RaphaÃ«l ButtÃ©

List of Publications by Year
in descending order

144 papers	5,375 citations	81889 39 h-index	88628 70 g-index
147 all docs	147 docs citations	147 times ranked	3700 citing authors

#	Article	IF	Citations
1	Single photon emission and recombination dynamics in self-assembled GaN/AlN quantum dots. Light: Science and Applications, 2022, 11, 114.	16.6	19
2	Dark-level trapping, lateral confinement, and built-in electric field contributions to the carrier dynamics in <i>c</i>-plane GaN/AlN quantum dots emitting in the UV range. Journal of Applied Physics, 2021, 129, .	2.5	6
3	Imaging Nonradiative Point Defects Buried in Quantum Wells Using Cathodoluminescence. Nano Letters, 2021, 21, 5217-5224.	9.1	20
4	Ultrafast-nonlinear ultraviolet pulse modulation in an AlInGaN polariton waveguide operating up to room temperature. Nature Communications, 2021, 12, 3504.	12.8	15
5	Broadened Bandwidth Amplified Spontaneous Emission from Blue GaN-Based Short-Cavity Superluminescent Light-Emitting Diodes. ECS Journal of Solid State Science and Technology, 2020, 9, 015019.	1.8	5
6	Polariton relaxation and polariton nonlinearities in nonresonantly cw-pumped III-nitride slab waveguides. Physical Review B, 2020, 102, .	3.2	5
7	Effects of 5 MeV electron irradiation on deep traps and electroluminescence from near-UV InGaN/GaN single quantum well light-emitting diodes with and without InAlN superlattice underlayer. Journal Physics D: Applied Physics, 2020, 53, 445111.	2.8	4
8	Interplay of intrinsic and extrinsic states in pinning and passivation of <i>m</i>-plane facets of GaN <i>n</i>-<i>p</i>-<i>n</i> junctions. Journal of Applied Physics, 2020, 128, .	2.5	2
9	Toward Bright and Pure Single Photon Emitters at 300 K Based on GaN Quantum Dots on Silicon. ACS Photonics, 2020, 7, 1515-1522.	6.6	36
10	Impact of defects on Auger recombination in <i>c</i>-plane InGaN/GaN single quantum well in the efficiency droop regime. Applied Physics Letters, 2020, 116, .	3.3	14
11	Deep traps in InGaN/GaN single quantum well structures grown with and without InGaN underlayers. Journal of Alloys and Compounds, 2020, 845, 156269.	5.5	4
12	III-nitride photonic cavities. Nanophotonics, 2020, 9, 569-598.	6.0	21
13	Interplay of anomalous strain relaxation and minimization of polarization changes at nitride semiconductor heterointerfaces. Physical Review B, 2020, 102, .	3.2	3
14	Probing Alloy Formation Using Different Excitonic Species: The Particular Case of InGaN. Physical Review X, 2019, 9, .	8.9	4
15	Short cavity InGaN-based laser diodes with cavity length below 300 Î¼m. Semiconductor Science and Technology, 2019, 34, 085005.	2.0	12
16	Effects of InAlN underlayer on deep traps detected in near-UV InGaN/GaN single quantum well light-emitting diodes. Journal of Applied Physics, 2019, 126, .	2.5	21
17	Narrow Linewidth InGaN Laser Diodes Based on External Cavity Fiber Bragg Grating. , 2019, , .		0
18	Probing alloy formation using different excitonic species: The particular case of InGaN. , 2019, , .		0

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19	Impact of Mode-Hopping Noise on InGaN Edge Emitting Laser Relative Intensity Noise Properties. IEEE Journal of Quantum Electronics, 2018, 54, 1-7.	1.9	7
20	A quantum optical study of thresholdless lasing features in high-Î² nitride nanobeam cavities. Nature Communications, 2018, 9, 564.	12.8	50
21	Optical absorption edge broadening in thick InGaN layers: Random alloy atomic disorder and growth mode induced fluctuations. Applied Physics Letters, 2018, 112, .	3.3	31
22	Impact of surface morphology on the properties of light emission in InGaN epilayers. Applied Physics Express, 2018, 11, 051004.	2.4	9
23	Optical absorption and oxygen passivation of surface states in III-nitride photonic devices. Journal of Applied Physics, 2018, 123, .	2.5	23
24	GaN surface as the source of non-radiative defects in InGaN/GaN quantum wells. Applied Physics Letters, 2018, 113, .	3.3	93
25	Near-UV narrow bandwidth optical gain in lattice-matched IIIâ€"nitride waveguides. Japanese Journal of Applied Physics, 2018, 57, 090305.	1.5	3
26	Excited states of neutral donor bound excitons in GaN. Journal of Applied Physics, 2018, 123, .	2.5	7
27	Fermi-level pinning and intrinsic surface states of Al1âˆ'xInxN(101Â¯) surfaces. Applied Physics Letters, 2017, 110, .	3.3	5
28	Thin-Wall GaN/InAlN Multiple Quantum Well Tubes. Nano Letters, 2017, 17, 3347-3355.	9.1	9
29	Enhancement of Auger recombination induced by carrier localization in InGaN/GaN quantum wells. Physical Review B, 2017, 95, .	3.2	41
30	Propagating Polaritons in III-Nitride Slab Waveguides. Physical Review Applied, 2017, 7, .	3.8	32
31	Quantification of scattering loss of III-nitride photonic crystal cavities in the blue spectral range. Physical Review B, 2017, 95, .	3.2	14
32	Determining the nature of excitonic dephasing in high-quality GaN/AlGaN quantum wells through time-resolved and spectrally resolved four-wave mixing spectroscopy. Physical Review B, 2017, 96, .	3.2	7
33	Burying non-radiative defects in InGaN underlayer to increase InGaN/GaN quantum well efficiency. Applied Physics Letters, 2017, 111, .	3.3	99
34	Far-field coupling in nanobeam photonic crystal cavities. Applied Physics Letters, 2016, 108, .	3.3	5
35	Assessing the Composition of Wide Bandgap Compound Semiconductors by Atom Probe Tomography: A Metrological Problem. Microscopy and Microanalysis, 2016, 22, 650-651.	0.4	1
36	Strain and compositional fluctuations in Al0.81In0.19N/GaN heterostructures. Applied Physics Letters, 2016, 109, 132102.	3.3	4

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37	Statistical correction of atom probe tomography data of semiconductor alloys combined with optical spectroscopy: The case of Al0.25Ga0.75N. Journal of Applied Physics, 2016, 119, .	2.5	49
38	Optical properties of nearly lattice-matched GaN/(Al,In)N quantum wells. Journal of Applied Physics, 2016, 119, 205708.	2.5	1
39	Statistical nanoscale study of localised radiative transitions in GaN/AlGaN quantum wells and AlGaN epitaxial layers. Semiconductor Science and Technology, 2016, 31, 095009.	2.0	22
40	Carrier-density-dependent recombination dynamics of excitons and electron-hole plasma in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>m</mml:mi></mml:math> -plane InGaN/GaN quantum wells. Physical Review B, 2016, 94, .	3.2	41
41	Small-signal transient response and turn-on delay of polariton laser diodes. Semiconductor Science and Technology, 2016, 31, 035013.	2.0	0
42	Fabrication defects and grating couplers in III-nitride photonic crystal nanobeam lasers (Conference) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5		0
43	Vectorial near-field imaging of a GaN based photonic crystal cavity. Applied Physics Letters, 2015, 107, .	3.3	7
44	GaN L3 Photonic Crystal Cavities With an Average Quality Factor in Excess of 16000 in the Near Infrared. , 2015, , .		1
45	Continuous Wave Blue Lasing in III-Nitride Nanobeam Cavity on Silicon. Nano Letters, 2015, 15, 1259-1263.	9.1	51
46	Room Temperature Continuous Wave Blue Lasing in High Quality Factor III-Nitride Nanobeam Cavity on Silicon. , 2015, , .		0
47	High-temperature Mott transition in wide-band-gap semiconductor quantum wells. Physical Review B, 2014, 90, .	3.2	43
48	Gallium nitride L3 photonic crystal cavities with an average quality factor of 16â€‰900 in the near infrared. Applied Physics Letters, 2014, 105, .	3.3	28
49	<i>M</i>-Plane GaN/InAlN Multiple Quantum Wells in Coreâ€"Shell Wire Structure for UV Emission. ACS Photonics, 2014, 1, 38-46.	6.6	42
50	Biexcitonic molecules survive excitons at the Mott transition. Nature Communications, 2014, 5, 5251.	12.8	14
51	Composition of Wide Bandgap Semiconductor Materials and Nanostructures Measured by Atom Probe Tomography and Its Dependence on the Surface Electric Field. Journal of Physical Chemistry C, 2014, 118, 24136-24151.	3.1	135
52	Nano-scale luminescence characterization of individual InGaN/GaN quantum wells stacked in a microcavity using scanning transmission electron microscope cathodoluminescence. Applied Physics Letters, 2014, 105, 032101.	3.3	30
53	InGaN/GaN quantum wells for polariton laser diodes: Role of inhomogeneous broadening. Journal of Applied Physics, 2014, 115, .	2.5	15
54	Optical, structural, and morphological characterisation of epitaxial ZnO films grown by pulsed-laser deposition. Thin Solid Films, 2013, 539, 55-59.	1.8	26

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55	Impact of saturation on the polariton renormalization in III-nitride based planar microcavities. Physical Review B, 2013, 88, .	3.2	17
56	Large-kexciton dynamics in GaN epilayers: Nonthermal and thermal regimes. Physical Review B, 2013, 87, .	3.2	9
57	Intrinsic degradation mechanism of nearly lattice-matched InAlN layers grown on GaN substrates. Journal of Applied Physics, 2013, 113, 063506.	2.5	55
58	<i>Q</i>-factor of (In,Ga)N containing III-nitride microcavity grown by multiple deposition techniques. Journal of Applied Physics, 2013, 114, .	2.5	11
59	Relative intensity noise and emission linewidth of polariton laser diodes. Physical Review B, 2013, 88, .	3.2	3
60	Properties of InAlN layers nearly lattice-matched to GaN and their use for photonics and electronics. , 2013, , 177-226.		4
61	Toward Quantum Fluids at Room Temperature: Polariton Condensation in III-Nitride Based Microcavities. Springer Series in Solid-state Sciences, 2013, , 201-230.	0.3	0
62	Nonlinear emission properties of an optically anisotropic GaN-based microcavity. Physical Review B, 2012, 86, .	3.2	5
63	Impact of biexcitons on the relaxation mechanisms of polaritons in III-nitride based multiple quantum well microcavities. Physical Review B, 2012, 85, .	3.2	13
64	High quality factor two dimensional GaN photonic crystal cavity membranes grown on silicon substrate. Applied Physics Letters, 2012, 100, .	3.3	64
65	Generic picture of the emission properties of III-nitride polariton laser diodes: Steady state and current modulation response. Physical Review B, 2012, 86, .	3.2	25
66	Mg doping for <i>p</i>-type AlInN lattice-matched to GaN. Applied Physics Letters, 2012, 101, 082113.	3.3	39
67	Investigation of InGaN/GaN quantum wells for polariton laser diodes. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 1325-1329.	0.8	8
68	A novel class of coherent light emitters: polariton lasers. Semiconductor Science and Technology, 2011, 26, 014030.	2.0	24
69	One-dimensional exciton luminescence induced by extended defects in nonpolar GaN/(Al,Ga)N quantum wells. Semiconductor Science and Technology, 2011, 26, 025012.	2.0	15
70	Solid-state lighting on glass. Nature Photonics, 2011, 5, 714-715.	31.4	7
71	Tailoring the light-matter coupling in anisotropic microcavities: Redistribution of oscillator strength in strained<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>m</mml:mi></mml:math>-plane GaN/AlGaN quantum wells. Physical Review B, 2011, 84, .	3.2	13
72	Polariton lasing in a hybrid bulk ZnO microcavity. Applied Physics Letters, 2011, 99, .	3.3	97

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73	Strain compensation in AlInN/GaN multilayers on GaN substrates: Application to the realization of defect-free Bragg reflectors. Applied Physics Letters, 2011, 98, .	3.3	54
74	Probing exciton density of states through phonon-assisted emission in GaN epilayers:<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>A</mml:mi></mml:math>and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>B</mml:mi></mml:math>exciton contributions. Physical Review B, 2010, 82, .	3.2	5
75	Condensation phase diagram of cavity polaritons in GaN-based microcavities: Experiment and theory. Physical Review B, 2010, 81, .	3.2	88
76	Pinning and Depinning of the Polarization of Exciton-Polariton Condensates at Room Temperature. Physical Review Letters, 2010, 104, 166402.	7.8	33
77	Spin relaxation of free excitons in narrowGaN/AlxGa1âˆ’xNquantum wells. Physical Review B, 2010, 82, .	3.2	5
78	Anomalous composition dependence of the band gap pressure coefficients in In-containing nitride semiconductors. Physical Review B, 2010, 81, .	3.2	27
79	GaN-based laser diodes including a lattice-matched Al0.83In0.17N cladding layer. , 2009, , .		0
80	Phase diagram of a polariton laser from cryogenic to room temperature. Physical Review B, 2009, 80, .	3.2	32
81	Al 0.83 In 0.17 N lattice-matched to GaN used as an optical blocking layer in GaN-based edge emitting lasers. Applied Physics Letters, 2009, 94, .	3.3	34
82	Room temperature polariton lasing in III-nitride microcavities: a comparison with blue GaN-based vertical cavity surface emitting lasers. , 2009, , .		20
83	Homogeneous and inhomogeneous linewidth broadening of single polar GaN/AlN quantum dots. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, S598-S601.	0.8	13
84	Tailoring the strong coupling regime in IIIâ€nitride based microcavities for room temperature polariton laser applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 2820-2827.	0.8	7
85	Quantum confinement dependence of the energy splitting and recombination dynamics of A and B excitons in a GaN/AlGaN quantum well. Physical Review B, 2009, 79, .	3.2	6
86	High reflectivity airgap distributed Bragg reflectors realized by wet etching of AlInN sacrificial layers. Applied Physics Letters, 2009, 95, .	3.3	13
87	Towards room temperature electrically pumped blue vertical cavity surface emitting lasers. , 2009, , .		0
88	Biexciton recombination in high quality GaN/AlGaN quantum wells. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 2254-2256.	0.8	1
89	Spontaneous Polarization Buildup in a Room-Temperature Polariton Laser. Physical Review Letters, 2008, 101, 136409.	7.8	197
90	Room temperature polariton lasing in a GaNâˆ•AlGaN multiple quantum well microcavity. Applied Physics Letters, 2008, 93, .	3.3	267

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91	Impact of quantum confinement and quantum confined Stark effect on biexciton binding energy in GaNâˆ•AlGaN quantum wells. Applied Physics Letters, 2008, 93, .	3.3	13
92	Effects of Polarization in Optoelectronic Quantum Structures. , 2008, , 467-511.		18
93	Complex behavior of biexcitons in GaN quantum dots due to a giant built-in polarization field. Physical Review B, 2008, 77, .	3.2	64
94	Large vacuum Rabi splitting in a multiple quantum well GaN-based microcavity in the strong-coupling regime. Physical Review B, 2008, 77, .	3.2	76
95	High quality nitride based microdisks obtained via selective wet etching of AlInN sacrificial layers. Applied Physics Letters, 2008, 92, .	3.3	57
96	Nonpolar GaN-based microcavity using AlNâˆ•GaN distributed Bragg reflector. Applied Physics Letters, 2008, 92, 061114.	3.3	12
97	Blue laser diodes including lattice-matched Al0.83In0.17N bottom cladding layer. Electronics Letters, 2008, 44, 521.	1.0	23
98	Biexciton kinetics in GaN quantum wells: Time-resolved and time-integrated photoluminescence measurements. Physical Review B, 2008, 77, .	3.2	16
99	Room temperature polariton lasing and BEC in semiconductor microcavities. , 2008, , .		0
100	Growth mode induced carrier localization in InGaN/GaN quantum wells. Philosophical Magazine, 2007, 87, 2067-2075.	1.6	8
101	Blue lasing at room temperature in an optically pumped lattice-matched AlInN/GaN VCSEL structure. Electronics Letters, 2007, 43, 924.	1.0	51
102	Blue lasing at room temperature in high quality factor GaNâˆ•AlInN microdisks with InGaN quantum wells. Applied Physics Letters, 2007, 90, 061106.	3.3	52
103	Efficient current injection scheme for nitride vertical cavity surface emitting lasers. Applied Physics Letters, 2007, 90, 033514.	3.3	28
104	Narrow UV emission from homogeneous GaNâˆ•AlGaN quantum wells. Applied Physics Letters, 2007, 90, 021905.	3.3	22
105	Current status of AlInN layers lattice-matched to GaN for photonics and electronics. Journal Physics D: Applied Physics, 2007, 40, 6328-6344.	2.8	304
106	a-plane GaN grown on r-plane sapphire substrates by hydride vapor phase epitaxy. Journal of Crystal Growth, 2007, 300, 186-189.	1.5	24
107	Strain relaxation of AlN epilayers for Stranskiâ€"Krastanov GaN/AlN quantum dots grown by metal organic vapor phase epitaxy. Journal of Crystal Growth, 2007, 299, 254-258.	1.5	6
108	Nitride-based heterostructures grown by MOCVD for near- and mid-infrared intersubband transitions. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 1100-1104.	1.8	5

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109	Room-Temperature Polariton Lasing in Semiconductor Microcavities. Physical Review Letters, 2007, 98, 126405.	7.8	833
110	Impact of inhomogeneous excitonic broadening on the strong exciton-photon coupling in quantum well nitride microcavities. Physical Review B, 2006, 73, .	3.2	48
111	High quality thin GaN templates grown by hydride vapor phase epitaxy on sapphire substrates. Applied Physics Letters, 2006, 88, 241914.	3.3	26
112	Stranski-Krastanov GaNâˆ•AlN quantum dots grown by metal organic vapor phase epitaxy. Journal of Applied Physics, 2006, 99, 083509.	2.5	32
113	Room temperature polariton luminescence from a GaNâˆ•AlGaN quantum well microcavity. Applied Physics Letters, 2006, 89, 071107.	3.3	31
114	Crack-free highly reflective AlInNâˆ•AlGaN Bragg mirrors for UV applications. Applied Physics Letters, 2006, 88, 051108.	3.3	78
115	Room-temperature polariton luminescence from a bulk GaN microcavity. Physical Review B, 2006, 73, .	3.2	79
116	Impact of disorder on high quality factor III-V nitride microcavities. Applied Physics Letters, 2006, 89, 261101.	3.3	66
117	Progresses in III-nitride distributed Bragg reflectors and microcavities using AlInN/GaN materials. Physica Status Solidi (B): Basic Research, 2005, 242, 2326-2344.	1.5	140
118	Lattice-matched distributed Bragg reflectors for nitride-based vertical cavity surface emitting lasers. Electronics Letters, 2005, 41, 94.	1.0	45
119	Midinfrared intersubband absorption in lattice-matched AlInNâˆ•GaN multiple quantum wells. Applied Physics Letters, 2005, 87, 111106.	3.3	81
120	Recent Progress in the Growth of Highly Reflective Nitride-Based Distributed Bragg Reflectors and Their Use in Microcavities. Japanese Journal of Applied Physics, 2005, 44, 7207-7216.	1.5	88
121	Crack-free fully epitaxial nitride microcavity using highly reflective AlInNâˆ•GaN Bragg mirrors. Applied Physics Letters, 2005, 86, 031107.	3.3	102
122	High-reflectivity AlxGa1âˆ’xNâˆ•AlyGa1âˆ’yN distributed Bragg reflectors with peak wavelength around 350nm. Applied Physics Letters, 2004, 85, 43-45.	3.3	32
123	Dependence of stimulated scattering in semiconductor microcavities on pump power, angle, and energy. Physical Review B, 2003, 68, .	3.2	48
124	Photoluminescence emission and Raman scattering polarization in birefringent organic microcavities in the strong coupling regime. Journal of Applied Physics, 2003, 93, 5003-5007.	2.5	11
125	Strong coupling in high-finesse organic semiconductor microcavities. Applied Physics Letters, 2003, 83, 5377-5379.	3.3	36
126	Links between hydrogen bonding, residual stress, structural properties and metastability in hydrogenated nanostructured silicon thin films. Journal of Physics Condensed Matter, 2003, 15, 7185-7200.	1.8	11

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127	Structural properties and recombination processes in hydrogenated polymorphous silicon. EPJ Applied Physics, 2003, 22, 171-178.	0.7	6
128	Transition from strong to weak coupling and the onset of lasing in semiconductor microcavities. Physical Review B, 2002, 65, .	3.2	91
129	Hydrogen related bonding structure in hydrogenated polymorphous and microcrystalline silicon. Journal of Non-Crystalline Solids, 2002, 299-302, 220-225.	3.1	17
130	Evolution with light-soaking of polymorphous material prepared at 423 K. Journal of Non-Crystalline Solids, 2002, 299-302, 482-486.	3.1	9
131	High-occupancy effects and stimulation phenomena in semiconductor microcavities. IEEE Journal of Selected Topics in Quantum Electronics, 2002, 8, 1060-1071.	2.9	10
132	Polaritonâ€“polariton interactions and stimulated scattering in semiconductor microcavities. Materials Science and Engineering C, 2002, 19, 407-416.	7.3	14
133	Polariton traps in semiconductor microcavities. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 385-389.	2.7	5
134	High Occupancy Effects and Condensation Phenomena in Semiconductor Microcavities and Bulk Semiconductors. Nanoscience and Technology, 2002, , 273-296.	1.5	0
135	Stimulated Polariton Scattering in Semiconductor Microcavities: New Physics and Potential Applications. Advanced Materials, 2001, 13, 1725-1730.	21.0	17
136	Thermoelectric power in undoped hydrogenated polymorphous silicon. Thin Solid Films, 2000, 366, 207-210.	1.8	9
137	Structural, optical and electronic properties of hydrogenated polymorphous silicon films deposited at 150Â°C. Journal of Non-Crystalline Solids, 2000, 266-269, 263-268.	3.1	46
138	Structural properties depicted by optical measurements in hydrogenated polymorphous silicon. Journal of Physics Condensed Matter, 1999, 11, 8749-8757.	1.8	15
139	Determination of the midgap density of states and capture cross-sections in polymorphous silicon by space-charge-limited conductivity and relaxation. Philosophical Magazine Letters, 1999, 79, 763-769.	1.2	12
140	Midgap density of states in hydrogenated polymorphous silicon. Journal of Applied Physics, 1999, 86, 946-950.	2.5	96
141	Very low densities of localized states at the Fermi level in hydrogenated polymorphous silicon from capacitance and space-charge-limited current measurements. Applied Physics Letters, 1999, 75, 3351-3353.	3.3	55
142	Some electronic and metastability properties of a new nanostructured material: Hydrogenated polymorphous silicon. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1999, 79, 1079-1095.	0.6	47
143	Some electronic and metastability properties of a new nanostructured material: hydrogenated polymorphous silicon. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1999, 79, 1079-1096.	0.6	10
144	Progresses in III-Nitride Distributed Bragg Reflectors and Microcavities Using AlInN/GaN Materials. , 0, , 261-286.		0