Mauro F Pereira

List of Publications by Year
in descending order

108 papers	1,294 citations	201575 27 h-index	360920 35 g-index
110 all docs	110 docs citations	110 times ranked	412 citing authors

#	Article	IF	Citations
1	Nonequilibrium many body theory for quantum transport in terahertz quantum cascade lasers. Applied Physics Letters, 2009, 95, .	1.5	104
2	Microscopic theory for the influence of Coulomb correlations in the light-emission properties of semiconductor quantum wells. Physical Review B, 1998, 58, 2064-2076.	1.1	73
3	Controlling many-body effects in the midinfrared gain and terahertz absorption of quantum cascade laser structures. Physical Review B, 2004, 69, .	1.1	52
4	Theory and measurements of harmonic generation in semiconductor superlattices with applications in the 100 GHz to 1 THz range. Physical Review B, 2017, 96, .	1.1	52
5	Exciton binding energies in semiconductor superlattices: An anisotropic-effective-medium approach. Physical Review B, 1990, 42, 7084-7089.	1.1	42
6	Theory of nonlinear optical absorption in coupledâ€band quantum wells with manyâ€body effects. Applied Physics Letters, 1994, 64, 279-281.	1.5	42
7	Analytical Expressions for Numerical Characterization of Semiconductors per Comparison with Luminescence. Materials, 2018, 11, 2.	1.3	42
8	Intersubband antipolaritons: Microscopic approach. Physical Review B, 2007, 75, .	1.1	40
9	Intervalence transverse-electric mode terahertz lasing without population inversion. Physical Review B, 2008, 78, .	1.1	40
10	Impact of momentum dependent matrix elements on scattering effects in quantum cascade lasers. Physica Status Solidi (B): Basic Research, 2009, 246, 329-331.	0.7	37
11	Intersubband gain without global inversion through dilute nitride band engineering. Applied Physics Letters, 2011, 98, .	1.5	37
12	Manyâ€body treatment on the modulation response in a strained quantum well semiconductor laser medium. Applied Physics Letters, 1992, 61, 758-760.	1.5	36
13	The linewidth enhancement factor of intersubband lasers: From a two-level limit to gain without inversion conditions. Applied Physics Letters, 2016, 109, .	1.5	36
14	Optical nonlinearities in strainedâ€layer InGaAs/GaAs multiple quantum wells. Applied Physics Letters, 1992, 61, 1745-1747.	1.5	35
15	Coupling of THz radiation with intervalence band transitions in microcavities. Optics Express, 2014, 22, 3439.	1.7	34
16	Controlling the harmonic conversion efficiency in semiconductor superlattices by interface roughness design. AIP Advances, 2019, 9, .	0.6	34
17	Influence of Coulomb correlations on gain and stimulated emission in (Zn,Cd)Se/Zn(S,Se)/(Zn,Mg)(S,Se) quantum-well lasers. Physical Review B, 1998, 58, 2055-2063.	1.1	33
18	Effects of strain and Coulomb interaction on gain and refractive index in quantum-well lasers. Journal of the Optical Society of America B: Optical Physics, 1993, 10, 765.	0.9	32

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19	Greenâ€™s functions theory for semiconductor-quantum-well laser spectra. Physical Review B, 1996, 53, 16485-16496.	1.1	32
20	Fingerprints of spatial charge transfer in quantum cascade lasers. Journal of Applied Physics, 2007, 102, .	1.1	32
21	Manyâ€body effects in the gain spectra of strained quantum wells. Applied Physics Letters, 1991, 59, 2941-2943.	1.5	31
22	Highâ€density effects, stimulated emission, and electrooptical properties of ZnCdSe/ZnSe single quantum wells and laser diodes. Physica Status Solidi (B): Basic Research, 1996, 194, 199-217.	0.7	31
23	Analytical solutions for the optical absorption of semiconductor superlattices. Physical Review B, 1995, 52, 1978-1983.	1.1	30
24	Characterization of intersubband devices combining a nonequilibrium many body theory with transmission spectroscopy experiments. Journal of Materials Science: Materials in Electronics, 2007, 18, 689-694.	1.1	29
25	Momentum dependent scattering matrix elements in quantum cascade laser transport. Microelectronics Journal, 2009, 40, 869-871.	1.1	29
26	Microscopic Theory for the Optical Properties of Coulomb-Correlated Semiconductors. Physica Status Solidi (B): Basic Research, 1998, 206, 477-491.	0.7	28
27	Simple electron-electron scattering in non-equilibrium Green's function simulations. Journal of Physics: Conference Series, 2016, 696, 012013.	0.3	28
28	Giant controllable gigahertz to terahertz nonlinearities in superlattices. Scientific Reports, 2020, 10, 15950.	1.6	26
29	Analytical solutions for semiconductor luminescence including Coulomb correlations with applications to dilute bismides. Journal of the Optical Society of America B: Optical Physics, 2017, 34, 321.	0.9	25
30	Superlattice nonlinearities for Gigahertz-Terahertz generation in harmonic multipliers. Nanophotonics, 2020, 9, 3941-3952.	2.9	24
31	Potential and limits of superlattice multipliers coupled to different input power sources. Journal of Nanophotonics, 2019, 13, 1.	0.4	22
32	TERA-MIR radiation: materials, generation, detection and applications II. Optical and Quantum Electronics, 2015, 47, 815-820.	1.5	18
33	TERA-MIR radiation: materials, generation, detection and applications. Optical and Quantum Electronics, 2014, 46, 491-493.	1.5	17
34	The influence of dephasing in the coupling of light with intersubband transitions. Microelectronics Journal, 2009, 40, 841-843.	1.1	9
35	Interaction of valence band excitations and terahertz TE-polarized cavity modes. Optical and Quantum Electronics, 2014, 46, 527-531.	1.5	9
36	Optical gain characteristics and excitonic nonlinearities in IIâ€“VI laser diodes. Journal of Crystal Growth, 1998, 184-185, 575-579.	0.7	6

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37	Simulation of Transport and Gain in Quantum Cascade Lasers. Advances in Solid State Physics, 0, , 369-382.	0.8	6
38	Effect of Coulomb corrections and mean field on gain and absorption in quantum cascade lasers. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 3027-3030.	0.8	6
39	Nonlinear Polaritons in Anisotropic Superlattices. Physica Status Solidi A, 1997, 164, 199-203.	1.7	5
40	Many-body theory for IIâ€“VI semiconductor laser media. , 1999, , 61-73.		4
41	Anisotropy and nonlinearity in superlattices. Optical and Quantum Electronics, 2016, 48, 1.	1.5	4
42	Bleaching of excitonic absorption in IIâ€“VI laser diodes under lasing conditions. Journal of Crystal Growth, 1996, 159, 661-666.	0.7	3
43	The Influence of Many-Body and Bandstructure Effects in the Design of High Power Diode Lasers. Physica Status Solidi (B): Basic Research, 2002, 232, 134-137.	0.7	3
44	The influence of many body and electron nonparabolicity effects in the intersubband optical spectra of IIIâ€“V quantum wells. Microelectronic Engineering, 2003, 69, 261-264.	1.1	3
45	Microscopic theory for the valence intersubband absorption of quantum wells. Microelectronic Engineering, 2005, 81, 510-513.	1.1	3
46	Numerical study of high impedance T-match antennas for terahertz photomixers. Optical and Quantum Electronics, 2015, 47, 913-922.	1.5	3
47	Numerical studies of superlattice multipliers performance. , 2019, , .		3
48	Many-body theory for multiple intersubband absorption in heterostructures. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 17, 618-619.	1.3	2
49	Coulomb and bandstructure effects in the intersubband optical spectra of IIIâ€“V quantum wells. Materials Science in Semiconductor Processing, 2003, 6, 149-152.	1.9	2
50	Microscopic theory for intersubband spontaneous emission. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 356-359.	0.8	2
51	Many body theory of THz intervalence gain in quantum wells. Optical and Quantum Electronics, 2008, 40, 1091-1095.	1.5	2
52	Simulations of mid infrared emission of InAsN semiconductors. Optical and Quantum Electronics, 2015, 47, 829-834.	1.5	2
53	Anisotropy and nonlinearity in superlattices II. Optical and Quantum Electronics, 2016, 48, 1.	1.5	2
54	Analytical expressions for the luminescence of dilute quaternary InAs(N,Sb) semiconductors. Journal of Nanophotonics, 2017, 11, 026005.	0.4	2

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55	Recent Advances in Superlattice Frequency Multipliers. NATO Science for Peace and Security Series B: Physics and Biophysics, 2021, , 101-116.	0.2	2
56	Nonlinear polaritons in IIâ€“VI MQW heterostructures. Journal of Crystal Growth, 2000, 214-215, 862-865.	0.7	1
57	Intersubband vs interband-light coupling in semiconductors. Optical and Quantum Electronics, 2008, 40, 325-329.	1.5	1
58	A microscopic approach for THz intersubband challenges. , 2009, , .		1
59	Valence intersubband gain without population inversion. Open Physics, 2010, 8, .	0.8	1
60	Anisotropic Medium Approach for the Optical Nonlinearities of Dilute Nitride Superlattices. NATO Science for Peace and Security Series B: Physics and Biophysics, 2017, , 113-120.	0.2	1
61	Automated numerical characterization of dilute semiconductors per comparison with luminescence. Optical and Quantum Electronics, 2017, 49, 1.	1.5	1
62	Luminescence and absorption in short period superlattices. Optical and Quantum Electronics, 2018, 50, 1.	1.5	1
63	Intersubband Antipolaritons in Quantum Cascade Laser Structures. Acta Physica Polonica A, 2008, 113, 783-786.	0.2	1
64	Facing the challenges of THz quantum cascade laser device development: the relevance of nonequilibrium many body theories. , 0, , .		0
65	Increasing Absorption Bistability in Coupled Band Quantum Wells. Physica A: Statistical Mechanics and Its Applications, 2000, 283, 277-280.	1.2	0
66	Many body theory for luminescence in quantum wells. , 0, , .		0
67	Microscopic theory for the intersubband optical responses of quantum well laser media. , 2005, , .		0
68	Modeling of transport and gain in quantum cascade lasers. , 0, , .		0
69	Many body and nonparabolicity effects in the intersubband transitions of conduction and valence bands of quantum well media. , 0, , .		0
70	Microscopic Intersubband Optics: Nonequilibrium Many-Body Physics Meets Device Engineering. , 2006, , .		0
71	Probing the electronic and optical properties of quantum cascade lasers under operating conditions. , 2006, 6386, 81.		0
72	Intersubband Antipolariton: A New Quasiparticle. , 2007, , .		0

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73	Nonequilibrium Green’s function simulation of quantum cascade laser structures. , 2008, , .		0
74	Intersubband lasing without inversion. , 2008, , .		0
75	The alpha factor of a quantum cascade laser. , 2008, , .		0
76	Current challenges for the development of efficient short wavelength mid infrared quantum cascade lasers. , 2008, , .		0
77	Interband vs. intersubband polaritons and the relevance of quantum confinement. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 424-427.	0.8	0
78	Predictive nonequilibrium Green's function simulation of transport in THz quantum cascade lasers. , 2009, , .		0
79	Predictive microscopic approach to transport in THz quantum cascade lasers. Journal of Physics: Conference Series, 2010, 242, 012009.	0.3	0
80	21st century optical engineering: Manipulating nonequilibrium many body effects to Create new TERA-MIR sources. , 2010, , .		0
81	Predictive microscopic approach to transport and optics in THz quantum cascade lasers. , 2010, , .		0
82	Dilute nitride band engineering: A tool for intersubband gain without population inversion. , 2011, , .		0
83	Concepts for gain without inversion through dilute nitride band engineering. , 2011, , .		0
84	Engineering intersubband population inversion with dilute nitrides. , 2011, , .		0
85	Introduction to the OQE special issue on Numerical Simulation of Optoelectronic Devices NUSODâ€™10. Optical and Quantum Electronics, 2011, 42, 657-658.	1.5	0
86	Impact of intersubband dispersive gain in semiconductor quantum optics. , 2012, , .		0
87	Intersubband thermophotovoltaics. Journal of Physics: Conference Series, 2012, 367, 012011.	0.3	0
88	THz intervalence band polaritons and antipolaritons. , 2013, , .		0
89	Mid infrared luminescence of dilute nitride semiconductors: microscopic approach vs experiments. , 2014, , .		0
90	THz valence band polaritons and antipolaritons. Proceedings of SPIE, 2014, , .	0.8	0

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91	THz intervalence band antipolaritons. Journal of Physics: Conference Series, 2014, 526, 012006.	0.3	0
92	The relevance of dephasing in THz intervalence band antipolariton dispersion relations. , 2014, , .		0
93	Microscopic theory for the luminescence of mid infrared semiconductor materials. , 2014, , .		0
94	THz and Mid Infrared (TERA-MIR) semiconductor materials: From microscopic theory to industrial applications. , 2014, , .		0
95	Band anticrossing and luminescence emission in dilute InAs<inf>1−x−y</inf>N<inf>x</inf>Sb<inf>y</inf> quaternary alloys. , 2015, , .		0
96	Progress on TERA-MIR Radiation: Materials, Generation, Detection, and Applications. , 2015, , .		0
97	The relevance of dephasing in THz valence band polariton dispersion relations. Optical and Quantum Electronics, 2015, 47, 937-943.	1.5	0
98	Many body effects in THz valence band polaritons. , 2015, , .		0
99	Numerical simulation of high impedance T-match antennas for terahertz photomixers. Proceedings of SPIE, 2015, , .	0.8	0
100	Advances in the science of light. Optical and Quantum Electronics, 2016, 48, 1.	1.5	0
101	The linewidth enhancement factor of intersubband lasers. , 2017, , .		0
102	Efficient Algorithms for Optical Properties of Short Period Semiconductor Superlattices. , 2018, , .		0
103	Harmonic Generation in Semiconductor Superlattices with Applications from the 100 GHz to the 1 THz Range. , 2018, , .		0
104	Materials for Nonlinear Optics in the GHz-THz Range. , 2019, , .		0
105	Controlling Nonlinearities in Semiconductor Superlattice Multipliers. , 2021, , .		0
106	FAR INFRARED LASERS WITHOUT INVERSION BASED ON INTERSUBBAND TRANSITIONS IN SEMICONDUCTORS. , 2009, , .		0
107	Intervalence THz Antipolaritons. NATO Science for Peace and Security Series B: Physics and Biophysics, 2014, , 19-24.	0.2	0
108	Intersubband Dispersive Gain Media. NATO Science for Peace and Security Series B: Physics and Biophysics, 2014, , 117-121.	0.2	0