

Valentin Jmerik

List of Publications by Year in descending order

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115
papers

1,401
citations

393982

19
h-index

395343

33
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118
all docs

118
docs citations

118
times ranked

1211
citing authors

#	ARTICLE	IF	CITATIONS
1	Mie Resonances, Infrared Emission, and the Band Gap of InN. <i>Physical Review Letters</i> , 2004, 92, 117407.	2.9	191
2	High-Output-Power Ultraviolet Light Source from Quasi-2D GaN Quantum Structure. <i>Advanced Materials</i> , 2016, 28, 7978-7983.	11.1	72
3	Low-threshold 303 nm lasing in AlGaIn-based multiple-quantum well structures with an asymmetric waveguide grown by plasma-assisted molecular beam epitaxy on c-sapphire. <i>Applied Physics Letters</i> , 2010, 96, 141112.	1.5	55
4	Control of threading dislocation density at the initial growth stage of AlN on c-sapphire in plasma-assisted MBE. <i>Journal of Crystal Growth</i> , 2013, 378, 319-322.	0.7	54
5	Plasma-assisted MBE growth and characterization of InN on sapphire. <i>Journal of Crystal Growth</i> , 2004, 269, 1-9.	0.7	53
6	Insight into the performance of multi-color InGaIn/GaN nanorod light emitting diodes. <i>Scientific Reports</i> , 2018, 8, 7311.	1.6	51
7	Growth of thick AlN epilayers with droplet-free and atomically smooth surface by plasma-assisted molecular beam epitaxy using laser reflectometry monitoring. <i>Journal of Crystal Growth</i> , 2012, 354, 188-192.	0.7	47
8	Plasma-assisted molecular beam epitaxy of AlGaIn heterostructures for deep-ultraviolet optically pumped lasers. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2013, 210, 439-450.	0.8	47
9	Metastable nature of InN and In-rich InGaIn alloys. <i>Journal of Crystal Growth</i> , 2014, 403, 83-89.	0.7	43
10	Deep Ultraviolet Light Source from Ultrathin GaInAlN MQW Structures with Output Power Over 2 Watt. <i>Advanced Optical Materials</i> , 2019, 7, 1801763.	3.6	43
11	Plasma-assisted molecular beam epitaxy of Al(Ga)N layers and quantum well structures for optically pumped mid-UV lasers on c-Al ₂ O ₃ . <i>Semiconductor Science and Technology</i> , 2014, 29, 084008.	1.0	39
12	AlGaIn quantum well structures for deep-UV LEDs grown by plasma-assisted MBE using sub-monolayer digital-alloying technique. <i>Journal of Crystal Growth</i> , 2009, 311, 2080-2083.	0.7	36
13	Optically Enhanced Emission of Localized Excitons in In _x Ga _{1-x} N Films by Coupling to Plasmons in a Gold Nanoparticle. <i>Physical Review Letters</i> , 2009, 103, 037403.	2.9	34
14	Solar-blind UV photocathodes based on AlGaIn heterostructures with a 300- to 330-nm spectral sensitivity threshold. <i>Technical Physics Letters</i> , 2012, 38, 439-442.	0.2	33
15	Beam pumped mid-UV sources based on MBE-grown AlGaIn MQW. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015, 212, 1011-1016.	0.8	29
16	Optical properties of InN with stoichiometry violation and indium clustering. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2005, 202, 377-382.	0.8	26
17	High resolution transmission electron microscopy of InN. <i>Applied Physics Letters</i> , 2007, 91, .	1.5	24
18	Strongly Confined Excitons in GaInAlN Nanostructures with Atomically Thin GaIn Layers for Efficient Light Emission in Deep-Ultraviolet. <i>Nano Letters</i> , 2020, 20, 158-165.	4.5	22

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19	Plasmon-induced Purcell effect in InN/In metal-semiconductor nanocomposites. <i>Physical Review B</i> , 2010, 82, .	1.1	21
20	Effect of stoichiometric conditions and growth mode on threading dislocations filtering in AlN/c-Al ₂ O ₃ templates grown by PA MBE. <i>Superlattices and Microstructures</i> , 2020, 138, 106368.	1.4	19
21	Structural and optical properties of PA MBE AlGa _x N quantum well heterostructures grown on c-Al ₂ O ₃ by using flux- and temperature-modulated techniques. <i>Journal of Materials Research</i> , 2015, 30, 2871-2880.	1.2	17
22	AlGa _x N-based quantum-well heterostructures for deep ultraviolet light-emitting diodes grown by submonolayer discrete plasma-assisted molecular-beam epitaxy. <i>Semiconductors</i> , 2008, 42, 1420-1426.	0.2	16
23	Terahertz electroluminescence of surface plasmons from nanostructured InN layers. <i>Applied Physics Letters</i> , 2010, 96, .	1.5	16
24	Inconsistency of basic optical processes in plasmonic nanocomposites. <i>Physical Review B</i> , 2009, 79, .	1.1	15
25	Phase separation in In _x Ga _{1-x} N (0.10 x 0.40). <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2013, 10, 527-531.	0.8	15
26	Model for the deep defect-related emission bands between 1.4 and 2.4 eV in AlN. <i>Physica Status Solidi (B): Basic Research</i> , 2017, 254, 1600714.	0.7	15
27	Pulsed growth techniques in plasma-assisted molecular beam epitaxy of Al Ga _{1-x} N layers with medium Al content ($x=0.4\text{--}0.6$). <i>Journal of Crystal Growth</i> , 2015, 425, 9-12.	0.7	14
28	Phonons in Short-Period GaN/AlN Superlattices: Group-Theoretical Analysis, Ab initio Calculations, and Raman Spectra. <i>Nanomaterials</i> , 2021, 11, 286.	1.9	14
29	Monolayer-thick GaN/AlN Multilayer Heterostructures for Deep-Ultraviolet Optoelectronics. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021, 15, 2100242.	1.2	14
30	III-nitride tunable cup-cavities supporting quasi whispering gallery modes from ultraviolet to infrared. <i>Scientific Reports</i> , 2016, 5, 17970.	1.6	13
31	Controlling active nitrogen flux in plasma-assisted molecular beam epitaxy of group III nitrides. <i>Technical Physics Letters</i> , 2007, 33, 333-336.	0.2	11
32	Abnormal magnetic-field dependence of Hall coefficient in InN epilayers. <i>Applied Physics Letters</i> , 2009, 95, .	1.5	11
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37	Direct observation of spatial distribution of carrier localization sites in ultrathin GaN/AlN quantum wells by spreading resistance microscopy. Applied Physics Letters, 2019, 114, .	1.5	10
38	Monolayer-Scale GaN/AlN Multiple Quantum Wells for High Power e-Beam Pumped UV-Emitters in the 240â€“270 nm Spectral Range. Nanomaterials, 2021, 11, 2553.	1.9	10
39	Intrinsic electric fields in N-polarity GaN/Al _x Ga _{1-x} N quantum wells with inversion domains. Physical Review B, 2003, 67, .	1.1	9
40	Plasmonic effects in InN-based structures with nano-clusters of metallic indium. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 13-24.	0.8	9
41	Solar-blind Al _x Ga _{1-x} N (x > 0.45) p-i-n photodiodes with a polarization-p-doped emitter. Technical Physics Letters, 2016, 42, 635-638.	0.2	9
42	Stress control in thick AlN/c-Al ₂ O ₃ templates grown by plasma-assisted molecular beam epitaxy. Semiconductor Science and Technology, 2021, 36, 035007.	1.0	9
43	Large magnetoresistance effect in InN epilayers. Physical Review B, 2010, 82, .	1.1	8
44	Role of strain in growth kinetics of AlGaIn layers during plasma-assisted molecular beam epitaxy. Journal of Crystal Growth, 2011, 323, 68-71.	0.7	8
45	Shubina et al. Reply:. Physical Review Letters, 2004, 93, .	2.9	7
46	Optical properties of InN related to surface plasmons. Physica Status Solidi A, 2005, 202, 2633-2641.	1.7	7
47	Plasmon-induced enhancement of yellow-red luminescence in InGaIn/Au nanocomposites. Semiconductors, 2015, 49, 247-253.	0.2	7
48	Nanometric-Scale Fluctuations of Intrinsic Electric Fields in GaN/AlGaIn Quantum Wells with Inversion Domains. Physica Status Solidi (B): Basic Research, 2002, 234, 919-923.	0.7	6
49	Phonon-assisted exciton luminescence in GaN layers grown by MBE and chloride-hydride VPE. Semiconductors, 2003, 37, 532-536.	0.2	6
50	Features of the spatial distribution of indium in InGaIn epitaxial layers grown by plasma-assisted molecular beam epitaxy. Semiconductors, 2008, 42, 616-623.	0.2	6
51	Quantum-confined stark effect and localization of charge carriers in Al _{0.3} Ga _{0.7} N/Al _{0.4} Ga _{0.6} N quantum wells with different morphologies. Semiconductors, 2012, 46, 998-1002.	0.2	6
52	Temperature dependences of the contact resistivity in ohmic contacts to n +InN. Semiconductors, 2015, 49, 461-471.	0.2	6
53	Selective area growth of N-polar GaN nanorods by plasma-assisted MBE on micro-cone-patterned c-sapphire substrates. Journal of Crystal Growth, 2017, 477, 207-211.	0.7	6
54	Growth kinetics of Al _x Ga _{1-x} N layers (0 < x < 1) in plasma-assisted molecular beam epitaxy. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2046-2048.	0.8	5

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55	III-nitride microcrystal cavities with quasi whispering gallery modes grown by molecular beam epitaxy. <i>Physica Status Solidi (B): Basic Research</i> , 2016, 253, 845-852.	0.7	5
56	Electrical properties of surface and interface layers of the N- and In-polar undoped and Mg-doped InN layers grown by PA MBE. <i>Applied Physics Letters</i> , 2018, 112, 022104.	1.5	5
57	The Effect of Interface Diffusion on Raman Spectra of Wurtzite Short-Period GaN/AlN Superlattices. <i>Nanomaterials</i> , 2021, 11, 2396.	1.9	5
58	Coaxial rf-magnetron nitrogen activator for GaN MBE growth. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 1999, 59, 60-64.	1.7	4
59	Inhomogeneous InGaN and InN with In-enriched Nanostructures. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	4
60	RHEED monitoring of elastic stresses during MBE growth of group III nitride heterostructures. <i>Technical Physics Letters</i> , 2012, 38, 443-445.	0.2	4
61	Drastic change in electronic structure of AlGa _N under Ba adsorption. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2013, 10, 494-497.	0.8	4
62	Nanoscale visualization of electronic properties of Al _x Ga _{1-x} N/Al _y Ga _{1-y} N multiple quantum-well heterostructure by spreading resistance microscopy. <i>Journal of Applied Physics</i> , 2017, 121, 014305.	1.1	4
63	Stimulated emission, photoluminescence, and localisation of nonequilibrium charge carriers in ultrathin (monolayer) GaN/AlN quantum wells. <i>Quantum Electronics</i> , 2019, 49, 535-539.	0.3	4
64	A Photomultiplier With an AlGa _N Photocathode and Microchannel Plates for BaF ₂ Scintillator Detectors in Particle Physics. <i>IEEE Transactions on Nuclear Science</i> , 2020, 67, 1760-1764.	1.2	4
65	Optical Control of Group-III and N Flux Intensities in Plasma-Assisted MBE with RF Capacitively-Coupled Magnetron Nitrogen Activator. <i>Physica Status Solidi A</i> , 2001, 188, 615-619.	1.7	3
66	Growth of optically-active InN with AlInN buffer by plasma-assisted molecular beam epitaxy. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2003, 0, 2846-2850.	0.8	3
67	Localized plasmons at pores and clusters within inhomogeneous indium nitride films. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2007, 4, 2445-2448.	0.8	3
68	Electrical and optical properties of InN with periodic metallic in insertions. <i>Semiconductors</i> , 2009, 43, 285-288.	0.2	3
69	Detection of metallic In nanoparticles in InGa _N alloys. <i>Applied Physics Letters</i> , 2011, 99, 072107.	1.5	3
70	Site-controlled GaN nanocolumns with InGa _N insertions grown by MBE. <i>Journal of Physics: Conference Series</i> , 2017, 917, 032032.	0.3	3
71	Stress generation and relaxation in (Al,Ga)N/6H-SiC heterostructure grown by plasma-assisted molecular-beam epitaxy. <i>Technical Physics Letters</i> , 2017, 43, 443-446.	0.2	3
72	AlGa _N Nanostructures with Extremely High Room-Temperature Internal Quantum Efficiency of Emission Below 300Ånm. <i>Journal of Electronic Materials</i> , 2017, 46, 3888-3893.	1.0	3

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73	Kinetic limitations of stress relaxation and generation in GaN/AlN and AlGaN: Si/AlN heterostructures grown on c-sapphire by plasma-assisted molecular beam epitaxy. Journal of Physics: Conference Series, 2018, 1038, 012061.	0.3	3
74	Phonons in short-period (GaN) _m (AlN) _n superlattices: ab initio calculations and group-theoretical analysis of modes and their genesis. Journal of Physics: Conference Series, 2019, 1400, 066016.	0.3	3
75	Narrow-line excitonic photoluminescence in GaN/Al _x Ga _{1-x} N quantum well structures with inversion domains. Physical Review B, 2003, 67, .	1.1	2
76	Electrical properties and optical absorption in InN:In structures. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 1621-1623.	0.8	2
77	Multifunction metal-semiconductor nanocomposites. Bulletin of the Russian Academy of Sciences: Physics, 2010, 74, 61-64.	0.1	2
78	Mode adjustment in hexagonal microresonators with an active region. Journal of Physics: Conference Series, 2016, 741, 012126.	0.3	2
79	X-ray diffractometry of AlN/c-sapphire templates obtained by plasma-activated molecular beam epitaxy. Technical Physics Letters, 2016, 42, 419-422.	0.2	2
80	Enhanced photoluminescence efficiency in AlGaIn quantum wells with gradient-composition AlGaIn barriers. Journal of Physics: Conference Series, 2016, 741, 012118.	0.3	2
81	Features of the Selective Growth of GaN Nanorods on Patterned c-Sapphire Substrates of Various Configurations. Semiconductors, 2018, 52, 1770-1774.	0.2	2
82	Optical properties of GaN/AlGaIn quantum wells with inversion domains. Physica Status Solidi A, 2003, 195, 537-542.	1.7	1
83	Mie Resonant Absorption and Infrared Emission in InN Related to Metallic Indium Clusters. AIP Conference Proceedings, 2005, .	0.3	1
84	Resonant coupling between a gold-nanosphere plasmon and localized excitons in InGaIn. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, S619-S622.	0.8	1
85	Exciton recombination in spontaneously formed and artificial quantum wells Al _x Ga _{1-x} N/Al _y Ga _{1-y} N (x&y~1/40.8). Physica Status Solidi C: Current Topics in Solid State Physics, 2016, 13, 232-238.	0.8	1
86	Specific features of the cathodoluminescence spectra of AlInGaIn QWs, caused by the influence of phase separation and internal electric fields. Semiconductors, 2016, 50, 904-909.	0.2	1
87	Stress in (Al, Ga)N heterostructures grown on 6H-SiC and Si substrates by plasma-assisted molecular beam epitaxy. Journal of Physics: Conference Series, 2017, 917, 032018.	0.3	1
88	Stress evolution in AlN layers grown on c-Al ₂ O ₃ by plasma-assisted molecular beam epitaxy at metal-rich conditions. Journal of Physics: Conference Series, 2018, 1124, 022041.	0.3	1
89	Site-Controlled Growth of GaN Nanorods with Inserted InGaIn Quantum Wells on 1/4-Cone Patterned Sapphire Substrates by Plasma-Assisted MBE. Semiconductors, 2018, 52, 667-670.	0.2	1
90	Spontaneous Formation of Indium Clusters in InN Epilayers Grown by Molecular-Beam Epitaxy. Technical Physics Letters, 2018, 44, 149-152.	0.2	1

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91	Ultraviolet light-emitting diodes and photodiodes grown by plasma-assisted molecular beam epitaxy. Journal of Physics: Conference Series, 2018, 993, 012037.	0.3	1
92	Suppression of Stark effect in ultra-thin stress-free GaN/AlN multiple quantum well structures grown by plasma-assisted molecular beam epitaxy. Journal of Physics: Conference Series, 2019, 1410, 012032.	0.3	1
93	Boson Peak Related to Ga Nanoclusters in AlGaN Layers Grown by Plasma-Assisted Molecular Beam Epitaxy at Ga-Rich Conditions. Semiconductors, 2019, 53, 1479-1488.	0.2	1
94	An Increase of Threading Dislocations Filtering Efficiency in Al ₂ O ₃ Templates with Faceted Surface Morphology During a Growth by Molecular Beam Epitaxy. Technical Physics Letters, 2020, 46, 543-547.	0.2	1
95	Near-infrared optical absorption in GaN/AlN quantum wells grown by molecular-beam epitaxy. Journal of Physics: Conference Series, 2020, 1482, 012021.	0.3	1
96	Monolayer-Range Compositional Modulations in Al _x Ga _{1-x} N (x ≈ 0.6-0.75) Layers Grown Using Plasma-Assisted Molecular Beam Epitaxy under Me ₂ Rich Conditions with an Off-Centered Spatial Distribution of Activated Nitrogen Flux. Physica Status Solidi (A) Applications and Materials Science, 0, , 2100550.	0.8	1
97	Analysis of the sharpness of interfaces in short-period GaN/AlN superlattices using Raman spectroscopy data. Journal of Physics: Conference Series, 2021, 2103, 012147.	0.3	1
98	Polarized micro-photoluminescence spectroscopy of GaN nanocolumns. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 2602-2605.	0.8	0
99	Narrow-line excitonic luminescence in GaN/AlGaN nanostructures based on inversion domains. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 2716-2720.	0.8	0
100	Specific features of electrical properties of the In _x Ga _{1-x} N alloy. Semiconductors, 2007, 41, 540-541.	0.2	0
101	The quantum-confined Stark effect and localization of charge carriers in Al _x Ga _{1-x} N/Al _y Ga _{1-y} N quantum wells with different morphologies. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 319-322.	0.8	0
102	Fine Structural Studies of AlGaN Laser Heterostructures with Digitally Alloyed Quantum Wells Grown on c-Al ₂ O ₃ by plasma-Assisted Molecular Beam Epitaxy. Microscopy and Microanalysis, 2014, 20, 80-81.	0.2	0
103	Mode switching in InN microresonators. Journal of Physics: Conference Series, 2015, 643, 012061.	0.3	0
104	TEM Analysis of Defects in AlGaN Heterostructures Grown on C-Al ₂ O ₃ by Plasma Assisted Molecular Beam Epitaxy. Microscopy and Microanalysis, 2015, 21, 1803-1804.	0.2	0
105	E-beam pumped mid-ultraviolet sources based on AlGaN multiple quantum wells grown by MBE. , 2015, , .		0
106	Temperature switching of cavity modes in InN microcrystals. Semiconductors, 2015, 49, 1435-1439.	0.2	0
107	AlGaN nanostructures with extremely high quantum yield at 300 K. Physics of the Solid State, 2016, 58, 2261-2266.	0.2	0
108	Coexistence of type-I and type-II band line-ups in 1-2 monolayer thick GaN/AlN single quantum wells. Journal of Physics: Conference Series, 2017, 917, 062050.	0.3	0

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109	Ring resonator optical modes in InGaN/GaN structures grown on micro-cone-patterned sapphire substrates. Journal of Physics: Conference Series, 2018, 993, 012020.	0.3	0
110	Metal-Semiconductor Nanoheterostructures with an AlGaN Quantum Well and In Situ Formed Surface Al Nanoislands. Semiconductors, 2018, 52, 622-624.	0.2	0
111	Stress evolution during growth of AlN templates on c-Al ₂ O ₃ substrates by plasma-assisted molecular beam epitaxy. Journal of Physics: Conference Series, 2019, 1400, 055010.	0.3	0
112	A Scintillation Detector with a Barium Fluoride Crystal and a Photomultiplier with an AlGaN-based Photocathode and Microchannel Plates. , 2019, , .		0
113	Structural and Dynamical Properties of Short-Period GaN/AlN Superlattices: Experiment and Theory. Semiconductors, 2020, 54, 1706-1709.	0.2	0
114	Two-Dimensional Excitons in Multiple GaN/AlN Monolayer Quantum Wells. JETP Letters, 2021, 113, 504-509.	0.4	0
115	Growth Control of N-Polar GaN in Plasma-Assisted Molecular Beam Epitaxy. Acta Physica Polonica A, 2008, 114, 1253-1258.	0.2	0