

Luca Dal Negro

List of Publications by Year in descending order

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142
papers

6,368
citations

66343

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all docs

143
docs citations

143
times ranked

7469
citing authors

#	ARTICLE	IF	CITATIONS
1	Engineered SERS Substrates with Multiscale Signal Enhancement: Nanoparticle Cluster Arrays. ACS Nano, 2009, 3, 1190-1202.	14.6	375
2	Optical super-resolution by high-index liquid-immersed microspheres. Applied Physics Letters, 2012, 101, .	3.3	278
3	Physics-informed neural networks for inverse problems in nano-optics and metamaterials. Optics Express, 2020, 28, 11618.	3.4	257
4	Silver Nanoparticles with Broad Multiband Linear Optical Absorption. Angewandte Chemie - International Edition, 2009, 48, 5921-5926.	13.8	235
5	Deterministic aperiodic arrays of metal nanoparticles for surface-enhanced Raman scattering (SERS). Optics Express, 2009, 17, 3741.	3.4	219
6	Plasmonic Nanogalaxies: Multiscale Aperiodic Arrays for Surface-Enhanced Raman Sensing. Nano Letters, 2009, 9, 3922-3929.	9.1	206
7	Enhanced third-harmonic generation in Si-compatible epsilon-near-zero indium tin oxide nanolayers. Optics Letters, 2015, 40, 1500.	3.3	182
8	Nano- and Micropatterning of Optically Transparent, Mechanically Robust, Biocompatible Silk Fibroin Films. Advanced Materials, 2008, 20, 3070-3072.	21.0	181
9	Deterministic aperiodic nanostructures for photonics and plasmonics applications. Laser and Photonics Reviews, 2012, 6, 178-218.	8.7	180
10	Comparative Study of Second-Harmonic Generation from Epsilon-Near-Zero Indium Tin Oxide and Titanium Nitride Nanolayers Excited in the Near-Infrared Spectral Range. ACS Photonics, 2015, 2, 1584-1591.	6.6	151
11	Photonic-Plasmonic Scattering Resonances in Deterministic Aperiodic Structures. Nano Letters, 2008, 8, 2423-2431.	9.1	150
12	Rapid Nanoimprinting of Silk Fibroin Films for Biophotonic Applications. Advanced Materials, 2010, 22, 1746-1749.	21.0	139
13	Wide tuning of the optical and structural properties of alternative plasmonic materials. Optical Materials Express, 2015, 5, 2415.	3.0	133
14	Enhanced Second Harmonic Generation by Photonic-Plasmonic Fano-Type Coupling in Nanoplasmonic Arrays. Nano Letters, 2013, 13, 3111-3117.	9.1	123
15	Engineering Nanoparticle Cluster Arrays for Bacterial Biosensing: The Role of the Building Block in Multiscale SERS Substrates. Advanced Functional Materials, 2010, 20, 2619-2628.	14.9	103
16	Metal-Dielectric Slot-Waveguide Structures for the Propagation of Surface Plasmon Polaritons at 1.55 μm . IEEE Journal of Quantum Electronics, 2007, 43, 479-485.	1.9	102
17	Genetically Engineered Plasmonic Nanoarrays. Nano Letters, 2012, 12, 2037-2044.	9.1	102
18	Engineering Photonic-Plasmonic Coupling in Metal Nanoparticle Necklaces. ACS Nano, 2011, 5, 6578-6585.	14.6	85

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19	Circularly Symmetric Light Scattering from Nanoplasmonic Spirals. Nano Letters, 2011, 11, 2008-2016.	9.1	82
20	Particle-swarm optimization of broadband nanoplasmonic arrays. Optics Letters, 2010, 35, 133.	3.3	81
21	Indium Tin Oxide Broadband Metasurface Absorber. ACS Photonics, 2018, 5, 3526-3533.	6.6	78
22	Tunability of indium tin oxide materials for mid-infrared plasmonics applications. Optical Materials Express, 2017, 7, 2727.	3.0	74
23	Photonic Plasmonic Coupling of GaAs Single Nanowires to Optical Nanoantennas. Nano Letters, 2014, 14, 2271-2278.	9.1	73
24	Enhanced near-green light emission from InGaN quantum wells by use of tunable plasmonic resonances in silver nanoparticle arrays. Optics Express, 2010, 18, 21322.	3.4	69
25	Engineering non-radiative anapole modes for broadband absorption enhancement of light. Optics Express, 2016, 24, 19048.	3.4	68
26	Enhanced light emission in photonic crystal nanocavities with Erbium-doped silicon nanocrystals. Applied Physics Letters, 2008, 92, .	3.3	67
27	Polarized Optical Gain and Polarization-Narrowing of Heavily Oxidized Porous Silicon. Physical Review Letters, 2004, 93, 207402.	7.8	64
28	Spectral analysis of induced color change on periodically nanopatterned silk films. Optics Express, 2009, 17, 21271.	3.4	60
29	Imaging and controlling plasmonic interference fields at buried interfaces. Nature Communications, 2016, 7, 13156.	12.8	58
30	Geometrical structure, multifractal spectra and localized optical modes of aperiodic Vogel spirals. Optics Express, 2012, 20, 3015.	3.4	56
31	The role of nanoparticle shapes and deterministic aperiodicity for the design of nanoplasmonic arrays. Optics Express, 2009, 17, 9648.	3.4	54
32	Spatial and spectral detection of protein monolayers with deterministic aperiodic arrays of metal nanoparticles. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12086-12090.	7.1	54
33	Theory of coupled plasmon modes and Fano-like resonances in subwavelength metal structures. Physical Review B, 2013, 88, .	3.2	53
34	Sub-250 nm room-temperature optical gain from AlGaIn/AlIn multiple quantum wells with strong band-structure potential fluctuations. Applied Physics Letters, 2012, 100, 061111.	3.3	52
35	Optical gap formation and localization properties of optical modes in deterministic aperiodic photonic structures. Optics Express, 2008, 16, 18813.	3.4	49
36	Rapid Nanoimprinting of Doped Silk Films for Enhanced Fluorescent Emission. Advanced Materials, 2010, 22, 4596-4599.	21.0	49

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37	Spectral gaps and mode localization in Fibonacci chains of metal nanoparticles. Optics Express, 2007, 15, 14396.	3.4	48
38	Quasi-periodic distribution of plasmon modes in two-dimensional Fibonacci arrays of metal nanoparticles. Optics Express, 2008, 16, 5544.	3.4	47
39	Multiple-wavelength plasmonic nanoantennas. Optics Letters, 2010, 35, 538.	3.3	46
40	Linewidth narrowing and Purcell enhancement in photonic crystal cavities on an Er-doped silicon nitride platform. Optics Express, 2010, 18, 2601.	3.4	45
41	Multispectral Cesaro-Type Fractal Plasmonic Nanoantennas. ACS Photonics, 2016, 3, 2102-2111.	6.6	45
42	Self-referenced photonic molecule bio(chemical)sensor. Optics Letters, 2010, 35, 2496.	3.3	43
43	Multipolar second harmonic generation from planar arrays of Au nanoparticles. Optics Express, 2012, 20, 15797.	3.4	43
44	Direct Transfer of Subwavelength Plasmonic Nanostructures on Bioactive Silk Films. Advanced Materials, 2012, 24, 6088-6093.	21.0	43
45	Localized photonic band edge modes and orbital angular momenta of light in a golden-angle spiral. Optics Express, 2011, 19, 23631.	3.4	41
46	Aperiodic arrays of active nanopillars for radiation engineering. Journal of Applied Physics, 2012, 111, 113101.	2.5	41
47	Vertical α -V-Shaped Nanomembranes Epitaxially Grown on a Patterned Si[001] Substrate and Their Enhanced Light Scattering. ACS Nano, 2012, 6, 10982-10991.	14.6	41
48	Analytical light scattering and orbital angular momentum spectra of arbitrary Vogel spirals. Optics Express, 2012, 20, 18209.	3.4	40
49	Engineered hyperuniformity for directional light extraction. APL Photonics, 2019, 4, 110801.	5.7	39
50	Size-dependent second-harmonic generation from gold nanoparticles. Physical Review B, 2014, 89, .	3.2	38
51	Light-Emitting Silicon Nanocrystals and Photonic Structures in Silicon Nitride. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 1628-1635.	2.9	36
52	Role of aperiodic order in the spectral, localization, and scaling properties of plasmon modes for the design of nanoparticle arrays. Physical Review B, 2009, 79, .	3.2	35
53	Formation of colorimetric fingerprints on nano-patterned deterministic aperiodic surfaces. Optics Express, 2010, 18, 14568.	3.4	35
54	Engineering Plasmon-Enhanced Au Light Emission with Planar Arrays of Nanoparticles. Nano Letters, 2013, 13, 786-792.	9.1	35

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55	Plasmonic-photonic arrays with aperiodic spiral order for ultra-thin film solar cells. Optics Express, 2012, 20, A418.	3.4	34
56	High-capacity quantum Fibonacci coding for key distribution. Physical Review A, 2013, 87, .	2.5	34
57	Control of optical orbital angular momentum by Vogel spiral arrays of metallic nanoparticles. Optics Letters, 2012, 37, 5076.	3.3	33
58	Development of AlGaN-based graded-index-separate-confinement-heterostructure deep UV emitters by molecular beam epitaxy. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2013, 31, .	1.2	33
59	Inverse Design of Metal Nanoparticles' Morphology. ACS Photonics, 2016, 3, 68-78.	6.6	33
60	Surface integral formulations for the design of plasmonic nanostructures. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 2314.	1.5	32
61	Visible and 1.54 μm Emission From Amorphous Silicon Nitride Films by Reactive Cosputtering. IEEE Journal of Selected Topics in Quantum Electronics, 2010, 16, 114-123.	2.9	31
62	Nanopatterning of silicon nanowires for enhancing visible photoluminescence. Nanoscale, 2012, 4, 2863.	5.6	30
63	Observation of Transparency of Erbium-doped Silicon nitride in photonic crystal nanobeam cavities. Optics Express, 2010, 18, 13863.	3.4	29
64	Multi-wavelength mid-infrared plasmonic antennas with single nanoscale focal point. Optics Express, 2011, 19, 22113.	3.4	29
65	Sensitive label-free biosensing using critical modes in aperiodic photonic structures. Optics Express, 2008, 16, 12511.	3.4	28
66	Plasmon mode transformation in modulated-index metal-dielectric slot waveguides. Optics Letters, 2007, 32, 3086.	3.3	27
67	Rare earth doped Si-rich ZnO for multiband near-infrared light emitting devices. Applied Physics Letters, 2012, 101, 191115.	3.3	27
68	Structural and Spectral Properties of Deterministic Aperiodic Optical Structures. Crystals, 2016, 6, 161.	2.2	27
69	Deep-Ultraviolet Emitting AlGaN Multiple Quantum Well Graded-Index Separate-Confinement Heterostructures Grown by MBE on SiC Substrates. IEEE Photonics Journal, 2017, 9, 1-9.	2.0	27
70	Plasmon-Enhanced Emission Rate of Silicon Nanocrystals in Gold Nanorod Composites. ACS Photonics, 2015, 2, 1298-1305.	6.6	26
71	Enhanced light emission from erbium doped silicon nitride in plasmonic metal-insulator-metal structures. Optics Express, 2009, 17, 20642.	3.4	24
72	Concentric Necklace Nanolenses for Optical Near-Field Focusing and Enhancement. ACS Nano, 2012, 6, 4341-4348.	14.6	24

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73	Full-Wave Analytical Solution of Second-Harmonic Generation in Metal Nanospheres. <i>Plasmonics</i> , 2014, 9, 151-166.	3.4	24
74	Demonstration of laser action in a pseudorandom medium. <i>Applied Physics Letters</i> , 2010, 97, .	3.3	23
75	Plasmon-enhanced structural coloration of metal films with isotropic Pinwheel nanoparticle arrays. <i>Optics Express</i> , 2011, 19, 23818.	3.4	22
76	Plasmonic Nanotrough Networks for Scalable Bacterial Raman Biosensing. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 27928-27935.	8.0	22
77	Coupled fiber taper extraction of 153 λ m photoluminescence from erbium doped silicon nitride photonic crystal cavities. <i>Optics Express</i> , 2010, 18, 5964.	3.4	21
78	Generation of second harmonic radiation from sub-stoichiometric silicon nitride thin films. <i>Applied Physics Letters</i> , 2013, 102, 141114.	3.3	21
79	Enhancement of Molecular Fluorescence in the UV Spectral Range Using Aluminum Nanoantennas. <i>Plasmonics</i> , 2014, 9, 715-725.	3.4	21
80	Directional light emission enhancement from LED-phosphor converters using dielectric Vogel spiral arrays. <i>APL Photonics</i> , 2018, 3, 126103.	5.7	21
81	Edge modes of scattering chains with aperiodic order. <i>Optics Letters</i> , 2018, 43, 1986.	3.3	21
82	Lasing in Thue-Morse structures with optimized aperiodicity. <i>Applied Physics Letters</i> , 2011, 98, .	3.3	20
83	Broadband enhancement of local density of states using silicon-compatible hyperbolic metamaterials. <i>Applied Physics Letters</i> , 2015, 106, 241105.	3.3	20
84	Modeling of Aperiodic Fractal Waveguide Structures for Multifrequency Light Transport. <i>Journal of Lightwave Technology</i> , 2007, 25, 1841-1847.	4.6	19
85	Nanoplasmonics of prime number arrays. <i>Optics Express</i> , 2009, 17, 24288.	3.4	19
86	Thermo-optic tuning of erbium-doped amorphous silicon nitride microdisk resonators. <i>Applied Physics Letters</i> , 2011, 98, 041102.	3.3	19
87	Enhanced photoluminescence of Si nanocrystals-doped cellulose nanofibers by plasmonic light scattering. <i>Applied Physics Letters</i> , 2015, 107, .	3.3	18
88	Fractional Transport of Photons in Deterministic Aperiodic Structures. <i>Scientific Reports</i> , 2017, 7, 2259.	3.3	18
89	Polarization response of nanowires À la carte. <i>Scientific Reports</i> , 2015, 5, 7651.	3.3	17
90	Deep-UV optical gain in AlGaIn-based graded-index separate confinement heterostructure. <i>Optical Materials Express</i> , 2015, 5, 809.	3.0	17

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91	Plasmon-enhanced depolarization of reflected light from arrays of nanoparticle dimers. <i>Optics Express</i> , 2011, 19, 21081.	3.4	16
92	Near-field calculation based on the T-matrix method with discrete sources. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2011, 112, 2384-2394.	2.3	16
93	Gold Nanofiber-Based Electrodes for Plasmon-Enhanced Electrocatalysis. <i>Journal of the Electrochemical Society</i> , 2016, 163, H1132-H1135.	2.9	16
94	Spectral statistics and scattering resonances of complex primes arrays. <i>Physical Review B</i> , 2018, 97, .	3.2	16
95	Physics-informed neural networks for imaging and parameter retrieval of photonic nanostructures from near-field data. <i>APL Photonics</i> , 2022, 7, .	5.7	16
96	Photonic Crystal and Plasmonic Silicon-Based Light Sources. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2010, 16, 132-140.	2.9	15
97	Enhanced second harmonic generation from InAs nano-wing structures on silicon. <i>Nanoscale</i> , 2013, 5, 10163.	5.6	15
98	Effect of indium in Al _{0.65} Ga _{0.35} N/Al _{0.8} Ga _{0.2} N MQWs for the development of deep-UV laser structures in the form of graded-index separate confinement heterostructure (GRINSCH). <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016, 213, 1165-1169.	1.8	15
99	Synthesis, Characterization, and Modeling of Nitrogen-Passivated Colloidal and Thin Film Silicon Nanocrystals. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2006, 12, 1151-1163.	2.9	13
100	Probing scattering resonances of Vogel's spirals with the Green's matrix spectral method. <i>Optics Letters</i> , 2016, 41, 1933.	3.3	13
101	Cavity quantum electro-dynamics with solid-state emitters in aperiodic nano-photonic spiral devices. <i>Applied Physics Letters</i> , 2020, 117, .	3.3	13
102	Radiation Rate Enhancement in Subwavelength Plasmonic Ring Nanocavities. <i>Nano Letters</i> , 2013, 13, 3709-3715.	9.1	12
103	Multifractality of light in photonic arrays based on algebraic number theory. <i>Communications Physics</i> , 2020, 3, .	5.3	12
104	Cavity-enhanced light-matter interaction in Vogel-spiral devices as a platform for quantum photonics. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	12
105	Energy transfer and stimulated emission dynamics at 11 μ m in Nd-doped SiN _x . <i>Optics Express</i> , 2011, 19, 5379.	3.4	11
106	Microfluidics integration of aperiodic plasmonic arrays for spatial-spectral optical detection. <i>Optics Express</i> , 2013, 21, 4945.	3.4	11
107	Structure-dependent optical nonlinearity of indium tin oxide. <i>Applied Physics Letters</i> , 2022, 120, .	3.3	11
108	Optical gaps, mode patterns and dipole radiation in two-dimensional aperiodic photonic structures. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2009, 41, 1102-1106.	2.7	10

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109	Light scattering, field localization and local density of states in co-axial plasmonic nanowires. <i>Optics Express</i> , 2010, 18, 16120.	3.4	10
110	Optimization of Large-Scale Vogel Spiral Arrays of Plasmonic Nanoparticles. <i>Plasmonics</i> , 2019, 14, 253-261.	3.4	10
111	Compact Dual-Band Multi-Focal Diffractive Lenses. <i>Laser and Photonics Reviews</i> , 2021, 15, 2000207.	8.7	10
112	Second-order parametric interactions in 1-D photonic-crystal microcavity structures. <i>Optics Express</i> , 2008, 16, 5261.	3.4	9
113	Erbium-doped silicon nanocrystals in silicon/silicon nitride superlattice structures: Light emission and energy transfer. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2009, 41, 1040-1043.	2.7	9
114	Enhanced second harmonic generation from Au nanoparticle arrays by femtosecond laser irradiation. <i>Nanoscale</i> , 2013, 5, 7795.	5.6	9
115	Gate-tunable metafilm absorber based on indium silicon oxide. <i>Nanophotonics</i> , 2019, 8, 1803-1810.	6.0	9
116	Aperiodic Photonics of Elliptic Curves. <i>Crystals</i> , 2019, 9, 482.	2.2	8
117	Absorption bleaching by stimulated emission in erbium-doped silicon-rich silicon nitride waveguides. <i>Optics Letters</i> , 2011, 36, 4.	3.3	7
118	GPU-accelerated T-matrix algorithm for light-scattering simulations. <i>Journal of Computational Physics</i> , 2012, 231, 5640-5652.	3.8	7
119	A fractional diffusion random laser. <i>Scientific Reports</i> , 2019, 9, 8686.	3.3	7
120	Aperiodic bandgap structures for enhanced quantum two-photon sources. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2021, 38, C94.	2.1	7
121	Thermal conductivity and photoluminescence of light-emitting silicon nitride films. <i>Applied Physics Letters</i> , 2012, 100, .	3.3	6
122	Phase-Modulated Axilenses As Ultracompact Spectroscopic Tools. <i>ACS Photonics</i> , 2020, 7, 2731-2738.	6.6	6
123	Radiative properties of diffractively-coupled optical nano-antennas with helical geometry. <i>Optics Express</i> , 2015, 23, 25496.	3.4	5
124	Phase-modulated axilenses for infrared multiband spectroscopy. <i>Optics Letters</i> , 2020, 45, 2371.	3.3	5
125	Compact localized states of open scattering media: a graph decomposition approach for an ab initio design. <i>Optics Letters</i> , 2019, 44, 375.	3.3	5
126	Cloaking of arbitrarily shaped objects with homogeneous coatings. <i>Physical Review B</i> , 2014, 89, .	3.2	4

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127	Pole-zero analysis of scattering resonances of multilayered nanospheres. Physical Review B, 2018, 98, .	3.2	4
128	Indium silicon oxide thin films for infrared metaphotonics. Applied Physics Letters, 2019, 114, .	3.3	4
129	Hyperuniform scalar random fields for lensless, multispectral imaging systems. Optics Letters, 2021, 46, 5360-5363.	3.3	3
130	Inverse design of ultracompact multi-focal optical devices by diffractive neural networks. Optics Letters, 2022, 47, 2842.	3.3	3
131	Simplicity unlocks complexity. Nature Materials, 2014, 13, 1080-1081.	27.5	2
132	Plasmonic Mode Transformers Using Modulated-Index Metal-Dielectric Slot Waveguides. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	1
133	Silicon photonic modulators based on epsilon-near-zero indium tin oxide materials. , 2014, , .		1
134	Field Enhancement in Deterministic Aperiodic Arrays of Metal Nanoparticles. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	0
135	Enhanced erbium emission in photonic crystal nanocavities. , 2008, , .		0
136	Differential gain at 1.54 μ m in Er-doped silicon nitride coupled to photonic crystal cavity. , 2009, , .		0
137	Tunable light sources in the visible and near infrared based on fiber taper coupled photonic crystal nanocavities. , 2010, , .		0
138	Silicon Nanocavity Based Light Sources. Materials Research Society Symposia Proceedings, 2011, 1305, 1.	0.1	0
139	Wave Transport and Localization in Prime Number Landscapes. Frontiers in Physics, 2021, 9, .	2.1	0
140	Aperiodic Order in Nanoplasmonics. Challenges and Advances in Computational Chemistry and Physics, 2013, , 329-377.	0.6	0
141	Engineering isotropic aperiodic structures for lensless imaging systems. , 2021, , .		0
142	Hyperuniform scalar random fields for lensless, multispectral imaging systems: erratum. Optics Letters, 2022, 47, 1932.	3.3	0