15, 225-230		14
95	Real-Time Operation of Photovoltaic Optoelectronic Tweezers: New Strategies for Massive Nano-object Manipulation and Reconfigurable Patterning. *Particle and Particle Systems Characterization*, **2019**, 36, 1900233	3.1	13
94	Periodic poling of optical waveguides produced by swift-heavy-ion irradiation in LiNbO3. *Applied Physics B: Lasers and Optics*, **2009**, 95, 435-439	1.9	13
93	Quasisteady space-charge fields in photorefractive multiple quantum wells: Edge effects. *Physical Review B*, **1997**, 55, 5226-5234	3.3	13
92	Plasmonic Enhancement in the Fluorescence of Organic and Biological Molecules by Photovoltaic Tweezing Assembly. *Advanced Materials Technologies*, **2017**, 2, 1700024	6.8	12
91	Tailoring of refractive index profiles in LiNbO3optical waveguides by low-fluence swift-ion irradiation. *Journal Physics D: Applied Physics*, **2007**, 40, 4454-4459	3	12
90	Two-dimensional soliton-induced refractive index change in photorefractive crystals. *Optics Communications*, **2003**, 227, 193-202	2	12
89	Nearly 100% diffraction efficiency fixed holograms in oxidized iron-doped LiNbO3 crystals using self-stabilized recording technique. *Optics Communications*, **2005**, 247, 39-48	2	12
88	Solitonlike beam propagation along light-induced singularity of space charge in fast photorefractive media. *Physical Review Letters*, **2002**, 89, 033902	7.4	12
87	Effects of strong modulation on beam-coupling gain in photorefractive materials: application to B 12 SiO 20. *Journal of the Optical Society of America B: Optical Physics*, **1998**, 15, 2092	1.7	12
86	Temporal evolution of the physical response during photorefractive grating formation and erasure for BSO. *Journal of Applied Physics*, **1995**, 78, 5686-5690	2.5	12
85	Optimization of the developing stage for fixed gratings in LiNbO3. *Optics Communications*, **1996**, 126, 240-246	2	12
84	Optoelectronic Manipulation, Trapping, Splitting, and Merging of Water Droplets and Aqueous Biodroplets Based on the Bulk Photovoltaic Effect. *Physical Review Applied*, **2020**, 14,	4.3	12
83	Synergy between pyroelectric and photovoltaic effects for optoelectronic nanoparticle manipulation. *Optics Express*, **2019**, 27, 804-815	3.3	12
82	Analysis and optimization of propagation losses in LiNbO3 optical waveguides produced by swift heavy-ion irradiation. *Applied Physics B: Lasers and Optics*, **2012**, 107, 157-162	1.9	11
81	Superlinear photovoltaic currents in proton-exchanged LiNbO3 waveguides. *Applied Physics B: Lasers and Optics*, **2003**, 76, 555-559	1.9	11
80	Optical damage control via the Fe2+/Fe3+ ratio in proton-exchanged LiNbO3 waveguides. *Optics Letters*, **2007**, 32, 2294-6	3	10
79	Self-stabilized holographic recording in reduced and oxidized lithium niobate crystals. *Optics Communications*, **2004**, 229, 371-380	2	10

78	Holographic phase-shift measurement during development of a fixed grating in lithium niobate crystals. *Optics Letters*, **2003**, 28, 1040-2	3	10
77	Grating translation technique for vectorial beam coupling and its applications to linear signal detection. *Journal of the Optical Society of America B: Optical Physics*, **2002**, 19, 1564	1.7	10
76	On macroscopic description of photorefractive phenomena. *Applied Physics B: Lasers and Optics*, **1999**, 68, 1013-1020	1.9	10
75	Subharmonic instability taking into account higher harmonics. *Applied Physics Letters*, **1994**, 64, 658-660	3.4	10
74	. *IEEE Journal of Quantum Electronics*, **1991**, 27, 509-515	2	10
73	Time evolution of photovoltaic fields generated by arbitrary light patterns in z-cut LiNbO:Fe: application to optoelectronic nanoparticle manipulation. *Optics Express*, **2020**, 28, 18085-18102	3.3	10
72	Light-intensity measurements in optical waveguides using prism couplers. *Journal of Applied Physics* , **2007**, 102, 074509	2.5	9
71	Short-time photorefractive recording in multiple quantum wells: longitudinal geometry. *Journal of the Optical Society of America B: Optical Physics*, **1996**, 13, 2630	1.7	9
70	Steady holographic gratings in semiconductor multiple quantum wells. *Applied Physics A: Solids and Surfaces*, **1992**, 55, 25-29		9
69	Optoelectronic generation of bio-aqueous femto-droplets based on the bulk photovoltaic effect. *Optics Letters*, **2020**, 45, 1164-1167	3	9
68	Pyroelectric Trapping and Arrangement of Nanoparticles in Lithium Niobate Opposite Domain Structures. *Journal of Physical Chemistry C*, **2016**, 120, 731-736	3.8	8
67	Correlation between photorefractive index changes and optical damage thresholds in z-cut proton-exchanged-LiNbO(3) waveguides. *Optics Express*, **2009**, 17, 658-65	3.3	8
66	Fixed holograms in iron-doped lithium niobate: simultaneous self-stabilized recording and compensation. *Applied Optics*, **2007**, 46, 227-33	1.7	8
65	Photorefractive thin films. *Journal of Optics*, **1996**, 5, 495-503		7
64	Selective developing and screening of fixed photorefractive holograms. *Optics Communications*, **1998**, 151, 257-262	2	7
63	Two kinetic regimes for high-temperature photorefractive phenomena in LiNbO_3. *Journal of the Optical Society of America B: Optical Physics*, **1998**, 15, 148	1.7	7
62	Effect of local rotations on the optical response of LiNbO 3 : Application to ion-beam damage. *Europhysics Letters*, **2006**, 76, 1123-1129	1.6	6
61	Time evolution of the photorefractive phase conjugation process in BaTiO3. *Optics Communications* , **1996**, 131, 211-218	2	6

60	Optical Waveguides Fabricated by Ion Implantation/Irradiation: A Review Optical Waveguides Fabricated by Ion Implantation/Irradiation: A Review **2012**,		5
59	Light intensity dependence of holographic response and dark decays in Ɛphase PE:LiNbO3waveguides. *Journal of Optics*, **2008**, 10, 104008		5
58	Photorefractive fixing phenomena in alpha-phase proton-exchanged LiNbO3 waveguides. *Journal of the Optical Society of America B: Optical Physics*, **2005**, 22, 2229	1.7	5
57	Determination of proton diffusion anisotropy by thermal decay of fixed holograms with K-vector perpendicular to the c-axis in LiNbO3:Fe. *Applied Physics B: Lasers and Optics*, **2005**, 80, 351-354	1.9	5
56	Parametric scattering processes in photorefractive periodically poled lithium niobate. *Journal of the Optical Society of America B: Optical Physics*, **2002**, 19, 1582	1.7	5
55	Linear phase demodulation in photorefractive crystals with nonlocal response. *Journal of Applied Physics*, **2001**, 90, 3135-3141	2.5	5
54	Nonlinear generation of higher-order combinational gratings during sequential recording in LiNbO_3. *Journal of the Optical Society of America B: Optical Physics*, **1999**, 16, 1658	1.7	5
53	Effect of light phase-shifts on photorefractive kinetics: linear regime. *Optical Materials*, **1995**, 4, 304-307	3.3	5
52	Numerical simulation of the time evolution of photorefractive phase conjugate beams: Multigrating operation. *Optical Materials*, **1995**, 4, 326-329	3.3	5
51	Optimization of photorefractive recording by means of light phase-shifts. *Optics Communications*, **1995**, 116, 398-404	2	5
50	Fabrication of Periodically Poled Swift Ion-irradiation Waveguides in LiNbO3. *Ferroelectrics*, **2009**, 390, 29-35	0.6	4
49	Photorefractive non-linear single beam propagation in LiNbO3 waveguides above the optical damage threshold. *Optical Materials*, **2010**, 33, 103-106	3.3	4
48	An alternative design strategy for thin photorefractive polymer structures. *Advanced Materials*, **1997**, 9, 423-426	24	4
47	Photorefractive gratings generated by band-gap excitation: Application to KNbO3. *Applied Physics B: Lasers and Optics*, **2001**, 72, 697-700	1.9	4
46	Calculation of beam-coupling gain and fringe bending in the photorefractive material bismuth silicon oxide under electric fields and strong modulations. *Physical Review B*, **1998**, 58, 9591-9594	3.3	4
45	Linear electroabsorption in semi-insulating GaAs/AlGaAs asymmetric double quantum wells. *Journal of Applied Physics*, **1999**, 86, 3822-3825	2.5	4
44	Nonlinear grating interactions in multibeam photorefractive recording: theoretical investigation. *Journal of the Optical Society of America B: Optical Physics*, **1999**, 16, 414	1.7	4
43	Effects of light phase-shifts on photorefractive kinetics: Computer simulations. *Optical Materials*, **1995**, 4, 461-465	3.3	4

42	Role of photovoltaic drift on the initial writing and erasure rates of holographic gratings: Some implications. *Optics Communications*, **1988**, 69, 83-86	2	4
41	Lambert emitters: a simple Monte-Carlo approach to optical diffusers. *European Journal of Physics*, **1985**, 6, 183-187	0.8	4
40	Low loss optical waveguides fabricated in LiTaO by swift heavy ion irradiation. *Optics Express*, **2019**, 27, 8696-8708	3.3	4
39	Nanoparticle manipulation and trapping by the synergy between the photovoltaic and pyroelectric effects. *Journal of Physics: Conference Series*, **2017**, 867, 012038	0.3	3
38	Characterization and inhibition of photorefractive optical damage of swift heavy ion irradiation waveguides in LiNbO_3. *Journal of the Optical Society of America B: Optical Physics*, **2012**, 29, 3000	1.7	3
37	Effects of light modulation on grating phase shifts in photorefractive recording. *Optics Communications*, **1997**, 139, 81-84	2	3
36	Electric field periodical poling of lithium niobate crystals after soft-proton-exchanged waveguide fabrication. *Applied Physics B: Lasers and Optics*, **2007**, 88, 75-78	1.9	3
35	Photorefractive Phase Proton-Exchanged LiNbO3 Waveguides Prepared on Iron Doped Substrates. *Ferroelectrics*, **2007**, 352, 86-93	0.6	3
34	Fundamentals of Photorefractive Phenomena **2006**, 43-82		3
33	Twelve-fold increase of diffraction efficiency of thermally fixed holograms in Bi12SiO20. *Journal of Applied Physics*, **2005**, 97, 073505	2.5	3
32	Dark developing of photorefractive proton-exchanged LiNbO3 waveguides. *Optical Materials*, **2001**, 18, 111-114	3.3	3
31	Spatial frequency mixing by nonlinear charge transport in photorefractive materials. *Physical Review B*, **2002**, 65,	3.3	3
30	Nonlinear cross talk between gratings recorded in BaTiO3 by mutually incoherent beam pairs. *Journal of Applied Physics*, **2000**, 88, 5527-5533	2.5	3
29	Effect of domain structure fluctuations on the photorefractive response of periodically poled lithium niobate. *Physical Review B*, **2000**, 62, 13182-13187	3.3	3
28	Photorefractive phase conjugation of an image field: fidelity analysis. *Optics Communications*, **1992**, 91, 481-488	2	3
27	Photovoltaic tweezers an emergent tool for applications in nano and bio-technology **2015**,		2
26	Thermal Fixing of Photoinduced Gratings **2006**, 369-396		2
25	Transition from local to nonlocal photorefractive nonlinearity on increasing spatial dimensionality. *Optics Communications*, **2004**, 233, 439-444	2	2

24	Comparative study of optical damage and photovoltaic currents in planar LiNbO 3 waveguides **2005** ,		2
23	Nonlinear mixing of spatial frequencies in photorefractive thermal fixing of holograms in LiNbO3. *Optical Materials*, **2001**, 18, 115-118	3.3	2
22	Time evolution of photorefractive fixing processes in LiNbO3. *Optical Materials*, **1995**, 4, 290-293	3.3	2
21	Nanoparticle Gratings for Compact Spectrometers: an Application of Photovoltaic Tweezers. *Journal of Physics: Conference Series*, **2017**, 867, 012032	0.3	1
20	Optoelectronic tweezers based on photorefractive space charge fields: recent achievements and challenges. *Journal of Physics: Conference Series*, **2017**, 867, 012030	0.3	1
19	Near Field Optical Microscopy in Periodically Poled LiNbO3 and LiTaO3 Superlattices. *Ferroelectrics*, **2014**, 467, 6-12	0.6	1
18	Mach-Zehnder Method for Optical Damage Characterization of Planar Waveguides. *Ferroelectrics*, **2009**, 390, 41-47	0.6	1
17	The Domain Kinetics in Congruent Lithium Niobate Modified by Low and High Energy Ion Irradiation. *Ferroelectrics*, **2012**, 441, 17-24	0.6	1
16	Light Intensity Effects in Photorefractive Phase PE-LiNbO3 Waveguides. *AIP Conference Proceedings*, **2008**,	0	1
15	Photorefractive effect and nonlinear susceptibilities. *Optical Materials*, **1996**, 5, 187-192	3.3	1
14	Holographic infrared wavelength deflector in phase proton-exchanged LiNbO3 waveguides **2003**,		1
13	Optoelectronic manipulation of bio-droplets containing cells or macromolecules by active ferroelectric platforms. *Biomedical Optics Express*, **2021**, 12, 6601-6613	3.5	1
12	Model for multiwave-pumped parametric oscillation in BaTiO3. *Applied Physics B: Lasers and Optics*, **1998**, 66, 347-354	1.9	0
11	Long-Lifetime Photorefractive Holographic Devices via Thermal Fixing Methods **2003**, 91-112		0
10	Light and Thermally Induced Charge Transfer and Ejection of Micro-/Nanoparticles from Ferroelectric Crystal Surfaces. *Advanced Electronic Materials*,2100761	6.4	0
9	Droplet Ejection and Liquid Jetting by Visible Laser Irradiation in Pyro-Photovoltaic Fe-Doped LiNbO3 Platforms. *Advanced Materials Interfaces*, **2021**, 8, 2101164	4.6	0
8	Photovoltaic laser beam degradation in lithium niobate planar waveguides: two-center model approach. *Journal of the Optical Society of America B: Optical Physics*, **2014**, 31, 919	1.7	
7	Nonlinear optical waveguides fabricated in Mg-doped LiNbO3 by swift heavy ion irradiation: anomalous photorefractive damage behavior. *Applied Physics B: Lasers and Optics*, **2014**, 116, 507-514	1.9	

6	Influence of the Geometrical Configuration on Optical Damage of LiNbO3 Planar Waveguides. *Ferroelectrics*, **2009**, 390, 36-40	0.6
5	Single Mode LiNbO3 Waveguides at 4.7 μm by Proton Exchange: Addressing the Atmospheric M-Band. *Ferroelectrics*, **2009**, 390, 48-54	0.6
4	Second Order Susceptibilities and Electro-Optic Coefficients of ZN-Indiffused LiNbO3 Waveguides. *Ferroelectrics*, **2007**, 352, 164-170	0.6
3	Bipolar two-dimensional analysis of grating dynamics in photorefractive thin films. *Journal of Optics* , **2001**, 3, 413-420	
2	Optoelectronic generation of bio-aqueous femto-droplets based on the bulk photovoltaic effect. *Optics Letters*, **2020**, 45, 1164	3
1	Time evolution of photorefractive fixing processes in LiNbO3. *European Materials Research Society Symposia Proceedings*, **1995**, 48, 290-293	