Eoin P O'reilly

List of Publications by Year in descending order

284 papers	11,155 citations	36203 51 h-index	38300 95 g-index
286 all docs	286 docs citations	286 times ranked	5631 citing authors

#	Article	IF	Citations
1	Electronic and atomic structure of amorphous carbon. Physical Review B, 1987, 35, 2946-2957.	1.1	1,274
2	Inverted Electron-Hole Alignment in InAs-GaAs Self-Assembled Quantum Dots. Physical Review Letters, 2000, 84, 733-736.	2.9	467
3	Theory of defects in vitreous silicon dioxide. Physical Review B, 1983, 27, 3780-3795.	1.1	414
4	Valence band engineering in strained-layer structures. Semiconductor Science and Technology, 1989, 4, 121-137.	1.0	390
5	Theory of the electronic structure of GaN/AlN hexagonal quantum dots. Physical Review B, 2000, 62, 15851-15870.	1.1	320
6	Theory of enhanced bandgap non-parabolicity in GaNxAs1âˆ’x and related alloys. Solid State Communications, 1999, 112, 443-447.	0.9	240
7	Strain distributions in quantum dots of arbitrary shape. Journal of Applied Physics, 1999, 86, 297-305.	1.1	207
8	Tight-binding analysis of the electronic structure of dilute bismide alloys of GaP and GaAs. Physical Review B, 2011, 84, .	1.1	193
9	Unification of the Band Anticrossing and Cluster-State Models of Dilute Nitride Semiconductor Alloys. Physical Review Letters, 2004, 93, 196402.	2.9	186
10	Band-structure engineering in strained semiconductor lasers. IEEE Journal of Quantum Electronics, 1994, 30, 366-379.	1.0	185
11	Theoretical analysis of electron-hole alignment in InAs-GaAs quantum dots. Physical Review B, 2000, 61, 13840-13851.	1.1	164
12	Band engineering in dilute nitride and bismide semiconductor lasers. Semiconductor Science and Technology, 2012, 27, 094011.	1.0	150
13	Tight-binding and kÂ·p models for the electronic structure of Ga(In)NAs and related alloys. Semiconductor Science and Technology, 2002, 17, 870-879.	1.0	140
14	Theoretical and experimental analysis of 1.3-Î¼m InGaAsN/GaAs lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2003, 9, 1228-1238.	1.9	137
15	A quantitative study of radiative, Auger, and defect related recombination processes in 1.3-Î¼m GaInNAs-based quantum-well lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2002, 8, 801-810.	1.9	136
16	Dynamics of light propagation in spatiotemporal dielectric structures. Physical Review E, 2007, 75, 046607.	0.8	124
17	Evaluation of various approximations used in the envelope-function method. Physical Review B, 1994, 50, 10893-10904.	1.1	106
18	The effect of temperature dependent processes on the performance of 1.5-Î¼m compressively strained InGaAs(P) MQW semiconductor diode lasers. IEEE Photonics Technology Letters, 1998, 10, 1076-1078.	1.3	105

#	Article	IF	Citations
19	Atomistic analysis of the impact of alloy and well-width fluctuations on the electronic and optical properties of InGaN/GaN quantum wells. Physical Review B, 2015, 91, .	1.1	105
20	Electronic structure of amorphous III-V and II-VI compound semiconductors and their defects. Physical Review B, 1986, 34, 8684-8695.	1.1	103
21	Trends in the electronic structure of dilute nitride alloys. Semiconductor Science and Technology, 2009, 24, 033001.	1.0	101
22	Theory of local electric polarization and its relation to internal strain: Impact on polarization potential and electronic properties of group-III nitrides. Physical Review B, 2013, 88, .	1.1	101
23	Optical transitions and radiative lifetime in GaN/AlN self-organized quantum dots. Applied Physics Letters, 2001, 79, 521-523.	1.5	97
24	Intrinsic limits on electron mobility in dilute nitride semiconductors. Applied Physics Letters, 2003, 83, 3731-3733.	1.5	96
25	Influence of conduction-band nonparabolicity on electron confinement and effective mass inGaNxAs1âˆ’xâˆ•GaAsquantum wells. Physical Review B, 2004, 69, .	1.1	94
26	A simple method for calculating strain distributions in quantum dot structures. Journal of Applied Physics, 1997, 81, 6700-6702.	1.1	92
27	Temperature sensitivity and high temperature operation of long wavelength semiconductor lasers. Applied Physics Letters, 1993, 63, 3318-3320.	1.5	87
28	Analytic solutions for strain distributions in quantum-wire structures. Journal of Applied Physics, 1997, 82, 3754-3762.	1.1	80
29	Monolithic infrared silicon photonics: The rise of (Si)GeSn semiconductors. Applied Physics Letters, 2021, 118, .	1.5	80
30	Impact of alloy disorder on the band structure of compressively strained GaBi<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mi>x</mml:mi></mml:msub></mml:math>As<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>1</mml:mn><mml:mo>âˆ’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>. Physical Review B, 2013, 87, .	1.1	74
31	k Â· P Model of Ordered GaNxAs1â€"x. Physica Status Solidi (B): Basic Research, 1999, 216, 131-134.	0.7	73
32	Gain spectra of (GaIn)(NAs) laser diodes for the 1.3-Î¼m-wavelength regime. Applied Physics Letters, 2001, 78, 3009-3011.	1.5	73
33	Theory of reduced built-in polarization field in nitride-based quantum dots. Physical Review B, 2010, 82, .	1.1	71
34	Theory of the hole subband dispersion in strained and unstrained quantum wells. Physical Review B, 1986, 34, 6030-6033.	1.1	69
35	Active Region Design for High-Speed 850-nm VCSELs. IEEE Journal of Quantum Electronics, 2010, 46, 506-512.	1.0	69
36	Derivation of 12- and 14-bandkÂ·pHamiltonians for dilute bismide and bismide-nitride semiconductors. Semiconductor Science and Technology, 2013, 28, 125025.	1.0	69

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37	Gain in 1.3 Î¼m materials: InGaNAs and InGaPAs semiconductor quantum-well lasers. Applied Physics Letters, 2000, 77, 630-632.	1.5	67
38	Carrier-induced refractive index in quantum dot structures due to transitions from discrete quantum dot levels to continuum states. Applied Physics Letters, 2004, 84, 272-274.	1.5	66
39	Improved performance due to suppression of spontaneous emission in tensile-strain semiconductor lasers. Electronics Letters, 1991, 27, 1417.	0.5	64
40	Influence of nitrogen resonant states on the electronic structure of GaNxAs1âˆ’x. Solid State Communications, 2001, 118, 313-317.	0.9	64
41	InSb1âˆ’xNx growth and devices. Solid-State Electronics, 2003, 47, 387-394.	0.8	64
42	Auger recombination in long-wavelength infrared InNxSb1âˆ’x alloys. Applied Physics Letters, 2001, 78, 1568-1570.	1.5	63
43	Optical gain in GaAsBi/GaAs quantum well diode lasers. Scientific Reports, 2016, 6, 28863.	1.6	61
44	Pressure dependence ofDXcenter mobility in highly doped GaAs. Applied Physics Letters, 1989, 55, 1409-1411.	1.5	58
45	Process parameter dependence of impurity-free interdiffusion in GaAs/AlxGa1âˆ’xAs and InxGa1âˆ’yAs/GaAs multiple quantum wells. Journal of Electronic Materials, 1995, 24, 805-812.	1.0	58
46	Composition-Dependent Band Gap and Band-Edge Bowing in AlInN: A Combined Theoretical and Experimental Study. Applied Physics Express, 2013, 6, 121001.	1.1	58
47	On gain saturation in quantum dot semiconductor optical amplifiers. Optics Communications, 2005, 248, 211-219.	1.0	57
48	Structural, electronic, and optical properties of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>m</mml:mi></mml:math>-plane InGaN/GaN quantum wells: Insights from experiment and atomistic theory. Physical Review B, 2015, 92, .	1.1	57
49	On Ultrafast Optical Switching Based on Quantum-Dot Semiconductor Optical Amplifiers in Nonlinear Interferometers. IEEE Photonics Technology Letters, 2004, 16, 1265-1267.	1.3	55
50	Symmetry-adapted calculations of strain and polarization fields in (111)-oriented zinc-blende quantum dots. Physical Review B, 2011, 84, .	1.1	54
51	Improved performance of long-wavelength strained bulk-like semiconductor lasers. IEEE Journal of Quantum Electronics, 1993, 29, 1344-1354.	1.0	53
52	Improved dynamics and linewidth enhancement factor in strained-layer lasers. Electronics Letters, 1989, 25, 821.	0.5	52
53	Internal photoemission from plasmonic nanoparticles: comparison between surface and volume photoelectric effects. Nanoscale, 2014, 6, 4716.	2.8	52
54	Evidence of type-I band offsets in strainedGaAs1âˆ’xSbx/GaAs quantum wells from high-pressure photoluminescence. Physical Review B, 1993, 47, 2191-2196.	1.1	51

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55	Nature of the band gap of silicon and germanium nanowires. Physica E: Low-Dimensional Systems and Nanostructures, 2006, 32, 341-345.	1.3	50
56	Experimental analysis of temperature dependence in 1.3-Î¼m AlGaInAs-InP strained MQW lasers. IEEE Journal of Selected Topics in Quantum Electronics, 1999, 5, 413-419.	1.9	49
57	Strain-induced valence-subband splitting in III-V semiconductors. Physical Review B, 1992, 46, 6781-6788.	1.1	48
58	Theory of the electronic structure of dilute nitride alloys: beyond the band-anti-crossing model. Journal of Physics Condensed Matter, 2004, 16, S3257-S3276.	0.7	48
59	Theory of improved spectral purity in index patterned Fabry-PÃ©rot lasers. Applied Physics Letters, 2005, 86, 201101.	1.5	48
60	Broadening of Plasmonic Resonance Due to Electron Collisions with Nanoparticle Boundary: Ð° Quantum Mechanical Consideration. Plasmonics, 2014, 9, 185-192.	1.8	48
61	Valence subband structure and optical gain of GaAs-AlGaAs (111) quantum wells. Semiconductor Science and Technology, 1989, 4, 904-909.	1.0	47
62	Band gap bowing and optical polarization switching in AlGaN alloys. Physica Status Solidi (B): Basic Research, 2015, 252, 879-884.	0.7	46
63	Theory of optical gain in ideal GaN heterostructure lasers. Applied Physics Letters, 1995, 67, 3013-3015.	1.5	45
64	Spectral and dynamic properties of InAs-GaAs self-organized quantum-dot lasers. IEEE Journal of Selected Topics in Quantum Electronics, 1999, 5, 648-657.	1.9	45
65	A simple method for calculating strain distributions in quantumâ€wire structures. Journal of Applied Physics, 1996, 80, 2515-2517.	1.1	44
66	Dependence of Threshold Current on QW Position and on Pressure in 1.5 ?m InGaAs(P) Lasers. Physica Status Solidi (B): Basic Research, 1999, 211, 525-531.	0.7	44
67	Influence of the valence-band offset on gain and absorption in GaNAs/GaAs quantum well lasers. Applied Physics Letters, 2000, 76, 3685-3687.	1.5	44
68	Evidence for large monomolecular recombination contribution to threshold current in 1.3 [micro sign]m GaInNAs semiconductor lasers. Electronics Letters, 2001, 37, 1518.	0.5	43
69	Interband transitions of quantum wells and device structures containing Ga(N, As) and (Ga, In)(N, As). Semiconductor Science and Technology, 2002, 17, 830-842.	1.0	43
70	Hydrostatic pressure coefficients of the photoluminescence ofInxGa1â^'xAs/GaAs strained-layer quantum wells. Physical Review B, 1990, 42, 3113-3119.	1.1	42
71	Eight-band kâ‹…p calculations of the composition contrast effect on the linear polarization properties of columnar quantum dots. Journal of Applied Physics, 2010, 107, .	1.1	42
72	Gain characteristics of ideal dilute nitride quantum well lasers. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 1102-1105.	1.3	41

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73	Polarization fields in nitride-based quantum dots grown on nonpolar substrates. Physical Review B, 2009, 79, .	1.1	41
74	The structure of amorphous GeSe and GeTe. Solid State Communications, 1981, 38, 565-568.	0.9	40
75	The influence of inter-diffusion on electron states in quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 1999, 4, 231-237.	1.3	40
76	A tight-binding-based analysis of the band anti-crossing model in GaNxAs1â^'x. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 21, 901-906.	1.3	40
77	Origin of nonlinear piezoelectricity in III-V semiconductors: Internal strain and bond ionicity from hybrid-functional density functional theory. Physical Review B, 2015, 91, .	1.1	40
78	Longitudinal mode grouping in InGaAs/GaAs/AlGaAs quantum dot lasers: Origin and means of control. Electronics Letters, 1998, 34, 2035.	0.5	39
79	Hybrid functional study of the elastic and structural properties of wurtzite and zinc-blende group-III nitrides. Physical Review B, 2012, 86, .	1.1	39
80	Low threshold current and high differential gain in ideal tensileâ€•and compressiveâ€strained quantumâ€well lasers. Journal of Applied Physics, 1992, 71, 4626-4628.	1.1	38
81	Optimization of long wavelength InGaAsP strained quantum-well lasers. IEEE Journal of Quantum Electronics, 1995, 31, 1193-1200.	1.0	38
82	Optical gain in wide bandgap GaN quantum well lasers. Semiconductor Science and Technology, 1996, 11, 897-903.	1.0	38
83	Built-in field control in alloyed<i>c</i>-plane III-N quantum dots and wells. Journal of Applied Physics, 2011, 109, 084110.	1.1	37
84	Electronic and optical properties of nonpolar<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>a</mml:mi></mml:math>-plane GaN quantum wells. Physical Review B, 2010, 82, .	1.1	36
85	On high-speed cross-gain modulation without pattern effects in quantum dot semiconductor optical amplifiers. Optics Communications, 2003, 227, 363-369.	1.0	35
86	Direct measurement and analysis of the conduction band density of states in diluted<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>GaAs</mml:mtext></mml:mrow><mml:mrow><mml:mn>1</mml: Physical Review B, 2010, 82, .	1.1	35
87	Ge1â^'xSnx alloys: Consequences of band mixing effects for the evolution of the band gap Î“-character with Sn concentration. Scientific Reports, 2019, 9, 14077.	1.6	35
88	Theoretical performance and structure optimization of 3.5â€“4.5 Î¼m InGaSb/InGaAlSb multiple-quantum-well lasers. Applied Physics Letters, 2001, 78, 2640-2642.	1.5	34
89	Complex emission dynamics of type-II GaSb/GaAs quantum dots. Applied Physics Letters, 2009, 95, 061102.	1.5	34
90	12â€band kâ€‰Â·â€‰p model for dilute bismide alloys of (In)GaAs derived from supercell calculations. Physica Status Solidi (B): Basic Research, 2013, 250, 773-778.	0.7	34

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91	Progress on Germaniumâ€"Tin Nanoscale Alloys. Chemistry of Materials, 2020, 32, 4383-4408.	3.2	34
92	Role of radiative and nonradiative processes on the temperature sensitivity of strained and unstrained 1.5 Î¼m InGaAs(P) quantum well lasers. Applied Physics Letters, 1995, 67, 3546-3548.	1.5	33
93	Theory of electron mobility in dilute nitride semiconductors. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 21, 881-885.	1.3	33
94	Optimization of material parameters in 1.3-Î¼m InGaAsN-GaAs lasers. IEEE Photonics Technology Letters, 2003, 15, 6-8.	1.3	32
95	Theoretical study of Auger recombination in a GaInNAs 1.3â€‚Î¼m quantum well laser structure. Applied Physics Letters, 2004, 84, 1826-1828.	1.5	32
96	Pressure and Temperature Dependent Studies of GaNxAs1-x/GaAs Quantum Well Structures. Physica Status Solidi (B): Basic Research, 2001, 223, 163-169.	0.7	31
97	Derivation of a 10-band model for dilute nitride semiconductors. Solid-State Electronics, 2003, 47, 443-446.	0.8	31
98	Anisotropic electron<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math>factor as a probe of the electronic structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">GaBi</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:msub><mml:mi mathvariant="normal">As</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^'</mml:mo><mml:mi>x</mml:mi></mml:mrow><	1.1	31
99	A generalized plane-wave formulation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mi mathvariant="bold">k</mml:mi><mml:mo>Â·</mml:mo><mml:mi mathvariant="bold">p</mml:mi></mml:mrow></mml:math> formalism and continuum-elasticity approach to elastic and electronic properties of semiconductor nanostructures. Computational Mate	1.4	31
100	Exciton-binding-energy maximum inGa1â^'xInxAs/GaAs quantum wells. Physical Review B, 1991, 43, 11944-11949.	1.1	30
101	Determination of the wavelength dependence of Auger recombination in long-wavelength quantum-well semiconductor lasers using hydrostatic pressure. IEEE Journal of Quantum Electronics, 1997, 33, 1557-1566.	1.0	30
102	Optical matrix element in InAsâ^•GaAs quantum dots: Dependence on quantum dot parameters. Applied Physics Letters, 2005, 87, 213106.	1.5	30
103	Spectral manipulation in Fabry-Perot lasers: perturbative inverse scattering approach. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 1046.	0.9	30
104	Noise-Assisted Crystallization of Opal Films. Advanced Functional Materials, 2012, 22, 1812-1821.	7.8	30
105	Comparison of stress and total energy methods for calculation of elastic properties of semiconductors. Journal of Physics Condensed Matter, 2013, 25, 025803.	0.7	30
106	Observation of reduced nonradiative current in 1.3-Î¼m AlGaInAs-InP strained MQW lasers. IEEE Photonics Technology Letters, 1999, 11, 409-411.	1.3	29
107	Design of Single-Mode and Two-Color Fabry--PÃ‰rot Lasers With Patterned Refractive Index. IEEE Journal of Selected Topics in Quantum Electronics, 2007, 13, 1157-1163.	1.9	29
108	Generation of CW 0.5â€…THz radiation by photomixing the output of a two-colour 1.49â€…[micro sign]m Fabry-Perot diode laser. Electronics Letters, 2008, 44, 296.	0.5	29

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109	Determination of type-I band offsets in GaBi_{<i>x</i>}As_{1â€"<i>x</i>}quantum wells using polarisation-resolved photovoltage spectroscopy and 12-band k.p calculations. Semiconductor Science and Technology, 2015, 30, 094009.	1.0	29
110	Insights into carrier recombination processes in 1.3 [micro sign]m GaInNAs-based semiconductor lasers attained using high pressure. Electronics Letters, 2001, 37, 92.	0.5	28
111	Calculations of the threshold current and temperature sensitivity of A (GaIn)As strained quantum well laser operating at 1.55 Î¼m. Superlattices and Microstructures, 1987, 3, 99-102.	1.4	27
112	High pressure determination of AlGaInP band structure. Journal of Physics and Chemistry of Solids, 1995, 56, 349-352.	1.9	27
113	Self-consistent calculations of exciton, biexciton and charged exciton energies in InGaN/GaN quantum dots. Superlattices and Microstructures, 2004, 36, 791-798.	1.4	27
114	Influence of confinement energy and band anticrossing effect on the electron effective mass inGa1â^'yInyNxAs1â^'xquantum wells. Physical Review B, 2005, 71, .	1.1	27
115	The Importance of Recombination via Excited States in InAs/GaAs $hbox{1.3};mu$m Quantum-Dot Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 799-807.	1.9	27
116	Theory of the Electronic and Optical Properties of Dilute Bismide Quantum Well Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 287-299.	1.9	27
117	Theory of GaN Quantum Dots for Optical Applications. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 1092-1103.	1.9	25
118	Biexciton and exciton dynamics in single InGaN quantum dots. Nanotechnology, 2005, 16, 1477-1481.	1.3	24
119	A flexible, plane-wave based multiband $${mathbf{k}cdotmathbf{p}}$$ model. Optical and Quantum Electronics, 2012, 44, 183-188.	1.5	24
120	Pressure dependence of light-hole transport in strained InGaAs/GaAs. Surface Science, 1990, 229, 122-125.	0.8	23
121	Influence of Electrostatic Confinement on Optical Gain in GaInNAs Quantum-Well Lasers. IEEE Journal of Quantum Electronics, 2006, 42, 608-615.	1.0	23
122	GaAs1â^'xBix/GaNyAs1â^'y type-II quantum wells: novel strain-balanced heterostructures for GaAs-based near- and mid-infrared photonics. Scientific Reports, 2017, 7, 46371.	1.6	23
123	The detection of chemical order in non-crystalline alloys from their valence s bands. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1983, 47, 621-626.	0.6	21
124	Coulomb effects in typeâ€II Ga(As)Sb quantum dots. Physica Status Solidi (B): Basic Research, 2009, 246, 752-755.	0.7	21
125	Impact of cation-based localized electronic states on the conduction and valence band structure of Al1â^'<i>x</i>In<i>x</i>N alloys. Applied Physics Letters, 2014, 104, .	1.5	21
126	Random alloy fluctuations and structural inhomogeneities in c-plane In_xGa_{1â^'x}N quantum wells: theory of ground and excited electron and hole states. RSC Advances, 2016, 6, 64513-64530.	1.7	21

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127	Valence-band-shape modification due to band coupling in strained quantum wells. Physical Review B, 1993, 47, 13926-13929.	1.1	20
128	Influence of strain relaxation on the electronic properties of buried quantum wells and wires. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1995, 35, 357-363.	1.7	20
129	Mechanism of Synchronization in Frequency Dividers. IEEE Transactions on Circuits and Systems I: Regular Papers, 2009, 56, 190-199.	3.5	20
130	The polarization response in InAs quantum dots: theoretical correlation between composition and electronic properties. Nanotechnology, 2012, 23, 165202.	1.3	20
131	Monitoring the non-parabolicity of the conduction band in GaN0.018As0.982/GaAs quantum wells. Solid-State Electronics, 2003, 47, 437-441.	0.8	19
132	Polarization Properties of Columnar Quantum Dots: Effects of Aspect Ratio and Compositional Contrast. IEEE Journal of Quantum Electronics, 2010, 46, 197-204.	1.0	19
133	Comparison of first principles and semi-empirical models of the structural and electronic properties of $$hbox {Ge}_{1-x}hbox {Sn}_{x}$$ alloys. Optical and Quantum Electronics, 2019, 51, 1.	1.5	19
134	Resonant electron scattering due to the central cells of impurities observed in AlGaAs under hydrostatic pressure. Physical Review Letters, 1987, 59, 2341-2344.	2.9	18
135	The influence of tensile strain on differential gain and Auger recombination in 1.5-Î¼m multiple-quantum-well lasers. IEEE Journal of Quantum Electronics, 1998, 34, 822-833.	1.0	18
136	Experimental and Theoretical Study of InAs/InGaAsP/InP Quantum Dash Lasers. IEEE Journal of Quantum Electronics, 2009, 45, 1508-1516.	1.0	18
137	The pressure dependence of the band offsets in a GaInAs/InP multiple quantum well structure. Journal of Crystal Growth, 1988, 93, 323-328.	0.7	17
138	Theoretical studies of the bonding of CO to transition metal atoms in cluster carbonyl molecules and at surfaces. Surface Science, 1979, 89, 274-281.	0.8	16
139	Calculation of strain relaxation in strained-layer structures: comparison of atomistic and continuum methods. Modelling and Simulation in Materials Science and Engineering, 1994, 2, 9-20.	0.8	16
140	Effects of strain and GaInP2superlattice ordering on laser polarization. Semiconductor Science and Technology, 1994, 9, 1268-1271.	1.0	16
141	Electronic properties of InAs/GaAs self-assembled quantum dots studied by photocurrent spectroscopy. Physica E: Low-Dimensional Systems and Nanostructures, 2001, 9, 106-113.	1.3	16
142	Optical transition pathways in type-II Ga(As)Sb quantum dots. Journal of Luminescence, 2009, 129, 456-460.	1.5	16
143	Atomistic tight-binding study of electronic structure and interband optical transitions in GaBixAs1âˆ’x/GaAs quantum wells. Applied Physics Letters, 2014, 104, 071103.	1.5	16
144	Experimental and modelling study of InGaBiAs/InP alloys with up to 5.8% Bi, and with<i>Î”</i>_{so}><i>E</i>_g. Semiconductor Science and Technology, 2015, 30, 094015.	1.0	16

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145	Impact of Disorder on the Optoelectronic Properties of GaNyAs1âˆ’xâˆ’yBix Alloys and Heterostructures. Physical Review Applied, 2018, 10, .	1.5	16
146	Surface integral determination of built-in electric fields and analysis of exciton binding energies in nitride-based quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 21, 358-362.	1.3	15
147	Theory of electronic structure of BGaAs and related alloys. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 454-459.	0.8	15
148	Gap solitons in spatiotemporal photonic crystals. Physical Review A, 2008, 77, .	1.0	15
149	The electronic structure of Ge-Se and Ge-Te compounds. Journal of Physics C: Solid State Physics, 1982, 15, 1449-1455.	1.5	14
150	Semiconductor lasers take the strain. Physics World, 1992, 5, 43-48.	0.0	14
151	Direct measurement of band offsets in GaInP/AlGaInP using high pressure. Journal of Physics and Chemistry of Solids, 1995, 56, 423-427.	1.9	14
152	Theory and design of In_{<i>x</i>}Ga_{1âˆ’<i>x</i>}As_{1âˆ’<i>y</i>}Bi_{<i>y</i>}mid-infrared semiconductor lasers: type-I quantum wells for emission beyond 3<i>Î¼</i>m on InP substrates. Semiconductor Science and Technology, 2018, 33, 094007.	1.0	14
153	Axial-strain effects on superlattice band structures. Semiconductor Science and Technology, 1986, 1, 128-132.	1.0	13
154	Theory of reduced threshold current density in GaAs/AlGaAs quantum well lasers. Superlattices and Microstructures, 1990, 7, 353-358.	1.4	13
155	Theoretical analysis of the electronic structure of truncated-pyramidal GaN/AlN quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2001, 10, 553-560.	1.3	13
156	Built-in field reduction in InGaN/GaN quantum dot molecules. Applied Physics Letters, 2011, 99, .	1.5	13
157	A comparison of the recursion method and the equation-of-motion method for the calculation of densities of states. Journal of Physics C: Solid State Physics, 1985, 18, 1401-1413.	1.5	12
158	Nonlinear gain effects in strained-layer lasers. Electronics Letters, 1990, 26, 1978.	0.5	12
159	Determining the band-structure of an InGaNAs/GaAs semiconductor laser structure using non-destructive photomodulated reflectance measurements and kÂ·p studies. Solid State Communications, 2003, 125, 155-159.	0.9	12
160	Evolution of N defect states and optical transitions in ordered and disordered GaP_{1âˆ’<i>x</i>}N_{<i>x</i>}alloys. Journal of Physics Condensed Matter, 2008, 20, 295211.	0.7	12
161	Strongly nonparabolic variation of the band gap in In_{<i>x</i>}Al_{1âˆ’<i>x</i>}N with low indium content. Semiconductor Science and Technology, 2016, 31, 025006.	1.0	12
162	The electronic structure of defects in amorphous GaAs. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1984, 50, L9-L12.	0.6	11

#	Article	IF	Citations
163	Phonons in AlxGa1âˆ’xAs alloys. Superlattices and Microstructures, 1985, 1, 471-479.	1.4	11
164	Antimony-based strained-layer 2-2.5 mu m quantum well lasers. Semiconductor Science and Technology, 1993, 8, 1655-1661.	1.0	11
165	Polarisation selectivity in ordered GaInP2 vertical cavity surface-emitting lasers. Electronics Letters, 1995, 31, 461-462.	0.5	11
166	An analysis of 1.55Î¼m InAsâˆ•InP quantum dash lasers. Applied Physics Letters, 2008, 92, 251105.	1.5	11
167	Physics of novel site controlled InGaAs quantum dots on (111) oriented substrates. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 2761-2764.	1.3	11
168	Monte Carlo simulation of hole mobilities in an InGaAs/GaAs strained layer quantum well. Semiconductor Science and Technology, 1992, 7, 86-91.	1.0	10
169	Interplay of strain and superlattice ordering onGaInP2quantum-well valence-subband structure. Physical Review B, 1995, 51, 7566-7570.	1.1	10
170	Theoretical study of the electronic structure of self-organized GaN/AlN QDs. Nanotechnology, 2000, 11, 256-262.	1.3	10
171	Intervalence band solitary waves in semiconductor quantum wells. Physical Review A, 2006, 73, .	1.0	10
172	Effect of localized B and N states on the magneto-transport of (B,Ga,In)As and (Ga,In)(N,As). Physica Status Solidi (B): Basic Research, 2007, 244, 431-436.	0.7	10
173	Builtâ€in fields in stacked InGaN/GaN quantum dots. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 1551-1554.	0.8	10
174	Analysis of bandâ€anticrossing model in GaNAs near localised states. Physica Status Solidi (B): Basic Research, 2011, 248, 1176-1179.	0.7	10
175	Theory of intermediate- and high-field mobility in dilute nitride alloys. Physical Review B, 2011, 84, .	1.1	10
176	Prediction of strong ground state electron and hole wave function spatial overlap in nonpolar GaN/AlN quantum dots. Applied Physics Letters, 2012, 101, 113107.	1.5	10
177	Piezoelectric properties of zinc blende quantum dots. Physica Status Solidi (B): Basic Research, 2012, 249, 521-525.	0.7	10
178	Electronic properties of site-controlled (111)-oriented zinc-blende InGaAs/GaAs quantum dots calculated using a symmetry-adaptedkâ‹…pHamiltonian. Journal of Physics Condensed Matter, 2014, 26, 035303.	0.7	10
179	Hybrid functional study of nonlinear elasticity and internal strain in zinc-blende III-V materials. Physical Review Materials, 2019, 3, .	0.9	10
180	Theoretical analysis of strain distribution, carrier spectrum and gain in GaN-based hexagonal QDs. Thin Solid Films, 2000, 364, 291-295.	0.8	9

#	Article	IF	Citations
181	Dipole nano-laser. Journal of Physics: Conference Series, 2008, 107, 012010.	0.3	9
182	Tight-binding approach to calculation of localised perturbations in semiconductors. Journal of Physics: Conference Series, 2010, 242, 012002.	0.3	9
183	Fine-structure splitting in large-pitch pyramidal quantum dots. Physical Review B, 2012, 85, .	1.1	9
184	Piezo-force and Vibration Analysis of ZnO Nanowire Arrays for Sensor Application. Procedia Engineering, 2016, 168, 1192-1195.	1.2	9
185	â€˜â€˜Universalâ€™â€™ conduction-band structure in some common semiconductor compounds. Physical Review Letters, 1990, 65, 752-755.	2.9	8
186	Determination of Gain and Loss Mechanisms in Semiconductor Lasers Using Pressure Techniques. Physica Status Solidi (B): Basic Research, 1996, 198, 363-373.	0.7	8
187	Electronic structure of InAsâ€“GaAs self-assembled quantum dots studied by perturbation spectroscopy. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 6, 348-357.	1.3	8
188	The effects of adjacent dislocations on the electronic and optical properties of GaN/AlN quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 1094-1097.	1.3	8
189	Built-in fields in non-polar InxGa1Ã¢Â€Â“xN quantum dots. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 80-83.	0.8	8
190	Excitonic binding energies in non-polar GaN quantum wells. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1900-1902.	0.8	8
191	Evidence of localized boron impurity states in (B,Ga,In)As in magnetotransport experiments under hydrostatic pressure. Physical Review B, 2011, 83, .	1.1	8
192	Performance of a woodchip filter to treat dairy soiled water. Journal of Environmental Management, 2012, 95, 49-55.	3.8	8
193	Optical absorption of dilute nitride alloys using self-consistent Greenâ€™s function method. Nanoscale Research Letters, 2014, 9, 51.	3.1	8
194	Luminescence properties of dilute bismide systems. Journal of Luminescence, 2014, 154, 95-98.	1.5	8
195	Atomistic description of wave function localization effects in In_xGa_{1-x}N alloys and quantum wells. Proceedings of SPIE, 2015, , .	0.8	8
196	Atomistic analysis of the electronic structure of <i>m</i>â€plane InGaN/GaN quantum wells: Carrier localization effects in ground and excited states due to random alloy fluctuations. Physica Status Solidi (B): Basic Research, 2016, 253, 853-860.	0.7	8
197	Impact of random alloy fluctuations on inter-well transport in InGaN/GaN multi-quantum well systems: an atomistic non-equilibrium Greenâ€™s function study. Journal of Physics Condensed Matter, 2021, 33, 045302.	0.7	8
198	Band structure engineering for maximal light-hole behaviour in strained quantum well systems. Solid State Communications, 1987, 62, 653-656.	0.9	7

#	Article	IF	Citations
199	Quantum Confined Stark Effect and Permanent Dipole Moment of InAsâ€“GaAs Self-Assembled Quantum Dots. Physica Status Solidi A, 2000, 178, 269-275.	1.7	7
200	Effect of localized boron impurities on the line shape of the fundamental band gap transition in photomodulated reflectance spectra of (B,Ga,In)As. Physical Review B, 2011, 83, .	1.1	7
201	Theoretical and experimental analysis of the photoluminescence and photoluminescence excitation spectroscopy spectra of <i>m</i>-plane InGaN/GaN quantum wells. Applied Physics Letters, 2016, 109, .	1.5	7
202	Theory and Optimization of 1.3- $mu ext{m}$ Metamorphic Quantum Well Lasers. IEEE Journal of Quantum Electronics, 2016, 52, 1-11.	1.0	7
203	Optical properties of metamorphic type-I InAs_{1â^’x}Sb_x/Al_{yâ€Š}In_{1â^’yâ€Š}As quantum wells grown on GaAs for the mid-infrared spectral range. Journal Physics D: Applied Physics, 2019, 52, 465102.	1.3	7
204	Electronic structure evolution in dilute carbide Ge1â^’<i>x</i>C<i>x</i> alloys and implications for device applications. Journal of Applied Physics, 2019, 126, .	1.1	7
205	Continuous-Wave Magneto-Optical Determination of the Carrier Lifetime in Coherent <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mrow><mml:msub><mml:mi>Ge</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><m Heterostructures. Physical Review Applied, 2020, 14, .	1.5	7
206	Hydrostatic Pressure Dependence of the Threshold Current in 1.5 Î¼m Strained Quantum Well Lasers. Physica Status Solidi (B): Basic Research, 1996, 198, 381-388.	0.7	6
207	Photocurrent spectroscopy of InAs/GaAs self-assembled quantum dots: observation of a permanent dipole moment. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 7, 408-412.	1.3	6
208	Theory of the electronic structure of Ga1-yInyNxAs1â^’xand related alloys. High Pressure Research, 2000, 18, 13-20.	0.4	6
209	Photocurrent Spectroscopy of InAs/GaAs Self-Assembled Quantum Dots. Physica Status Solidi (B): Basic Research, 2001, 224, 497-502.	0.7	6
210	Pressure and k Â· p studies of band parameters in dilute-N GaInNAs/GaAs multiple quantum wells. Physica Status Solidi (B): Basic Research, 2003, 235, 384-389.	0.7	6
211	Influence of N cluster states on band dispersion in GaInNAs quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2006, 32, 249-253.	1.3	6
212	Interconnection between ground state and excited state gain in InAs/GaAs quantum dot semiconductor optical amplifiers. Physica Status Solidi (B): Basic Research, 2009, 246, 868-871.	0.7	6
213	Effect of alloy fluctuations on the local polarization in nitride nanostructures. Physica Status Solidi (B): Basic Research, 2012, 249, 526-530.	0.7	6
214	Theory of the Electronic Structure of Dilute Bismide Alloys: Tight-Binding and k Â· p Models. Springer Series in Materials Science, 2013, , 55-88.	0.4	6
215	Direct observation of spontaneous polarization induced electron charge transfer in stressed ZnO nanorods. Nano Energy, 2018, 43, 376-382.	8.2	6
216	Nature of the band gap of Ge:C alloys: insights from hybrid functional density functional theory calculations. Semiconductor Science and Technology, 2019, 34, 075007.	1.0	6

#	Article	IF	Citations
217	Gain switching in highâ€speed semiconductor lasers: Intermediateâ€signal analysis. Applied Physics Letters, 1994, 65, 661-663.	1.5	5
218	Ground state switching in InGaN/GaN quantum dot molecules. Physica Status Solidi (B): Basic Research, 2012, 249, 516-520.	0.7	5
219	Multiphysics Model of Encapsulated Piezoelectric-semiconducting Nanowire with Schottky Contacts and External Capacitive Circuit. Procedia Engineering, 2015, 120, 896-901.	1.2	5
220	Theoretical analysis of influence of random alloy fluctuations on the optoelectronic properties of site-controlled (111)-oriented InGaAs/GaAs quantum dots. Physical Review B, 2016, 94, .	1.1	5
221	Fully analytic valence force field model for the elastic and inner elastic properties of diamond and zincblende crystals. Physical Review B, 2019, 100, .	1.1	5
222	A theoretical study of defects in amorphous group-V semiconductors. Journal of Physics C: Solid State Physics, 1981, 14, 3881-3895.	1.5	4
223	Modal refractive index of 1.3â€…l[micro sign]m InGaAsP, AlGaInAs and GaInNAs semiconductor lasers under high hydrostatic pressure. Electronics Letters, 2002, 38, 325.	0.5	4
224	Editorial: Dilute nitride and related mismatched semiconductor alloys. IEE Proceedings: Optoelectronics, 2004, 151, 245-246.	0.8	4
225	Theory of Piezoelectric Fields in InGaAs Site-Controlled Quantum Dots. Journal of Physics: Conference Series, 2010, 245, 012022.	0.3	4
226	Refractive index dynamics of InAs/GaAs quantum dots. Applied Physics Letters, 2013, 103, 021114.	1.5	4
227	Long wavelength transverse magnetic polarized absorption in 1.3 Âµm InAs/InGaAs dots-in-a-well type active regions. Semiconductor Science and Technology, 2013, 28, 015012.	1.0	4
228	Self-consistent Green's function method for dilute nitride conduction band structure. Journal of Physics Condensed Matter, 2014, 26, 365502.	0.7	4
229	Three-Dimensional Self-Assembled Columnar Arrays of AlInP Quantum Wires for Polarized Micrometer-Sized Amber Light Emitting Diodes. ACS Photonics, 2018, 5, 1318-1325.	3.2	4
230	alloys. , 2018, , .		4
231	Finite Element Analysis of Polymer-encapsulated ZnO Nanowire-based Sensor Array Intended for Pressure Sensing in Biometric Applications. Procedia Engineering, 2016, 168, 864-867.	1.2	4
232	A theoretical study of defects in amorphous arsenic. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1981, 43, 579-595.	0.6	3
233	Influence of auger recombination on the temperature sensitivity of bulk and strained quantum well 1.3-Î¼m semiconductor lasers. , 1996, 2693, 592.		3
234	Microscopic modeling of GaInNAs semiconductor lasers. , 2001, , .		3

#	Article	IF	Citations
235	Two-colour Fabry-Perot laser with terahertz primary mode spacing. Electronics Letters, 2007, 43, 224.	0.5	3
236	Stochastic resonance in photonic crystal growth. , 2007, 6603, 480.		3
237	Design of columnar quantum dots for polarization-independent emission using 8â€"band kÂ·p method. Journal of Physics: Conference Series, 2010, 245, 012038.	0.3	3
238	Characterising the degree of polarisation anisotropy in an <i>a</i> â€plane GaN film. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1897-1899.	0.8	3
239	Modelling and direct measurement of the density of states in GaAsN. Physica Status Solidi (B): Basic Research, 2011, 248, 1167-1171.	0.7	3
240	Built-in field control in nitride nanostructures operating in the UV. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 838-841.	0.8	3
241	Improved performance from InAlSb/InSb superlattice mid-infrared diode lasers. , 2002, , .		2
242	Theory of electron confinement and electron effective mass in dilute nitride alloys and heterostructures. Physica Status Solidi (B): Basic Research, 2004, 241, 3099-3106.	0.7	2
243	Dipole lasing stimulated by nano-antenna. Proceedings of SPIE, 2008, , .	0.8	2
244	Theory of the electronic structure of dilute bismide and bismide-nitride alloys of GaAs: Tight-binding and k.p models. , 2013, , .		2
245	Enhanced pressure response in ZnO nanorods due to spontaneous polarization charge. , 2015, , .		2
246	Dilute bismide alloys grown on GaAs and InP substrates for improved near- and mid-infrared semiconductor lasers. , 2016, , .		2
247	Towards Direct Gap Emission in GeSn and GeC: a Hybrid Functional DFT Analysis. , 2018, , .		2
248	Design guidelines for edgeâ€coupled waveguide unitravelling carrier photodiodes with improved bandwidth. IET Optoelectronics, 2019, 13, 267-272.	1.8	2
249	Dilute Nitride Alloys. , 2017, , 251-312.		2
250	Dilute Bismide Alloys. , 2017, , 313-362.		2
251	Conduction-band universality in GaAs-based systems. Semiconductor Science and Technology, 1992, 7, 165-167.	1.0	1
252	Quantum cascade laser has no role for holes. Physics World, 1994, 7, 24-25.	0.0	1

#	Article	IF	Citations
253	Detection of Rabi oscillations in a two-dimensional electron gas under ultrafast intersubband excitation. Semiconductor Science and Technology, 2004, 19, S279-S281.	1.0	1
254	Nonlinear refractive index and pattern-effects-free cross-phase modulation in quantum dot semiconductor optical amplifiers. , 2004, , .		1
255	THz photocurrent through an independently contacted three-level heterostructure. Semiconductor Science and Technology, 2004, 19, 558-560.	1.0	1
256	Radiative recombination in InAs-based quantum dot lasers: dependence on carrier density and dot parameters. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 1374-1378.	0.8	1
257	Control of reflectivity and stop bands in a Bragg stack with a four-layer period. Optics Communications, 2009, 282, 867-871.	1.0	1
258	High-speed 850-nm VCSELs for 40-Gb/s transmission. Proceedings of SPIE, 2010, , .	0.8	1
259	Theoretical Investigation of Anisotropic Gain Mechanisms in InGaAsP-Based 1.5-mum Quantum Dash Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 742-753.	1.0	1
260	Editorial: Introduction to the Issue on Semiconductor Lasersâ€"Part 2. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 1468-1469.	1.9	1
261	Bistability of threshold in quantum dashâ€inâ€aâ€well lasers. IET Optoelectronics, 2014, 8, 94-98.	1.8	1
262	Dilute bismides and related alloys. Semiconductor Science and Technology, 2015, 30, 090301.	1.0	1
263	Strain-balanced type-II superlattices on GaAs: Novel heterostructures for photonics and photovoltaics. , 2017, , .		1
264	Computational design of metamorphic In(N)AsSb mid-infrared light-emitting diodes. , 2018, , .		1
265	Impact of Band Anticrossing on Band-to-Band Tunneling in Highly Mismatched Semiconductor Alloys. Physical Review Applied, 2022, 17, .	1.5	1
266	GaInP-crossed-coupled-cavity-laser (XCCL) for investigation of strain effects and GaInP superlattice ordering. , 1994, , .		0
267	<title>Calculation of Auger recombination in long-wavelength lasers</title>. , 1997, , .		0
268	Characterization of 1.3-um wavelength GaInNAs/GaAs edge-emitting and vertical-cavity surface-emitting lasers using low temperature and high pressure. , 2002, 4905, 183.		0
269	Theory of the band structure of pentacene organic crystals. , 2003, , .		0
270	Difference-harmonic generation in quantum dots. , 2003, 4876, 423.		0

#	Article	IF	Citations
271	Time-resolved dynamics in single InGaN quantum dots (Invited Paper). , 2005, , .		0
272	Theory Of Electron Effective Mass And Mobility in Dilute Nitride Alloys. AIP Conference Proceedings, 2005, , .	0.3	0
273	Analysis of InAs/InP quantum dash lasers. , 2008, , .		0
274	Gap solitons in nonlinear spatiotemporal photonic crystals and gratings. , 2008, , .		0
275	Dynamic of the Optical Matrix Element in Type II GaAsSb/GaAs Quantum Dots for Laser Applications. , 2009, , .		0
276	Introduction to the Issue on Semiconductor Lasersâ€"Part 1. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 1136-1137.	1.9	0
277	Analysis of Reduced Built-In Polarization Fields and Electronic Structure of InGaN/GaN Quantum Dot Molecules. Lecture Notes in Nanoscale Science and Technology, 2014, , 177-208.	0.4	0
278	Nonpolar GaN quantum dots: Impact of dot size and shape on the electron and hole wave function overlap. Physica Status Solidi C: Current Topics in Solid State Physics, 2014, 11, 762-765.	0.8	0
279	Theory and optimisation of 1.3 and 1.55 Î¼m (Al)InGaAs metamorphic quantum well lasers. , 2016, , .		0
280	GaAs-based dilute bismide semiconductor lasers: Theory vs. experiment. , 2016, , .		0
281	New experimental evidence for nature of the band gap of GeSn alloys (Conference Presentation). , 2017, , .		0
282	Optical gain in GaAsBi-based quantum-well diode lasers (Conference Presentation). , 2017, , .		0
283	Atomistic analysis of transport properties of InGaN/GaN multi-quantum well. , 2019, , .		0
284	Plane-Wave Approaches to the Electronic Structure of Semiconductor Nanostructures. Lecture Notes in Computational Science and Engineering, 2014, , 155-189.	0.1	0