

Roberto Paiella

List of Publications by Year in descending order

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93
papers

2,251
citations

185998

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95
all docs

95
docs citations

95
times ranked

2534
citing authors

#	ARTICLE	IF	CITATIONS
1	Direct-bandgap light-emitting germanium in tensilely strained nanomembranes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18893-18898.	3.3	219
2	Optoelectronic device physics and technology of nitride semiconductors from the UV to the terahertz. Reports on Progress in Physics, 2017, 80, 106501.	8.1	165
3	High-frequency modulation without the relaxation oscillation resonance in quantum cascade lasers. Applied Physics Letters, 2001, 79, 2526-2528.	1.5	131
4	Monte Carlo study of GaN versus GaAs terahertz quantum cascade structures. Applied Physics Letters, 2008, 92, .	1.5	98
5	Monte Carlo simulation of terahertz quantum cascade laser structures based on wide-bandgap semiconductors. Journal of Applied Physics, 2009, 105, .	1.1	98
6	Strained-Germanium Nanostructures for Infrared Photonics. ACS Nano, 2014, 8, 3136-3151.	7.3	80
7	Enhanced near-green light emission from InGaN quantum wells by use of tunable plasmonic resonances in silver nanoparticle arrays. Optics Express, 2010, 18, 21322.	1.7	69
8	Ultrafast all-optical switching with low saturation energy via intersubband transitions in GaN/AlN quantum-well waveguides. Optics Express, 2007, 15, 17922.	1.7	67
9	Tunable surface plasmons in coupled metallo-dielectric multiple layers for light-emission efficiency enhancement. Applied Physics Letters, 2005, 87, 111104.	1.5	63
10	Far-infrared intersubband photodetectors based on double-step III-nitride quantum wells. Applied Physics Letters, 2012, 100, 241113.	1.5	60
11	Graphene plasmonic devices for terahertz optoelectronics. Nanophotonics, 2020, 9, 1901-1920.	2.9	59
12	Quantification of Multiple Molecular Fingerprints by Dual-Resonant Perfect Absorber. Advanced Optical Materials, 2016, 4, 1274-1280.	3.6	56
13	Monolithic active mode locking of quantum cascade lasers. Applied Physics Letters, 2000, 77, 169-171.	1.5	53
14	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.	1.5	52
15	Tensilely Strained Germanium Nanomembranes as Infrared Optical Gain Media. Small, 2013, 9, 622-630.	5.2	52
16	Plasmonic ommatidia for lensless compound-eye vision. Nature Communications, 2020, 11, 1637.	5.8	51
17	Silicon-based injection lasers using electronic intersubband transitions in the L valleys. Applied Physics Letters, 2006, 89, 191110.	1.5	45
18	Plasmon-enhanced light emission based on lattice resonances of silver nanocylinder arrays. Optics Letters, 2012, 37, 79.	1.7	42

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19	Terahertz intersubband photodetectors based on semi-polar GaN/AlGaIn heterostructures. Applied Physics Letters, 2016, 108, .	1.5	42
20	Nonlinear optical waveguides based on near-infrared intersubband transitions in GaN/AlIn quantum wells. Optics Express, 2007, 15, 5860.	1.7	40
21	Intersubband absorption in AlN/GaN/AlGaIn coupled quantum wells. Applied Physics Letters, 2007, 91, 141104.	1.5	37
22	Investigation of the design parameters of AlN/GaN multiple quantum wells grown by molecular beam epitaxy for intersubband absorption. Journal of Crystal Growth, 2005, 278, 387-392.	0.7	34
23	Optically pumped intersubband emission of short-wave infrared radiation with GaN/AlIn quantum wells. Applied Physics Letters, 2009, 94, 081120.	1.5	34
24	Development of AlGaIn-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, .	0.6	33
25	High-speed operation of gain-switched midinfrared quantum cascade lasers. Applied Physics Letters, 1999, 75, 2536-2538.	1.5	32
26	Current-Driven Terahertz Light Emission from Graphene Plasmonic Oscillations. ACS Photonics, 2019, 6, 2562-2569.	3.2	32
27	Uniaxial Strain Redistribution in Corrugated Graphene: Clamping, Sliding, Friction, and 2D Band Splitting. Nano Letters, 2015, 15, 5969-5975.	4.5	31
28	Plasmon enhanced light emission from InGaIn quantum wells via coupling to chemically synthesized silver nanoparticles. Applied Physics Letters, 2009, 95, 151109.	1.5	30
29	Multiple-junction quantum cascade photodetectors for thermophotovoltaic energy conversion. Optics Express, 2010, 18, 1618.	1.7	27
30	Deep-Ultraviolet Emitting AlGaIn Multiple Quantum Well Graded-Index Separate-Confinement Heterostructures Grown by MBE on SiC Substrates. IEEE Photonics Journal, 2017, 9, 1-9.	1.0	27
31	Sub-250-nm light emission and optical gain in AlGaIn materials. Journal of Applied Physics, 2013, 113, .	1.1	24
32	Graphene on nanoscale gratings for the generation of terahertz Smith-Purcell radiation. Applied Physics Letters, 2014, 105, .	1.5	24
33	Sequential tunneling transport characteristics of GaN/AlGaIn coupled-quantum-well structures. Journal of Applied Physics, 2010, 108, 103704.	1.1	22
34	Graphene electronics for terahertz electron-beam radiation. Nanotechnology, 2013, 24, 375205.	1.3	22
35	Strain Engineered SiGe Multiple-Quantum-Well Nanomembranes for Far-Infrared Intersubband Device Applications. ACS Nano, 2013, 7, 2326-2334.	7.3	22
36	SiGe Nanomembrane Quantum-Well Infrared Photodetectors. ACS Photonics, 2016, 3, 1978-1985.	3.2	22

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37	Plasmonic off-axis unidirectional beaming of quantum-well luminescence. Applied Physics Letters, 2013, 103, .	1.5	18
38	Grating-coupled mid-infrared light emission from tensilely strained germanium nanomembranes. Applied Physics Letters, 2013, 103, 201114.	1.5	18
39	Giant distributed optical-field enhancements from Mie-resonant lattice surface modes in dielectric metasurfaces. OSA Continuum, 2019, 2, 32.	1.8	18
40	Intersubband all-optical switching based on Coulomb-induced optical nonlinearities in GaN/AlGaIn coupled quantum wells. Semiconductor Science and Technology, 2006, 21, 1105-1110.	1.0	15
41	Refractive-index nonlinearities of intersubband transitions in GaN/AlN quantum-well waveguides. Journal of Applied Physics, 2008, 104, 083101.	1.1	15
42	Graphene Terahertz Plasmons: A Combined Transmission Spectroscopy and Raman Microscopy Study. ACS Photonics, 2017, 4, 2011-2017.	3.2	15
43	Measurement of the interwell carrier transport lifetime in multi-quantum-well optical amplifiers by polarization-resolved four-wave mixing. Applied Physics Letters, 1996, 69, 4142-4144.	1.5	13
44	Polarization Properties of Deep-Ultraviolet Optical Gain in Al-Rich AlGaIn Structures. Applied Physics Express, 2012, 5, 032103.	1.1	13
45	Geometrically Tunable Beamed Light Emission from a Quantum-Dot Ensemble Near a Gradient Metasurface. Advanced Optical Materials, 2020, 8, 1901951.	3.6	12
46	Electroabsorption modulators based on bulk GaIn films and GaIn/AlGaIn multiple quantum wells. Journal of Applied Physics, 2011, 109, 083102.	1.1	11
47	Plasmonic dispersion engineering of coupled metal nanoparticle-film systems. Journal of Applied Physics, 2012, 111, 103102.	1.1	11
48	Ultrawide strain-tuning of light emission from InGaAs nanomembranes. Applied Physics Letters, 2018, 113, 201105.	1.5	11
49	A Polarization Insensitive Wide-Band Perfect Absorber. Advanced Engineering Materials, 2019, 21, 1900188.	1.6	11
50	Flexible nanomembrane photonic-crystal cavities for tensilely strained-germanium light emission. Applied Physics Letters, 2016, 108, 241107.	1.5	10
51	Highly nondegenerate four-wave mixing efficiency of an asymmetric coupled quantum well structure. Applied Physics Letters, 1995, 66, 2619-2621.	1.5	8
52	Numerical Simulation of ZnO-Based Terahertz Quantum Cascade Lasers. Journal of Electronic Materials, 2010, 39, 1097-1103.	1.0	8
53	Light Emission near a Gradient Metasurface. ACS Photonics, 2016, 3, 243-248.	3.2	8
54	Intersubband Absorption in AlGaIn/GaIn Quantum Wells. , 0, , 117-143.		6

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55	Terahertz radiation processes in critically coupled graphene plasmonic nanostructures. Journal of Applied Physics, 2020, 128, .	1.1	5
56	Optical and structural characterization of GaN/AlGaIn quantum wells for intersubband device applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2394-2397.	0.8	3
57	Going ultrafast. Nature Photonics, 2011, 5, 253-255.	15.6	3
58	Sequential tunneling transport in GaN/AlGaIn quantum cascade structures. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 588-591.	0.8	3
59	Numerical simulation of III-nitride lattice-matched structures for quantum cascade lasers. , 2014, , .		3
60	Tunable terahertz metasurface platform based on CVD graphene plasmonics. Optics Express, 2021, 29, 40594.	1.7	3
61	One-dimensional carbon nanostructures for terahertz electron-beam radiation. Physical Review B, 2016, 93, .	1.1	2
62	Optical Properties of Tensilely Strained Ge Nanomembranes. Nanomaterials, 2018, 8, 407.	1.9	2
63	Interminiband Optical Transitions in Graphene Lateral Superlattices. ACS Photonics, 2018, 5, 3331-3337.	3.2	2
64	Strain-Induced Lateral Heterostructures in Patterned Semiconductor Nanomembranes for Micro- and Optoelectronics. ACS Applied Nano Materials, 2021, 4, 6160-6169.	2.4	2
65	Four-wave mixing mediated by the capture of electrons and holes in semiconductor quantum-well laser amplifiers. Applied Physics Letters, 1997, 71, 3601-3603.	1.5	1
66	GaN/AlN Nonlinear Optical Waveguides for Ultrafast Intersubband All-Optical Switching. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	1
67	Intersubband device applications of nitride quantum structures. , 2010, , .		1
68	Tensilely strained germanium nanomembranes for direct-bandgap infrared light emission. Proceedings of SPIE, 2014, , .	0.8	1
69	Directional Plasmonic Image Sensors for Lens-Free Compound-Eye Vision. , 2018, , .		1
70	Graphene on nanoscale gratings: a novel materials platform for THz electron-beam radiation. , 2015, , .		1
71	Direct-Bandgap Germanium Active Layers Pumped Above Transparency Based on Tensilely Strained Nanomembranes. , 2011, , .		1
72	Silicon-Based Quantum Cascade Lasers using Electronic Intersubband Transitions in the L Valleys. , 2006, , .		0

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73	AlN/GaN/AlGaN Coupled Quantum Wells for Short-Wavelength Intersubband Devices. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	0
74	Monte Carlo study of the temperature dependent performance of GaN versus GaAs terahertz quantum cascade structures. , 2008, , .		0
75	Intersubband nonlinear optical processes in GaN/AlN quantum-well waveguides. , 2008, , .		0
76	Experimental Observation of Sequential Tunneling Transport in GaN/AlGaN Coupled Quantum Wells Grown on a Free-Standing GaN Substrate. Materials Research Society Symposia Proceedings, 2009, 1202, 232.	0.1	0
77	Short-Wavelength Intersubband Light Emission from Optically Pumped GaN/AlN Quantum Wells. Materials Research Society Symposia Proceedings, 2009, 1202, 257.	0.1	0
78	Intersubband transitions in GaN-based quantum wells: a new materials platform for infrared device applications. Proceedings of SPIE, 2010, , .	0.8	0
79	Mechanically Flexible Photonic-Crystal Cavities on Strained-Germanium Nanomembranes. , 2014, , .		0
80	Correction to "Interminiband Optical Transitions in Graphene Lateral Superlattices" ACS Photonics, 2019, 6, 238-239.	3.2	0
81	Graphene plasmonic terahertz lamps. , 2021, , .		0
82	Plasmonic Directional Photodetectors for Edge Enhancement. , 2021, , .		0
83	Plasmonic Metasurfaces for Directional Light Emission and Photodetection. , 2021, , .		0
84	Plasmon-Enhanced Near-Green Light Emission from InGaN/GaN Quantum Wells. ECS Meeting Abstracts, 2011, , .	0.0	0
85	Graphene on nanoscale gratings for terahertz Smith-Purcell radiation. , 2015, , .		0
86	Mechanically Flexible Photonic-Crystal Cavities on Strained Germanium Fabricated by Nanomembrane Assembly. , 2016, , .		0
87	GaN Terahertz Photodetectors for the Reststrahlen Gap of Intersubband Optoelectronics. , 2017, , .		0
88	III-nitride terahertz photodetectors for the Reststrahlen gap of intersubband optoelectronics. , 2017, , .		0
89	Beamed Light Emission near a Gradient Metasurfaces. , 2018, , .		0
90	Ultrawide Strain Tuning of Luminescence from Mechanically Stressed InGaAs Nanomembranes. , 2019, , .		0

#	ARTICLE	IF	CITATIONS
91	Plasmonic Computational Compound-Eye Camera. Optics and Photonics News, 2020, 31, 41.	0.4	0
92	Plasmonic Metasurfaces for the Near-Field Directional Control of Spontaneous Light Emission. , 2020, , .		0
93	Tunable Terahertz Light Emission from Current-Driven Graphene Plasmonic Oscillators. , 2020, , .		0