Lucio C Andreani

List of Publications by Year
in descending order

107 papers	5,889 citations	81839 39 h-index	71651 76 g-index
108 all docs	108 docs citations	108 times ranked	5187 citing authors

#	Article	IF	Citations
1	Radiative lifetime of free excitons in quantum wells. Solid State Communications, 1991, 77, 641-645.	0.9	492
2	Strong-coupling regime for quantum boxes in pillar microcavities: Theory. Physical Review B, 1999, 60, 13276-13279.	1.1	374
3	Accurate theory of excitons in GaAs-Ga1â^'xAlxAs quantum wells. Physical Review B, 1990, 42, 8928-8938.	1.1	356
4	Nanoscale chemical mapping using three-dimensional adiabatic compression of surface plasmon polaritons. Nature Nanotechnology, 2010, 5, 67-72.	15.6	352
5	High-speed low-voltage electro-optic modulator with a polymer-infiltrated silicon photonic crystal waveguide. Optics Express, 2008, 16, 4177.	1.7	282
6	Exciton-light coupling in single and coupled semiconductor microcavities: Polariton dispersion and polarization splitting. Physical Review B, 1999, 59, 5082-5089.	1.1	248
7	Hole subbands in strained GaAs-Ga1â^'xAlxAs quantum wells: Exact solution of the effective-mass equation. Physical Review B, 1987, 36, 5887-5894.	1.1	223
8	A Hybrid Plasmonicâ^'Photonic Nanodevice for Label-Free Detection of a Few Molecules. Nano Letters, 2008, 8, 2321-2327.	4.5	215
9	Exchange interaction and polariton effects in quantum-well excitons. Physical Review B, 1990, 41, 7536-7544.	1.1	199
10	Silicon solar cells: toward the efficiency limits. Advances in Physics: X, 2019, 4, 1548305.	1.5	188
11	Photonic-crystal slabs with a triangular lattice of triangular holes investigated using a guided-mode expansion method. Physical Review B, 2006, 73, .	1.1	185
12	Planar photonic crystal cavities with far-field optimization for high coupling efficiency and quality factor. Optics Express, 2010, 18, 16064.	1.7	139
13	Inverse Design of Photonic Crystals through Automatic Differentiation. ACS Photonics, 2020, 7, 1729-1741.	3.2	114
14	Low-power continuous-wave generation of visible harmonics in silicon photonic crystal nanocavities. Optics Express, 2010, 18, 26613.	1.7	113
15	Effect of inhomogeneous broadening on optical properties of excitons in quantum wells. Physical Review B, 1998, 57, 4670-4680.	1.1	112
16	Optimizing polarization-diversity couplers for Si-photonics: reaching the â^'1dB coupling efficiency threshold. Optics Express, 2014, 22, 14769.	1.7	111
17	Disorder-induced losses in photonic crystal waveguides with line defects. Optics Letters, 2004, 29, 1897.	1.7	101
18	Broad parameter optimization of polarization-diversity 2D grating couplers for silicon photonics. Optics Express, 2013, 21, 21556.	1.7	100

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19	Optimising apodized grating couplers in a pure SOI platform to â˜'05 dB coupling efficiency. Optics Express, 2015, 23, 16289.	1.7	92
20	Exciton-polaritons in superlattices. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 192, 99-109.	0.9	81
21	Light trapping regimes in thin-film silicon solar cells with a photonic pattern. Optics Express, 2010, 18, 4260.	1.7	79
22	From classical four-wave mixing to parametric fluorescence in silicon microring resonators. Optics Letters, 2012, 37, 3807.	1.7	77
23	Scattering-matrix analysis of periodically patterned multilayers with asymmetric unit cells and birefringent media. Physical Review B, 2008, 77, .	1.1	70
24	Tunable Out-of-Plane Excitons in 2D Single-Crystal Perovskites. ACS Photonics, 2018, 5, 4179-4185.	3.2	67
25	Intrinsic diffraction losses in photonic crystal waveguides with line defects. Applied Physics Letters, 2003, 82, 2011-2013.	1.5	61
26	Crossover from strong to weak confinement for excitons in shallow or narrow quantum wells. Physical Review B, 1997, 56, 3922-3932.	1.1	59
27	Well-width and aluminum-concentration dependence of the exciton binding energies in GaAs/AlxGa1â˜'xAs quantum wells. Physical Review B, 1993, 47, 15755-15762.	1.1	57
28	Broadband light trapping with disordered photonic structures in thinâ€ſilm silicon solar cells. Progress in Photovoltaics: Research and Applications, 2014, 22, 1237-1245.	4.4	57
29	Second-harmonic generation in doubly resonant microcavities with periodic dielectric mirrors. Physical Review E, 2006, 73, 016613.	0.8	56
30	Engineering Gaussian disorder at rough interfaces for light trapping in thin-film solar cells. Optics Letters, 2012, 37, 4868.	1.7	53
31	Binding energies of excited shallow acceptor states in GaAs/Ga1â˜'xAlxAs quantum wells. Physical Review B, 1989, 40, 5602-5612.	1.1	52
32	All-optical switching in silicon-on-insulator photonic wire nano-cavities. Optics Express, 2010, 18, 1450.	1.7	52
33	Towards the efficiency limits of silicon solar cells: How thin is too thin?. Solar Energy Materials and Solar Cells, 2015, 143, 260-268.	3.0	48
34	Quantum theory of exciton polaritons in cylindrical semiconductor microcavities. Physical Review B, 1999, 60, 16799-16806.	1.1	46
35	Lightâ€“matter interaction in photonic crystal slabs. Physica Status Solidi (B): Basic Research, 2007, 244, 3528-3539.	0.7	46
36	Quantum theory of exciton-photon coupling in photonic crystal slabs with embedded quantum wells. Physical Review B, 2007, 75, .	1.1	45

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37	Low-loss guided modes in photonic crystal waveguides. Optics Express, 2005, 13, 4939.	1.7	41
38	Effective bichromatic potential for ultra-high Q-factor photonic crystal slab cavities. Applied Physics Letters, 2015, 107, .	1.5	41
39	A facile lightâ€trapping approach for ultrathin GaAs solar cells using wet chemical etching. Progress in Photovoltaics: Research and Applications, 2020, 28, 200-209.	4.4	41
40	All-optical switching in 2D silicon photonic crystals with low loss waveguides and optical cavities. Optics Express, 2008, 16, 11624-36.	1.7	40
41	Excitons in confined systems: from quantum well to bulk behaviour. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 168, 451-459.	0.9	35
42	Ab InitioCalculations of the Anisotropic Dielectric Tensor ofGaAs/AlAsSuperlattices. Physical Review Letters, 2002, 89, 216803.	2.9	35
43	Complete photonic band gap in a two-dimensional chessboard lattice. Physical Review B, 2000, 61, 15519-15522.	1.1	34
44	Cascade luminescent solar concentrators. Applied Physics Letters, 2014, 104, 153901.	1.5	32
45	Highly efficient second-harmonic generation in doubly resonantplanar microcavities. Applied Physics Letters, 2004, 85, 1883-1885.	1.5	30
46	Tight-binding approach to excitons bound to monolayer impurity planes:â€ƒStrong radiative properties of InAs in GaAs. Physical Review B, 1998, 57, R15072-R15075.	1.1	29
47	Strong coupling between a dipole emitter and localized plasmons: enhancement by sharp silver tips. Optics Express, 2013, 21, 27602.	1.7	29
48	Modification of erbium radiative lifetime in planar silicon slot waveguides. Applied Physics Letters, 2009, 94, .	1.5	28
49	Photonic Bands and Radiation Losses in Photonic Crystal Waveguides. Physica Status Solidi (B): Basic Research, 2002, 234, 139-146.	0.7	26
50	Two-dimensional surface emitting photonic crystal laser with hybrid triangular-graphite structure. Optics Express, 2009, 17, 15043.	1.7	24
51	Quantum Theory of Surface Plasmon Polaritons: Planar and Spherical Geometries. Plasmonics, 2014, 9, 965-978.	1.8	24
52	Theory of excitons in GaAsî—¸Ga1â^'xAlxAs quantum wells including valence band mixing. Superlattices and Microstructures, 1989, 5, 59-63.	1.4	22
53	Exchange splitting of light hole excitons in Al1â^'Ï‡Gaï‡As-GaAs quantum wells. Solid State Communications, 1991, 80, 553-556.	0.9	22
54	Exciton-polaritons and nanoscale cavities in photonic crystal slabs. Physica Status Solidi (B): Basic Research, 2005, 242, 2197-2209.	0.7	18

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55	Light trapping and electrical transport in thin-film solar cells with randomly rough textures. Journal of Applied Physics, 2014, 115, .	1.1	18
56	Bulk polariton beatings and two-dimensional radiative decay: Analysis of time-resolved transmission through a dispersive film. Solid State Communications, 1997, 102, 505-509.	0.9	17
57	A zero-temperature variational study of the two-impurity Anderson model. Solid State Communications, 1991, 79, 17-20.	0.9	16
58	Two-impurity Anderson model: A variational study. Physical Review B, 1993, 48, 7322-7337.	1.1	16
59	Fabrication of SOI photonic crystal slabs by soft UV-nanoimprint lithography. Microelectronic Engineering, 2006, 83, 1773-1777.	1.1	16
60	Sensing by Means of Nonlinear Optics with Functionalized GaAs/AlGaAs Photonic Crystals. Langmuir, 2010, 26, 10373-10379.	1.6	16
61	Efficiency Enhancement and Hysteresis Mitigation by Manipulation of Grain Growth Conditions in Hybrid Evaporatedâ€“Spin-coated Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 722-729.	4.0	16
62	Magnetic correlations in the Anderson lattice: An exact-diagonalization study. Physical Review B, 1993, 47, 1130-1133.	1.1	15
63	Variational calculation of Fano linewidth: Application to excitons in quantum wells. Physical Review B, 1991, 44, 3162-3167.	1.1	14
64	A Multiâ€optical Collector of Sunlight Employing Luminescent Materials and Photonic Nanostructures. Advanced Optical Materials, 2016, 4, 147-155.	3.6	14
65	Slow light with interleaved p-n junction to enhance performance of integrated Mach-Zehnder silicon modulators. Nanophotonics, 2019, 8, 1485-1494.	2.9	14
66	Competition between Kondo effect and RKKY interaction: A molecular model. Solid State Communications, 1991, 77, 635-640.	0.9	13
67	Theoretical and experimental study of the Suzuki-phase photonic crystal lattice by angle-resolved photoluminescence spectroscopy. Optics Express, 2007, 15, 704.	1.7	13
68	Optimizing band-edge slow light in silicon-on-insulator waveguide gratings. Optics Express, 2018, 26, 8470.	1.7	13
69	Dipole Decay Rates Engineering via Silver Nanocones. Plasmonics, 2013, 8, 1079-1086.	1.8	11
70	Interpretation of three-photon spectra in alkali halides. Physical Review B, 1990, 41, 12230-12235.	1.1	9
71	Hybridization versus Local Exchange Interaction in the Kondo Problem: A Two-Band Model. Physical Review Letters, 1996, 77, 2762-2765.	2.9	9
72	Synthesis of amorphous silicon/magnesia based direct opals with tunable optical properties. Optical Materials, 2011, 33, 563-569.	1.7	8

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73	Quantum theory of photonic crystal polaritons. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 446-449.	0.8	7
74	Effect of implementation of a Bragg reflector in the photonic band structure of the Suzuki-phase photonic crystal lattice. Optics Express, 2008, 16, 8509.	1.7	7
75	Doubly-Resonant Photonic Crystal Cavities for Efficient Second-Harmonic Generation in IIIâ€“V Semiconductors. Nanomaterials, 2021, 11, 605.	1.9	7
76	Optimizing an interleaved p-n junction to reduce energy dissipation in silicon slow-light modulators. Photonics Research, 2020, 8, 457.	3.4	7
77	Hole subbands in quantum wells: Comparison between theory and hot-electron-acceptor-luminescence experiments. Physical Review B, 1992, 46, 2625-2627.	1.1	6
78	Stability ofSU(N)symmetry in the Coqblin-Schrieffer model by the perturbative renormalization group. Physical Review B, 1997, 56, 5073-5076.	1.1	6
79	Results on MOVPE SiGeSn deposition for the monolithic integration of III-V and IV elements in multi-junction solar cells. Solar Energy Materials and Solar Cells, 2021, 224, 111016.	3.0	5
80	Dispersive coupling between MoSe₂ and an integrated zero-dimensional nanocavity. Optical Materials Express, 2022, 12, 59.	1.6	5
81	Comment on â€˜â€˜Effect of biaxial strain on acceptor-level energies inInyGa1âˆ’yAs/AlxGa1âˆ’xAs (on GaAs) quantum wellsâ€™â€™. Physical Review B, 1990, 42, 7641-7642.	1.1	4
82	High exciton binding energies in GaAs/GaAlAs quantum wells. Superlattices and Microstructures, 1991, 9, 1-4.	1.4	4
83	Twoâ€impurity Anderson model: Variational wave functions with electronâ€hole excitations. Journal of Applied Physics, 1993, 73, 6628-6630.	1.1	4
84	Accelerated Thermal Aging Effects on Carbonâ€Based Perovskite Solar Cells: A Joint Experimental and Theoretical Analysis. Solar Rrl, 2021, 5, 2000759.	3.1	4
85	Perturbations of Dipole Decay Dynamics Induced by Plasmonic Nano-Antennas â€” A Study within the Discrete Dipole Approximation. Nanomaterials and Nanotechnology, 2015, 5, 11.	1.2	3
86	A new theoretical approach for the performance simulation of multijunction solar cells. Progress in Photovoltaics: Research and Applications, 2020, 28, 279-294.	4.4	3
87	THEORY OF THE MAGNETIC FORM FACTOR IN REDUCED-MOMENT KONDO SYSTEMS. International Journal of Modern Physics B, 1996, 10, 1167-1189.	1.0	2
88	Strong exciton-light coupling in photonic crystal nanocavities. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 801-804.	0.8	2
89	Simulation of the performances of multijunction solar cells with improved voltage by transfer and scattering matrix methods. , 2017, , .		2
90	The Role of Surface Passivation Layer Preparation on Crystallization and Optoelectronic Performance of Hybrid Evaporated-Spincoated Perovskite Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 1428-1435.	1.5	2

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91	Competition between Coqblin-Schrieffer and local exchange interactions in Kondo systems by the perturbative renormalization group. Physical Review B, 1999, 59, 8828-8834.	1.1	1
92	Nonlinear optics in Silicon photonic crystal cavities. , 2011, , .		1
93	Light trapping in thin film solar cells with sub-wavelength photonic crystal patterns. , 2012, , .		1
94	Optimizing grating couplers for silicon photonics. , 2016, , .		1
95	Slow Light in Waveguide Gratings on Silicon-on-Insulator Platform. , 2018, , .		1
96	Study of the Cross-Influence between III-V and IV Elements Deposited in the Same MOVPE Growth Chamber. Materials, 2021, 14, 1066.	1.3	1
97	Accelerated Thermal Aging Effects on Carbon-Based Perovskite Solar Cells: A Joint Experimental and Theoretical Analysis. , 0, , .		1
98	Optimal condition to probe strong coupling of two-dimensional excitons and zero-dimensional cavity modes. Physical Review B, 2021, 104, .	1.1	1
99	Disorder-Induced Losses in Photonic Crystal Slabs. , 2006, , .		0
100	Nonlinear optics in silicon photonic crystal nanocavities. , 2011, , .		0
101	Low-power continuous-wave frequency conversion in far-field optimized silicon photonic crystal nanocavities. , 2011, , .		0
102	Engineering disorder for light trapping in thin-film solar cells. , 2013, , .		0
103	Optimizing silicon-on-oxide 2D-grating couplers. , 2013, , .		0
104	Exciton-Polaritons in Bulk Semiconductors and in Confined Electron and Photon Systems. , 2014, , 37-82.		0
105	Wet-Chemically Textured Ultra-Thin GaAs Solar Cells with Dielectric/Metal Rear Mirrors. , 2019, , .		0
106	Slow Light to Reduce the Energy Dissipation of Mach-Zehnder Modulators in Silicon Photonics. , 2019, , .		0
107	Slow-Light Modulators in Silicon Waveguides Gratings. , 2019, , .		0