Vladimir Dubrovskii

List of Publications by Citations

274 papers	5,745 citations	43 h-index	66 g-index
300 ext. papers	6,308 ext. citations	3 avg, IF	6.3 L-index

#	Paper	IF	Citations
274	Growth kinetics and crystal structure of semiconductor nanowires. *Physical Review B*, **2008**, 78,	3.3	263
273	Diffusion-induced growth of GaAs nanowhiskers during molecular beam epitaxy: Theory and experiment. *Physical Review B*, **2005**, 71,	3.3	258
272	Self-catalyzed, pure zincblende GaAs nanowires grown on Si(111) by molecular beam epitaxy. *Physical Review B*, **2010**, 82,	3.3	179
271	Nucleation Theory and Growth of Nanostructures. *Nanoscience and Technology*, **2014**,	0.6	164
270	Theoretical analysis of the vapor-liquid-solid mechanism of nanowire growth during molecular beam epitaxy. *Physical Review E*, **2006**, 73, 021603	2.4	154
269	Gibbs-Thomson and diffusion-induced contributions to the growth rate of Si, InP, and GaAs nanowires. *Physical Review B*, **2009**, 79,	3.3	147
268	Growth thermodynamics of nanowires and its application to polytypism of zinc blende III-V nanowires. *Physical Review B*, **2008**, 77,	3.3	147
267	Semiconductor nanowhiskers: Synthesis, properties, and applications. *Semiconductors*, **2009**, 43, 1539-1584	0.7	146
266	New mode of vapor-liquid-solid nanowire growth. *Nano Letters*, **2011**, 11, 1247-53	11.5	125
265	Au-assisted molecular beam epitaxy of InAs nanowires: Growth and theoretical analysis. *Journal of Applied Physics*, **2007**, 102, 094313	2.5	123
264	Critical diameters and temperature domains for MBE growth of III⁄V nanowires on lattice mismatched substrates. *Physica Status Solidi - Rapid Research Letters*, **2009**, 3, 112-114	2.5	108
263	Kinetics of the initial stage of coherent island formation in heteroepitaxial systems. *Physical Review B*, **2003**, 68,	3.3	104
262	Growth rate of a crystal facet of arbitrary size and growth kinetics of vertical nanowires. *Physical Review E*, **2004**, 70, 031604	2.4	99
261	Self-Equilibration of the Diameter of Ga-Catalyzed GaAs Nanowires. *Nano Letters*, **2015**, 15, 5580-4	11.5	90
260	Role of nonlinear effects in nanowire growth and crystal phase. *Physical Review B*, **2009**, 80,	3.3	83
259	Stopping and Resuming at Will the Growth of GaAs Nanowires. *Crystal Growth and Design*, **2013**, 13, 3976-3984	3.5	80
258	Surface energy and crystal structure of nanowhiskers of III⁄V semiconductor compounds. *Physics of the Solid State*, **2010**, 52, 1531-1538	0.8	74

257	Record pure zincblende phase in GaAs nanowires down to 5 nm in radius. *Nano Letters*, **2014**, 14, 3938-44	11.5	72
256	Quantitative description for the growth rate of self-induced GaN nanowires. *Physical Review B*, **2012**, 85,	3.3	69
255	Influence of the group V element on the chemical potential and crystal structure of Au-catalyzed III-V nanowires. *Applied Physics Letters*, **2014**, 104, 053110	3.4	66
254	Analytical Study of Elastic Relaxation and Plastic Deformation in Nanostructures on Lattice Mismatched Substrates. *Crystal Growth and Design*, **2011**, 11, 5441-5448	3.5	63
253	Template-Assisted Scalable Nanowire Networks. *Nano Letters*, **2018**, 18, 2666-2671	11.5	61
252	Self-regulated pulsed nucleation in catalyzed nanowire growth. *Physical Review B*, **2013**, 87,	3.3	59
251	Scaling growth kinetics of self-induced GaN nanowires. *Applied Physics Letters*, **2012**, 100, 153101	3.4	57
250	Tailoring the diameter and density of self-catalyzed GaAs nanowires on silicon. *Nanotechnology*, **2015**, 26, 105603	3.4	53
249	Growth mechanisms and crystallographic structure of InP nanowires on lattice-mismatched substrates. *Journal of Applied Physics*, **2008**, 104, 044313	2.5	53
248	Diffusion-controlled growth of semiconductor nanowires: Vapor pressure versus high vacuum deposition. *Surface Science*, **2007**, 601, 4395-4401	1.8	53
247	Narrowing the length distribution of Ge nanowires. *Physical Review Letters*, **2012**, 108, 105501	7.4	52
246	Shape modification of III-V nanowires: the role of nucleation on sidewalls. *Physical Review E*, **2008**, 77, 031606	2.4	52
245	Nucleation theory beyond the deterministic limit. I. The nucleation stage. *Journal of Chemical Physics*, **2010**, 132, 114507	3.9	50
244	Phase Selection in Self-catalyzed GaAs Nanowires. *Nano Letters*, **2020**, 20, 1669-1675	11.5	49
243	Photovoltaic Properties of p-Doped GaAs Nanowire Arrays Grown on n-Type GaAs(111)B Substrate. *Nanoscale Research Letters*, **2009**, 5, 360-3	5	49
242	Zeldovich Nucleation Rate, Self-Consistency Renormalization, and Crystal Phase of Au-Catalyzed GaAs Nanowires. *Crystal Growth and Design*, **2015**, 15, 340-347	3.5	48
241	Scaling thermodynamic model for the self-induced nucleation of GaN nanowires. *Physical Review B*, **2012**, 85,	3.3	48
240	Fluctuation-induced spreading of size distribution in condensation kinetics. *Journal of Chemical Physics*, **2009**, 131, 164514	3.9	48

239	Growth of GaAs nanoscale whiskers by magnetron sputtering deposition. *Journal of Crystal Growth*, **2006**, 289, 31-36	1.6	47
238	Bistability of Contact Angle and Its Role in Achieving Quantum-Thin Self-Assisted GaAs nanowires. *Nano Letters*, **2018**, 18, 49-57	11.5	46
237	Simultaneous Selective-Area and Vapor-Liquid-Solid Growth of InP Nanowire Arrays. *Nano Letters*, **2016**, 16, 4361-7	11.5	46
236	Formation of InAs quantum dots on a silicon (100) surface. *Semiconductor Science and Technology*, **1998**, 13, 1262-1265	1.8	46
235	The role of surface diffusion of adatoms in the formation of nanowire crystals. *Semiconductors*, **2006**, 40, 1075-1082	0.7	45
234	Unconventional growth mechanism for monolithic integration of III-V on silicon. *ACS Nano*, **2013**, 7, 100-7	16.7	44
233	Boron distribution in the core of Si nanowire grown by chemical vapor deposition. *Journal of Applied Physics*, **2012**, 111, 094909	2.5	43
232	Stress-Driven Nucleation of Three-Dimensional Crystal Islands: From Quantum Dots to Nanoneedles. *Crystal Growth and Design*, **2010**, 10, 3949-3955	3.5	43
231	On the non-monotonic lateral size dependence of the height of GaAs nanowhiskers grown by molecular beam epitaxy at high temperature. *Physica Status Solidi (B): Basic Research*, **2004**, 241, R30-R33	1.3	41
230	Nucleation and Growth of Adsorbed Layer Self-Consistent Approach Based on Kolmogoroff-Avrami Model. *Physica Status Solidi (B): Basic Research*, **1992**, 171, 345-356	1.3	41
229	Influence of shadow effect on the growth and shape of InAs nanowires. *Journal of Applied Physics*, **2012**, 111, 104317	2.5	40
228	Diffusion-induced growth of nanowires: Generalized boundary conditions and self-consistent kinetic equation. *Journal of Crystal Growth*, **2014**, 401, 431-440	1.6	38
227	Development of Growth Theory for Vapor□Liquid□Solid Nanowires: Contact Angle, Truncated Facets, and Crystal Phase. *Crystal Growth and Design*, **2017**, 17, 2544-2548	3.5	37
226	Photoluminescence properties of InAs nanowires grown on GaAs and Si substrates. *Nanotechnology* , **2010**, 21, 335705	3.4	35
225	The diffusion mechanism in the formation of GaAs and AlGaAs nanowhiskers during the process of molecular-beam epitaxy. *Semiconductors*, **2005**, 39, 557-564	0.7	35
224	Engineering the Size Distributions of Ordered GaAs Nanowires on Silicon. *Nano Letters*, **2017**, 17, 4101-4108	11.5	34
223	Modeling of InAs-InSb nanowires grown by Au-assisted chemical beam epitaxy. *Nanotechnology*, **2012**, 23, 095602	3.4	33
222	Length Distributions of Nanowires Growing by Surface Diffusion. *Crystal Growth and Design*, **2016**, 16, 2167-2172	3.5	33

221	Fundamental aspects to localize self-catalyzed III-V nanowires on silicon. *Nature Communications*, **2019**, 10, 869	17.4	33
220	Readsorption Assisted Growth of InAs/InSb Heterostructured Nanowire Arrays. *Crystal Growth and Design*, **2013**, 13, 878-882	3.5	32
219	Composition-dependent interfacial abruptness in Au-catalyzed Si(1-x)Ge(x)/Si/Si(1-x)Ge(x) nanowire heterostructures. *Nano Letters*, **2014**, 14, 5140-7	11.5	31
218	Sub-Poissonian Narrowing of Length Distributions Realized in Ga-Catalyzed GaAs Nanowires. *Nano Letters*, **2017**, 17, 5350-5355	11.5	31
217	Understanding the growth and composition evolution of gold-seeded ternary InGaAs nanowires. *Nanoscale*, **2015**, 7, 16266-72	7.7	30
216	Control of morphology and crystal purity of InP nanowires by variation of phosphine flux during selective area MOMBE. *Nanotechnology*, **2015**, 26, 085303	3.4	27
215	Length distributions of Au-catalyzed and In-catalyzed InAs nanowires. *Nanotechnology*, **2016**, 27, 375602	3.4	27
214	Origin of Spontaneous Core–Shell AlGaAs Nanowires Grown by Molecular Beam Epitaxy. *Crystal Growth and Design*, **2016**, 16, 7251-7255	3.5	27
213	Group V sensitive vapor–liquid–solid growth of Au-catalyzed and self-catalyzed III–V nanowires. *Journal of Crystal Growth*, **2016**, 440, 62-68	1.6	27
212	Understanding the composition of ternary III-V nanowires and axial nanowire heterostructures in nucleation-limited regime. *Materials and Design*, **2017**, 132, 400-408	8.1	27
211	Kinetic model of the growth of nanodimensional whiskers by the vapor-liquid-crystal mechanism. *Technical Physics Letters*, **2004**, 30, 682-686	0.7	27
210	Fully Analytical Description for the Composition of Ternary Vapor–Liquid–Solid Nanowires. *Crystal Growth and Design*, **2015**, 15, 5738-5743	3.5	26
209	Photoluminescence properties of GaAs nanowire ensembles with zincblende and wurtzite crystal structure. *Physica Status Solidi - Rapid Research Letters*, **2010**, 4, 175-177	2.5	26
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206	Model for large-area monolayer coverage of polystyrene nanospheres by spin coating. *Scientific Reports*, **2017**, 7, 40888	4.9	22
205	Catalyst Composition Tuning: The Key for the Growth of Straight Axial Nanowire Heterostructures with Group III Interchange. *Nano Letters*, **2016**, 16, 7183-7190	11.5	22
204	Three-fold Symmetric Doping Mechanism in GaAs Nanowires. *Nano Letters*, **2017**, 17, 5875-5882	11.5	22

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201	Optimizing the yield of A-polar GaAs nanowires to achieve defect-free zinc blende structure and enhanced optical functionality. *Nanoscale*, **2018**, 10, 17080-17091	7.7	22
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198	Scanning thermal microscopy with heat conductive nanowire probes. *Ultramicroscopy*, **2016**, 162, 42-51	3.1	20
197	Conditions for high yield of selective-area epitaxy InAs nanowires on SiO x /Si(111) substrates. *Nanotechnology*, **2015**, 26, 465301	3.4	20
196	Elastic energy relaxation and critical thickness for plastic deformation in the core-shell InGaAs/GaAs nanopillars. *Journal of Applied Physics*, **2013**, 113, 104311	2.5	20
195	Experimental and theoretical investigations on the phase purity of GaAs zincblende nanowires. *Semiconductor Science and Technology*, **2011**, 26, 014034	1.8	20
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192	Framed carbon nanostructures: synthesis and applications in functional SPM tips. *Ultramicroscopy*, **2015**, 148, 151-157	3.1	18
191	Factors Influencing the Interfacial Abruptness in Axial III$\overline{V}$ Nanowire Heterostructures. *Crystal Growth and Design*, **2016**, 16, 2019-2023	3.5	18
190	Growth of Inclined GaAs Nanowires by Molecular Beam Epitaxy: Theory and Experiment. *Nanoscale Research Letters*, **2010**, 5, 1692-7	5	18
189	Self-narrowing of size distributions of nanostructures by nucleation antibunching. *Physical Review Materials*, **2017**, 1,	3.2	18
188	Si Doping of Vapor-Liquid-Solid GaAs Nanowires: n-Type or p-Type?. *Nano Letters*, **2019**, 19, 4498-4504	11.5	17
187	Surface energy and modes of catalytic growth of semiconductor nanowhiskers. *Technical Physics Letters*, **2012**, 38, 311-315	0.7	17
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185	Calculation of the size-distribution function for quantum dots at the kinetic stage of growth. *Semiconductors*, **2006**, 40, 1123-1130	0.7	16
184	Nanoparticle Stability in Axial InAs-InP Nanowire Heterostructures with Atomically Sharp Interfaces. *Nano Letters*, **2018**, 18, 167-174	11.5	16
183	Determination of the diffusion lengths of Ga adatoms using GaN stripe profiling. *Physica Status Solidi (A) Applications and Materials Science*, **2015**, 212, 851-854	1.6	15
182	Temperature dependence of the quantum dot lateral size in the Ge/Si(100) system. *Physica Status Solidi (B): Basic Research*, **2003**, 236, R1-R3	1.3	15
181	Quaternary Chemical Potentials for Gold-Catalyzed Growth of Ternary InGaAs Nanowires. *Crystal Growth and Design*, **2016**, 16, 4526-4530	3.5	15
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179	Tuning the morphology of self-assisted GaP nanowires. *Nanotechnology*, **2018**, 29, 225603	3.4	14
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176	Growth kinetics of thin films formed by nucleation during layer formation. *Semiconductors*, **2005**, 39, 1267	0.7	14
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173	Physical consequences of the equivalence of conditions for the steady-state growth of nanowires and the nucleation on triple phase line. *Technical Physics Letters*, **2011**, 37, 53-57	0.7	13
172	Numerical analysis of Ostwald ripening in two-dimensional systems. *Journal of Chemical Physics*, **2011**, 134, 094507	3.9	13
171	Fabrication of InAs quantum dots on silicon. *Technical Physics Letters*, **1998**, 24, 290-292	0.7	13
170	Circumventing the miscibility gap in InGaN nanowires emitting from blue to red. *Nanotechnology*, **2018**, 29, 465602	3.4	13
169	Size distributions of fullerene surface clusters. *Applied Surface Science*, **2014**, 307, 46-51	6.7	12
168	Modeling the nucleation statistics in vapor□quid□olid nanowires. *Journal of Crystal Growth*, **2014**, 401, 51-55	1.6	12

167	Nucleation theory beyond the deterministic limit. II. The growth stage. *Journal of Chemical Physics*, **2010**, 132, 114508	3.9	12
166	Te incorporation and activation as n-type dopant in self-catalyzed GaAs nanowires. *Physical Review Materials*, **2019**, 3,	3.2	12
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162	Formation of (Ga,Mn)As nanowires and study of their magnetic properties. *Semiconductors*, **2012**, 46, 179-183	0.7	11
161	Effect of diffusion from a lateral surface on the rate of GaN nanowire growth. *Semiconductors*, **2012** , 46, 838-841	0.7	11
160	Selective Area Growth of GaN Nanowires on Graphene Nanodots. *Crystal Growth and Design*, **2020**, 20, 552-559	3.5	11
159	Deterministic Switching of the Growth Direction of Self-Catalyzed GaAs Nanowires. *Nano Letters*, **2019**, 19, 82-89	11.5	11
158	Length distributions of nanowires: Effects of surface diffusion versus nucleation delay. *Journal of Crystal Growth*, **2017**, 463, 139-144	1.6	10
157	Cobalt epitaxial nanoparticles on CaF2/Si(111): Growth process, morphology, crystal structure, and magnetic properties. *Physical Review B*, **2013**, 87,	3.3	10
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155	Temperature profile along a nanowhisker growing in high vacuum. *Technical Physics Letters*, **2006**, 32, 292-295	0.7	10
154	Kinetics and mechanism of planar nanowire growth. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 152-160	11.5	10
153	Formation Mechanism of Twinning Superlattices in Doped GaAs Nanowires. *Nano Letters*, **2020**, 20, 3344-3351	11.5	9
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150	Threshold behavior of the formation of nanometer islands in a Ge/Si(100) system in the presence of Sb. *Semiconductors*, **2005**, 39, 547-551	0.7	9

149	GaAs nanoscale membranes: prospects for seamless integration of III-Vs on silicon. *Nanoscale*, **2020**, 12, 815-824	7.7	9
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145	Heteroepitaxial growth of InAs on Si: A new type of quantum dot. *Semiconductors*, **1999**, 33, 972-975	0.7	8
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143	Gallium nitride nanowires and microwires with exceptional length grown by metal organic chemical vapor deposition via titanium film. *Journal of Applied Physics*, **2015**, 117, 024301	2.5	7
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140	Classification of the Morphologies and Related Crystal Phases of III–V Nanowires Based on the Surface Energy Analysis. *Journal of Physical Chemistry C*, **2019**, 123, 18693-18701	3.8	7
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137	Simultaneous Selective Area Growth of Wurtzite and Zincblende Self-Catalyzed GaAs Nanowires on Silicon. *Nano Letters*, **2021**, 21, 3139-3145	11.5	7
136	Evolution of the Length and Radius of Catalyst-Free III-V Nanowires Grown by Selective Area Epitaxy. *ACS Omega*, **2019**, 4, 8400-8405	3.9	6
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132	Growth of GaAs nanowhisker arrays by magnetron sputtering on Si(111) substrates. *Technical Physics Letters*, **2006**, 32, 520-522	0.7	6

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125	Tungstate sharpening: a versatile method for extending the profile of ultra sharp tungsten probes. *Review of Scientific Instruments*, **2013**, 84, 035107	1.7	5
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119	A modified Kolmogorov model and the growth rate of a crystal face of arbitrary size. *Technical Physics Letters*, **2004**, 30, 791-794	0.7	5
118	Kinetically controlled engineering of quantum dot arrays. *Physica Status Solidi (B): Basic Research*, **2003**, 238, R1-R4	1.3	5
117	Influence of antimony on the morphology and properties of an array of Ge/Si(100) quantum dots. *Physics of the Solid State*, **2005**, 47, 58	0.8	5
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113	Quasi One-Dimensional Metal-Semiconductor Heterostructures. *Nano Letters*, **2019**, 19, 3892-3897	11.5	4
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111	Surface Diffusion of Gallium as the Origin of Inhomogeneity in Selective Area Growth of GaN Nanowires on AlxOy Nucleation Stripes. *Crystal Growth and Design*, **2020**, 20, 4770-4778	3.5	4
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109	Regimes of radial growth for Ga-catalyzed GaAs nanowires. *Applied Physics A: Materials Science and Processing*, **2016**, 122, 1	2.6	4
108	Stabilization of the Morphology and Crystal Phase in Ensembles of Self-Catalyzed GaAs Nanowires. *Physica Status Solidi - Rapid Research Letters*, **2019**, 13, 1900301	2.5	4
107	The initial stage of growth of self-induced GaN nanowires. *Technical Physics Letters*, **2014**, 40, 471-474	0.7	4
106	Pólya distribution and its asymptotics in nucleation theory. *Technical Physics Letters*, **2014**, 40, 177-180	0.7	4
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104	Modeling GaN nanowire growth on silicon. *Technical Physics Letters*, **2013**, 39, 127-129	0.7	4
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99	Conformal Growth of Radial InGaAs Quantum Wells in GaAs Nanowires. *Journal of Physical Chemistry Letters*, **2021**, 12, 1275-1283	6.4	4
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