Stanko Tomic, FinstP

List of Publications by Year
in descending order

135 papers	2,819 citations	172457 29 h-index	189892 50 g-index
138 all docs	138 docs citations	138 times ranked	2379 citing authors

#	Article	IF	Citations
1	The group IIIâ€“V's semiconductor energy gaps predicted using the B3LYP hybrid functional. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 2125-2127.	2.7	146
2	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.	2.0	140
3	Theoretical and experimental analysis of 1.3-Î¼m InGaAsN/GaAs lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2003, 9, 1228-1238.	2.9	137
4	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.	2.9	136
5	Absorption characteristics of a quantum dot array induced intermediate band: Implications for solar cell design. Applied Physics Letters, 2008, 93, 263105.	3.3	135
6	Intermediate-band solar cells: Influence of band formation on dynamical processes in InAs/GaAs quantum dot arrays. Physical Review B, 2010, 82, .	3.2	104
7	Influence of conduction-band nonparabolicity on electron confinement and effective mass inGaNxAs1â^'xâ•GaAsquantum wells. Physical Review B, 2004, 69, .	3.2	94
8	Second-order piezoelectricity in wurtzite III-N semiconductors. Physical Review B, 2011, 84, .	3.2	88
9	Intermediate-band dynamics of quantum dots solar cell in concentrator photovoltaic modules. Scientific Reports, 2014, 4, 4792.	3.3	88
10	Parallel multi-bandkÂ·pcode for electronic structure of zinc blend semiconductor quantum dots. Journal of Materials Chemistry, 2006, 16, 1963-1972.	6.7	78
11	Electronic and optical properties of reduced graphene oxide. Journal of Materials Chemistry C, 2015, 3, 7632-7641.	5.5	78
12	Electronic structure ofInyGa1â^'yAs1â^'xNx/GaAsmultiple quantum wells in the dilute-Nregime from pressure andkâ‹…pstudies. Physical Review B, 2002, 66, .	3.2	65
13	Quantum Engineering of InAs/GaAs Quantum Dot Based Intermediate Band Solar Cells. ACS Photonics, 2017, 4, 2745-2750.	6.6	64
14	Defect physics of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>CuGaS</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>Physical Review B, 2010, 81, .	3.2	62
15	First-principles optical response of semiconductors and oxide materials. Physical Review B, 2011, 83, .	3.2	51
16	Electronic and Optical Structure of Wurtzite CuInS₂. Journal of Physical Chemistry C, 2014, 118, 14478-14484.	3.1	49
17	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.	2.0	43
18	Plane wave methodology for single quantum dot electronic structure calculations. Journal of Applied Physics, 2008, 103, .	2.5	43

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19	Excitonic and biexcitonic properties of single GaN quantum dots modeled by 8-band<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><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>theory and configuration-interaction method. Physical Review B, 2009, 79, .	3.2	42
20	Gain characteristics of ideal dilute nitride quantum well lasers. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 1102-1105.	2.7	41
21	Fluorescence of colloidal PbSe/PbS QDs in NIR luminescent solar concentrators. Physical Chemistry Chemical Physics, 2012, 14, 16223.	2.8	40
22	Intersubband gain without global inversion through dilute nitride band engineering. Applied Physics Letters, 2011, 98, .	3.3	37
23	Inâ€plane coupling effect on absorption coefficients ofâ€‰InAs/GaAs quantum dots arrays for intermediate band solar cell. Progress in Photovoltaics: Research and Applications, 2015, 23, 546-558.	8.1	36
24	Parallel implementation of the ab initio CRYSTAL program: electronic structure calculations for periodic systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 2112-2126.	2.1	35
25	Chemistry of defect induced photoluminescence in chalcopyrites: The case of CuAlS2. Journal of Applied Physics, 2011, 109, .	2.5	35
26	Geometric structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>TiO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>: Confirming experimental conclusions. Physical Review B, 2010, 81, .	3.2	34
27	Broadband Cooling Spectra of Hot Electrons and Holes in PbSe Quantum Dots. ACS Nano, 2017, 11, 6286-6294.	14.6	34
28	Optimization of intersubband resonant second-order susceptibility in asymmetric graded AlxGa1â^'xAs quantum wells using supersymmetric quantum mechanics. Physical Review B, 1997, 56, 1033-1036.	3.2	32
29	Optimization of material parameters in 1.3-Î¼m InGaAsN-GaAs lasers. IEEE Photonics Technology Letters, 2003, 15, 6-8.	2.5	32
30	Derivation of a 10-band model for dilute nitride semiconductors. Solid-State Electronics, 2003, 47, 443-446.	1.4	31
31	Electronic structure ofInyGa1â^'yAs1â^'xNxâ•GaAs(N)quantum dots by ten-bandkâ™ptheory. Physical Review B, 2006, 73, .	3.2	29
32	Symmetry reduction in multiband Hamiltonians for semiconductor quantum dots: The role of interfaces and higher energy bands. Journal of Applied Physics, 2011, 110, .	2.5	29
33	Effect of Sb induced type II alignment on dynamical processes in InAs/GaAs/GaAsSb quantum dots: Implication to solar cell design. Applied Physics Letters, 2013, 103, .	3.3	29
34	Influence of elevated radiative lifetime on efficiency of CdSe/CdTe Type II colloidal quantum dot based solar cells. Solar Energy Materials and Solar Cells, 2017, 159, 657-663.	6.2	29
35	On inhibiting Auger intraband relaxation in InAs/GaAs quantum dot intermediate band solar cells. Applied Physics Letters, 2011, 99, .	3.3	28
36	Influence of confinement energy and band anticrossing effect on the electron effective mass inGa1â^'yInyNxAs1â^'xquantum wells. Physical Review B, 2005, 71, .	3.2	27

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37	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.	2.9	27
38	Theoretical analysis of strain and strain decay in InAsâˆ•GaAs(001) multilayer quantum dot growth. Journal of Applied Physics, 2006, 99, 093522.	2.5	25
39	Evidence of carrier leakage into the L-valley in InAs-based quantum cascade lasers under high hydrostatic pressure. Physica Status Solidi (B): Basic Research, 2009, 246, 512-515.	1.5	23
40	Non-linear piezoelectricity in zinc blende GaAs and InAs semiconductors. Journal of Applied Physics, 2013, 114, 073515.	2.5	23
41	The optimization of optical gain in the intersubband quantum well laser. Journal of Applied Physics, 2000, 87, 7965-7972.	2.5	20
42	Visible Spectrum Quantum Light Sources Based on In_xGa_{1â€“x}N/GaN Quantum Dots. ACS Photonics, 2015, 2, 958-963.	6.6	20
43	Monitoring the non-parabolicity of the conduction band in GaN0.018As0.982/GaAs quantum wells. Solid-State Electronics, 2003, 47, 437-441.	1.4	19
44	Efficient Steplike Carrier Multiplication in Percolative Networks of Epitaxially Connected PbSe Nanocrystals. ACS Nano, 2018, 12, 378-384.	14.6	19
45	Gain-maximized GaAs/AlGaAs quantum-cascade laser with digitally graded active region. Applied Physics Letters, 2002, 81, 2163-2165.	3.3	18
46	High-pressure studies of recombination mechanisms in 1.3-Î¼m GaInNAs quantum-well lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2003, 9, 1196-1201.	2.9	17
47	Low Energy Electron Diffraction Study of TiO₂(110)(2 Ã— 1)-[HCOO]^{â^’}. Journal of Physical Chemistry C, 2008, 112, 14154-14157.	3.1	17
48	Design of Core/Shell Colloidal Quantum Dots for MEG Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 179-184.	2.5	17
49	Theoretical analysis of GaAs/AlGaAs quantum dots in quantum wire array for intermediate band solar cell. Journal of Renewable and Sustainable Energy, 2014, 6, 011206.	2.0	16
50	Effect of Correlation and Dielectric Confinement on 1S_{1/2}^(e)nS_{3/2}^(h) Excitons in CdTe/CdSe and CdSe/CdTe Type-II Quantum Dots. Journal of Physical Chemistry C, 2015, 119, 12720-12730.	3.1	16
51	xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="normal">Ga</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:msub><mml:mi mathvariant="normal">In</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mn>0.05</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">As</mml:mi><mml:mn>0.95</mml:mn></mml:msub></. Physical Review B, 2007, 76,	3.2	15
52	Exciton states and oscillator strengths in a cylindrical quantum wire with finite potential under transverse electric field. Journal of Applied Physics, 2012, 112, .	2.5	15
53	Importance of non linear piezoelectric effect in Wurtzite III-N semiconductors. Optical and Quantum Electronics, 2012, 44, 195-203.	3.3	15
54	Energy structure of CdSe/CdTe type II colloidal quantum dotsâ€”Do phonon bottlenecks remain for thick shells?. Solar Energy Materials and Solar Cells, 2016, 158, 160-167.	6.2	14

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55	Experimental demonstration of energy-transfer ratchet intermediate-band solar cell. Communications Physics, 2021, 4, .	5.3	14
56	Analysis of energy gap opening in graphene oxide. Journal of Physics: Conference Series, 2014, 526, 012003.	0.4	13
57	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.	1.9	12
58	Unusual increase of the Auger recombination current in 1.3 Î¼m GaInNAs quantum-well lasers under high pressure. Applied Physics Letters, 2003, 82, 2335-2337.	3.3	12
59	Spectroscopy of GaAsâ•AlGaAs quantum-cascade lasers using hydrostatic pressure. Applied Physics Letters, 2006, 89, 221105.	3.3	12
60	Optical response of extended systems from time-dependent Hartree-Fock and time-dependent density-functional theory. Journal of Physics: Conference Series, 2012, 367, 012001.	0.4	12
61	The optical gain and radiative current density of GaInNAs/GaAs/AlGaAs separate confinement heterostructure quantum well lasers. Journal of Applied Physics, 2010, 107, 013107.	2.5	11
62	Automated design of multi junction solar cells by genetic approach: Reaching the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si0047.gif" overflow="scroll"><mml:mrow><mml:mo stretchy="false">></mml:mo><mml:mn>50</mml:mn><mml:mo>%</mml:mo></mml:mrow></mml:math> efficiency target. Solar Energy Materials and Solar Cells, 2018, 181, 30-37.	6.2	11
63	Genetic algorithm designed high efficiency laser power converters based on the vertical epitaxial heterostructure architecture. Solar Energy Materials and Solar Cells, 2019, 200, 109878.	6.2	10
64	Ab initiostudy of structural and electronic properties of partially reduced graphene oxide. Physica Scripta, 2014, T162, 014019.	2.5	9
65	N-Composition and Pressure Dependence of the Inter Band Transitions of Ga(N,As)/GaAs Quantum Wells. High Pressure Research, 2002, 22, 293-297.	1.2	8
66	Investigation of 1.3-Î¼m GaInNAd vertical-cavity surface-emitting lasers (VCSELs) using temperature, high-pressure, and modeling techniques. IEEE Journal of Selected Topics in Quantum Electronics, 2003, 9, 1202-1208.	2.9	8
67	Temperature and pressure dependence of the recombination mechanisms in 1.3 Î¼m and 1.5 Î¼m GaInNAs lasers. Physica Status Solidi (B): Basic Research, 2007, 244, 208-212.	1.5	8
68	Electronic structure of QD arrays: application to intermediate-band solar cells. Optical and Quantum Electronics, 2008, 40, 313-318.	3.3	8
69	Optimization of nonlinear optical rectification in quantum wells using the supersymmetric quantum mechanics. Optics Communications, 1997, 143, 214-218.	2.1	7
70	Quantum well shape tailoring via inverse spectral theory: optimizing resonant second-harmonic generation. Journal of Physics Condensed Matter, 1998, 10, 6523-6532.	1.8	7
71	Gain optimization in optically pumped AlGaAs unipolar quantum-well lasers. IEEE Journal of Quantum Electronics, 2001, 37, 1337-1344.	1.9	7
72	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.	1.5	6

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73	Optical properties of dilute nitrogen GaInNAs quantum dots. Applied Physics Letters, 2007, 90, 121115.	3.3	6
74	Calculating charged defects using CRYSTAL. Journal of Physics: Conference Series, 2010, 242, 012004.	0.4	6
75	Theoretical studies of excitons in type II CdSe/CdTe quantum dots. Journal of Physics: Conference Series, 2014, 526, 012005.	0.4	6
76	Multiscale in modelling and validation for solar photovoltaics. EPJ Photovoltaics, 2018, 9, 10.	1.6	6
77	Analytical description of stripping foil extraction from isochronous cyclotrons. Physical Review E, 2002, 65, 036504.	2.1	5
78	Interdiffusion-based optimal quantum-well profile shaping for unipolar quantum-fountain lasers. Journal of Applied Physics, 2002, 91, 4801-4805.	2.5	5
79	Spectroscopic characterization of 1450 nm semiconductor pump laser structures for Raman amplifiers. Journal of Applied Physics, 2003, 93, 9446-9455.	2.5	5
80	Optimization of gain in intersubband quantum well lasers by supersymmetry. Physical Review B, 2000, 62, 16681-16685.	3.2	4
81	Carrier recombination processes in MOVPE and MBE grown 1.3 Î¼m GaInNAs edge emitting lasers. Solid-State Electronics, 2003, 47, 501-506.	1.4	4
82	Optimization of InAs/AlInAs quantum wells based up-converter for silicon solar cells. Journal of Applied Physics, 2011, 110, .	2.5	4
83	Effect of Thermal Annealing on Absorption and Hole Escape Processes in Type II GaSb/GaAs Quantum Dots: Implications for Solar Cell Design. IEEE Journal of Photovoltaics, 2019, 9, 1144-1153.	2.5	4
84	Quantum well shape tailoring via inverse spectral theory: Optimization of nonlinear optical rectification. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 238, 385-389.	2.1	3
85	Hydrostatic pressure dependence of recombination mechanisms in GaInNAs, InGaAsP and AlGaInAs 1.3â€…Î¼m quantum well lasers. Physica Status Solidi (B): Basic Research, 2003, 235, 474-479.	1.5	3
86	Quantifying pressure-dependent recombination currents in GaInNAs lasers using spontaneous emission measurements. Physica Status Solidi (B): Basic Research, 2003, 235, 486-490.	1.5	3
87	Wavelength control across the near IR spectrum with GaInNAs. Applied Physics Letters, 2007, 90, 032109.	3.3	3
88	Hydrostatic pressure experiments on dilute nitride alloys. Physica Status Solidi (B): Basic Research, 2007, 244, 24-31.	1.5	3
89	Absorption characteristics of intermediate band solar cell. , 2010, , .		3
90	Digitally graded active region for optically pumped intersubband lasers and nonlinear wavelength convertors. Journal of Applied Physics, 2002, 91, 9423-9425.	2.5	2

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91	Gain-cavity alignment profiling of 1.3 Î¼m emitting GaInNAs vertical cavity surface emitting lasers (VCSELs) using high pressure techniques. Physica Status Solidi (B): Basic Research, 2003, 235, 480-485.	1.5	2
92	Theory of electron confinement and electron effective mass in dilute nitride alloys and heterostructures. Physica Status Solidi (B): Basic Research, 2004, 241, 3099-3106.	1.5	2
93	The effect of hydrostatic pressure on the operation of quantum cascade lasers. Proceedings of SPIE, 2009, , .	0.8	2
94	Absorption characteristics of reduced graphene oxide: Application to TCO and solar cells active region. , 2015, , .		2
95	Gain optimization in intersubband quantum well lasers by inverse spectral theory. Solid State Communications, 1999, 113, 221-226.	1.9	1
96	Application of a precise fiber-optical dee position measurement system in the cyclotron RF system design. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1999, 425, 460-468.	1.6	1
97	Gain optimization in electrically pumped AlGaAs quantum cascade lasers. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 2357.	2.1	1
98	Digitally graded GaAs/Al0.44Ga0.56As quantum-cascade laser. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 17, 620-622.	2.7	1
99	Physical properties of short wavelength 2.6µm InAs/AlSb-based quantum cascade lasers. , 2010, , .		1
100	Strain dependence of internal displacement and effective charge in wurtzite III-N semiconductors. Journal of Physics: Conference Series, 2012, 367, 012006.	0.4	1
101	Radiative and non-radiative processes in intermediate band solar cells. , 2012, , .		1
102	In-plane coupling effect in InAs/GaAs quantum dots arrays for intermediate band solar cell. , 2013, , .		1
103	Frequency up-conversion in nonpolar a-plane GaN/AlGaN based multiple quantum wells optimized for applications with silicon solar cells. Journal of Applied Physics, 2014, 116, 033703.	2.5	1
104	Quantum dot array based intermediate band solar cell: Effect of light concentration. , 2015, , .		1
105	Influence of dielectric environment on exciton and bi-exciton properties in colloidal, type II quantum dots. Journal of Physics: Conference Series, 2015, 609, 012003.	0.4	1
106	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
107	On the interdiffusion-based quantum cascade laser. IEEE Photonics Technology Letters, 2002, 14, 1067-1069.	2.5	0
108	Gain optimization in optically pumped unipolar quantum-well lasers. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 862-865.	2.7	0

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109	Modelling of the InGaAsN/GaAs(N) quantum dots by 10-band k.p theory. , 0, , .		0
110	Electronic and optical properties of dilute nitrogen quantum dots. IEE Proceedings: Optoelectronics, 2006, 153, 293-298.	0.8	0
111	Analysis of Strain-Decay in InAs/GaAs(001) Multilayer Quantum Dot Growth. AIP Conference Proceedings, 2007, , .	0.4	0
112	Electronic structure of the dilute nitrogen quantum dots. AIP Conference Proceedings, 2007, , .	0.4	0
113	Design issues of 1.55 Î¼m emitting GaInNAs quantum dots. , 2007, , .		0
114	Electronic structure of QD arrays: Application to intermediate-band solar cells. , 2007, , .		0
115	Design issues of 1.55 Âµm emitting GaInNAs quantum dots. Optical and Quantum Electronics, 2008, 40, 307-311.	3.3	0
116	Introduction to the OQE special issue on numerical simulation of optoelectronic devices (2008). Optical and Quantum Electronics, 2008, 40, 1075-1076.	3.3	0
117	An efficient method for multi-band plane wave CI calculations in semiconductor QD's. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1924-1925.	2.7	0
118	Theoretical analysis of emitting GaInNAs QD's on different substrates. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1955-1957.	2.7	0
119	Gamma-L scattering in InAs-based quantum cascade lasers studied using high hydrostatic pressure. , 2008, , .		0
120	Electronic and optical structure of 1.55 Î¼m emitting GaInNAs quantum dots on different substrates. , 2010, , .		0
121	Dilute nitride band engineering: A tool for intersubband gain without population inversion. , 2011, , .		0
122	Investigating the effect of non linear piezoelectricity on the excitonic properties of III-N semiconductor quantum dots. , 2011, , .		0
123	Concepts for gain without inversion through dilute nitride band engineering. , 2011, , .		0
124	Engineering intersubband population inversion with dilute nitrides. , 2011, , .		0
125	Excitonic properties of GaN/AlN quantum dot single photon sources. , 2012, , .		0
126	Modelling of Quantum Dots for Intermediate Band Solar Cells. Springer Series in Optical Sciences, 2012, , 229-250.	0.7	0

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127	Theoretical model of quantum dot array based intermediate band solar cell: Effect of Sb induced type II alignment on dynamical processes. , 2013, , .		0
128	Ab initio parameterisation of the 14 band kÂ·p Hamiltonian: Zincblende study. Journal of Physics: Conference Series, 2014, 526, 012004.	0.4	0
129	Theory of Quantum Dot Arrays for Solar Cell Devices. Lecture Notes in Nanoscale Science and Technology, 2014, , 113-134.	0.8	0
130	Many-body effects in CdSe/CdTe colloidal quantum dots. , 2014, , .		0
131	Electronic states of elongated PbSe/PbS Core/shell quantum dots. Journal of Physics: Conference Series, 2014, 526, 012010.	0.4	0
132	4th Workshop on Theory, Modelling and Computational Methods for Semiconductors (TMCSIV). Journal of Physics: Conference Series, 2014, 526, 011001.	0.4	0
133	Design of core/shell colloidal quantum Dots for MEG solar cells. , 2015, , .		0
134	Automated design of multi junction solar cells by genetic approach: reaching the > 50% efficiency target. , 2018, , .		0
135	Theory, Modelling and Computational methods for Semiconductors. Journal of Physics: Conference Series, 2010, 242, 011001.	0.4	0