Rainer Timm

List of Publications by Year
in descending order

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Version: 2024-02-01

83 papers	1,710 citations	257450 24 h-index	315739 38 g-index
85 all docs	85 docs citations	85 times ranked	1877 citing authors

#	Article	IF	Citations
1	Change of InAs/GaAs quantum dot shape and composition during capping. Journal of Applied Physics, 2008, 104, .	2.5	99
2	Reversed truncated cone composition distribution of In0.8Ga0.2As quantum dots overgrown by an In0.1Ga0.9As layer in a GaAs matrix. Applied Physics Letters, 2002, 81, 5150-5152.	3.3	80
3	Electronic and Structural Differences between Wurtzite and Zinc Blende InAs Nanowire Surfaces: Experiment and Theory. ACS Nano, 2014, 8, 12346-12355.	14.6	78
4	Self-Organized Formation of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>GaSb</mml:mi><mml:mo>/</mml:mo><mml:mi>GaAs</mml:mi></mml:math>Quantum Rings. Physical Review Letters, 2008, 101, 256101.	7.8	67
5	Direct Imaging of Atomic Scale Structure and Electronic Properties of GaAs Wurtzite and Zinc Blende Nanowire Surfaces. Nano Letters, 2013, 13, 4492-4498.	9.1	63
6	Reduction of native oxides on InAs by atomic layer deposited Al2O3 and HfO2. Applied Physics Letters, 2010, 97, .	3.3	61
7	Structure and intermixing of GaSbâˆ•GaAs quantum dots. Applied Physics Letters, 2004, 85, 5890-5892.	3.3	54
8	Strong Schottky barrier reduction at Au-catalyst/GaAs-nanowire interfaces by electric dipole formation and Fermi-level unpinning. Nature Communications, 2014, 5, 3221.	12.8	54
9	Tuning oxygen vacancies and resistive switching properties in ultra-thin HfO2 RRAM via TiN bottom electrode and interface engineering. Applied Surface Science, 2021, 551, 149386.	6.1	49
10	Quantum ring formation and antimony segregation in GaSbâˆ•GaAs nanostructures. Journal of Vacuum Science & Technology B, 2008, 26, 1492-1503.	1.3	48
11	Self-cleaning and surface chemical reactions during hafnium dioxide atomic layer deposition on indium arsenide. Nature Communications, 2018, 9, 1412.	12.8	46
12	Nanovoids in InGaAsâˆ•GaAs quantum dots observed by cross-sectional scanning tunneling microscopy. Applied Physics Letters, 2004, 85, 3848-3850.	3.3	42
13	Al2O3/InAs metal-oxide-semiconductor capacitors on (100) and (111)B substrates. Applied Physics Letters, 2012, 100, 132905.	3.3	40
14	Surface Chemistry, Structure, and Electronic Properties from Microns to the Atomic Scale of Axially Doped Semiconductor Nanowires. ACS Nano, 2012, 6, 9679-9689.	14.6	37
15	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:mn> Physical Review B, 2010, 82, .	3.2	35
16	Electrical and Surface Properties of InAs/InSb Nanowires Cleaned by Atomic Hydrogen. Nano Letters, 2015, 15, 4865-4875.	9.1	35
17	InGaN Platelets: Synthesis and Applications toward Green and Red Light-Emitting Diodes. Nano Letters, 2019, 19, 2832-2839.	9.1	34
18	Effects of strain and confinement on the emission wavelength of InAs quantum dots due to aGaAs1âˆ’xNxcapping layer. Physical Review B, 2005, 71, .	3.2	33

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19	Structure of InAs/GaAs quantum dots grown with Sb surfactant. Physica E: Low-Dimensional Systems and Nanostructures, 2006, 32, 25-28.	2.7	33
20	Local Density of States and Interface Effects in Semimetallic ErAs Nanoparticles Embedded in GaAs. Physical Review Letters, 2011, 107, 036806.	7.8	32
21	In Vivo Detection and Absolute Quantification of a Secreted Bacterial Factor from Skin Using Molecularly Imprinted Polymers in a Surface Plasmon Resonance Biosensor for Improved Diagnostic Abilities. ACS Sensors, 2019, 4, 717-725.	7.8	32
22	Low Trap Density in InAs/High-k Nanowire Gate Stacks with Optimized Growth and Doping Conditions. Nano Letters, 2016, 16, 2418-2425.	9.1	31
23	Confined States of Individual Type-II GaSb/GaAs Quantum Rings Studied by Cross-Sectional Scanning Tunneling Spectroscopy. Nano Letters, 2010, 10, 3972-3977.	9.1	28
24	Interface composition of InAs nanowires with Al₂O₃ and HfO₂ thin films. Applied Physics Letters, 2011, 99, 222907.	3.3	24
25	Realization of Ultrahigh Quality InGaN Platelets to be Used as Relaxed Templates for Red Micro-LEDs. ACS Applied Materials & Interfaces, 2020, 12, 17845-17851.	8.0	24
26	Effects of TiN Top Electrode Texturing on Ferroelectricity in Hf_{1â€“x}Zr_xO₂. ACS Applied Materials & Interfaces, 2021, 13, 11089-11095.	8.0	24
27	Atomic Scale Surface Structure and Morphology of InAs Nanowire Crystal Superlattices: The Effect of Epitaxial Overgrowth. ACS Applied Materials & Interfaces, 2015, 7, 5748-5755.	8.0	23
28	Atomic Layer Deposition of Hafnium Oxide on InAs: Insight from Time-Resolved in Situ Studies. ACS Applied Electronic Materials, 2020, 2, 3915-3922.	4.3	23
29	High-density logic-in-memory devices using vertical indium arsenide nanowires on silicon. Nature Electronics, 2021, 4, 914-920.	26.0	22
30	Atomic structure of InAs and InGaAs quantum dots determined by cross-sectional scanning tunneling microscopy. Journal of Crystal Growth, 2003, 248, 322-327.	1.5	20
31	Nanobeam X-ray Fluorescence Dopant Mapping Reveals Dynamics of in Situ Zn-Doping in Nanowires. Nano Letters, 2018, 18, 6461-6468.	9.1	19
32	A simple electron counting model for half-Heusler surfaces. Science Advances, 2018, 4, eaar5832.	10.3	18
33	Interface composition of atomic layer deposited HfO2 and Al2O3 thin films on InAs studied by X-ray photoemission spectroscopy. Microelectronic Engineering, 2011, 88, 1091-1094.	2.4	16
34	Doping profile of InP nanowires directly imaged by photoemission electron microscopy. Applied Physics Letters, 2011, 99, 233113.	3.3	16
35	Currentâ€“Voltage Characterization of Individual As-Grown Nanowires Using a Scanning Tunneling Microscope. Nano Letters, 2013, 13, 5182-5189.	9.1	16
36	Scanning Tunneling Spectroscopy on InAsâ€“GaSb Esaki Diode Nanowire Devices during Operation. Nano Letters, 2015, 15, 3684-3691.	9.1	16

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37	Formation and atomic structure of GaSb nanostructures in GaAs studied by cross-sectional scanning tunneling microscopy. Physica E: Low-Dimensional Systems and Nanostructures, 2005, 26, 231-235.	2.7	15
38	Nitrogen-induced intermixing of InAsN quantum dots with the GaAs matrix. Applied Physics Letters, 2008, 92, .	3.3	15
39	Formation of InAs/InGaAsP quantum-dashes on InP(001). Applied Physics Letters, 2009, 95, .	3.3	15
40	High resolution scanning gate microscopy measurements on InAs/GaSb nanowire Esaki diode devices. Nano Research, 2014, 7, 877-887.	10.4	15
41	Electronic Structure Changes Due to Crystal Phase Switching at the Atomic Scale Limit. ACS Nano, 2017, 11, 10519-10528.	14.6	15
42	Contrast mechanisms in cross-sectional scanning tunneling microscopy of GaSb/GaAs type-II nanostructures. Journal of Applied Physics, 2009, 105, .	2.5	14
43	Crystal Structure Induced Preferential Surface Alloying of Sb on Wurtzite/Zinc Blende GaAs Nanowires. Nano Letters, 2017, 17, 3634-3640.	9.1	14
44	Self-assembled InN quantum dots on side facets of GaN nanowires. Journal of Applied Physics, 2018, 123, .	2.5	14
45	InAs-oxide interface composition and stability upon thermal oxidation and high-k atomic layer deposition. AIP Advances, 2018, 8, .	1.3	14
46	Epitaxial growth and surface studies of the Half Heusler compound NiTiSn (001). Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, .	1.2	13
47	Manipulating the Dynamics of Self-Propelled Gallium Droplets by Gold Nanoparticles and Nanoscale Surface Morphology. ACS Nano, 2015, 9, 5422-5431.	14.6	13
48	Operando Surface Characterization of InP Nanowire pâ€“n Junctions. Nano Letters, 2020, 20, 887-895.	9.1	13
49	Characterisation of nitride thin films by electron backscattered diffraction. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2001, 82, 19-21.	3.5	12
50	Surface morphology of Au-free grown nanowires after native oxide removal. Nanoscale, 2015, 7, 9998-10004.	5.6	12
51	Dislocationâ€Free and Atomically Flat GaN Hexagonal Microprisms for Device Applications. Small, 2020, 16, 1907364.	10.0	10
52	Onset of GaSb/GaAs quantum dot formation. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 3971-3974.	0.8	9
53	Surface smoothing and native oxide suppression on Zn doped aerotaxy GaAs nanowires. Journal of Applied Physics, 2019, 125, 025303.	2.5	9
54	New Flexible Toolbox for Nanomechanical Measurements with Extreme Precision and at Very High Frequencies. Nano Letters, 2010, 10, 3893-3898.	9.1	8

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55	Cross-sectional scanning tunneling microscopy and spectroscopy of semimetallic ErAs nanostructures embedded in GaAs. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2011, 29, .	1.2	8
56	GaN nanowires as probes for high resolution atomic force and scanning tunneling microscopy. Review of Scientific Instruments, 2019, 90, 103703.	1.3	8
57	Structure of InAs quantum dots-in-a-well nanostructures. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1988-1990.	2.7	7
58	Limits of In(Ga)As/GaAs quantum dot growth. Physica Status Solidi (B): Basic Research, 2009, 246, 717-720.	1.5	7
59	Band bending at the heterointerface of GaAs/InAs core/shell nanowires monitored by synchrotron X-ray photoelectron spectroscopy. Journal of Applied Physics, 2016, 120, 145703.	2.5	7
60	Strain mapping inside an individual processed vertical nanowire transistor using scanning X-ray nanodiffraction. Nanoscale, 2020, 12, 14487-14493.	5.6	7
61	Inducing ferroelastic domains in single-crystal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>CsPbBr</mml:mi><mml:mn>3</mml:mn></mml:msub> perovskite nanowires using atomic force microscopy. Physical Review Materials, 2021, 5, .	2.4	7
62	Surface and dislocation investigation of planar GaN formed by crystal reformation of nanowire arrays. Physical Review Materials, 2019, 3, .	2.4	7
63	Oxygen relocation during HfO₂ ALD on InAs. Faraday Discussions, 2022, 236, 71-85.	3.2	6
64	Imaging Atomic Scale Dynamics on IIIâ€“V Nanowire Surfaces During Electrical Operation. Scientific Reports, 2017, 7, 12790.	3.3	5
65	Improved Electrostatics through Digital Etch Schemes in Vertical GaSb Nanowire p-MOSFETs on Si. ACS Applied Electronic Materials, 2022, 4, 531-538.	4.3	5
66	Role of Temperature, Pressure, and Surface Oxygen Migration in the Initial Atomic Layer Deposition of HfO₂on Anatase TiO₂(101). Journal of Physical Chemistry C, 2022, 126, 12210-12221.	3.1	5
67	InAs nanostructures on InGaAsP/InP(001): Interaction of InAs quantum-dash formation with InGaAsP decomposition. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2010, 28, C5E1-C5E7.	1.2	4
68	A Method for Investigation of Size-Dependent Protein Binding to Nanoholes Using Intrinsic Fluorescence of Proteins. ACS Omega, 2017, 2, 4772-4778.	3.5	3
69	Unravelling uniaxial strain effects on electronic correlations, hybridization and bonding in transition metal oxides. Acta Materialia, 2019, 164, 618-626.	7.9	3
70	Simulations of light collection in long tapered CsI(Tl) scintillators using real crystal surface data and comparisons to measurement. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2021, 1003, 165302.	1.6	3
71	Self-selective formation of ordered 1D and 2D GaBi structures on wurtzite GaAs nanowire surfaces. Nature Communications, 2021, 12, 5990.	12.8	3
72	Segregation effects during GaAs overgrowth of InAs and InGaAs quantum dots studied by cross-sectional scanning tunneling microscopy. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 1129-1132.	0.8	2

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73	Structural investigation of hierarchically self-assembled GaAs/AlGaAs quantum dots. Physica Status Solidi (B): Basic Research, 2006, 243, 3976-3980.	1.5	2
74	Low temperature scanning tunneling microscopy and spectroscopy on laterally grown InxGa1â^'xAs nanowire devices. Applied Physics Letters, 2020, 117, 163101.	3.3	2
75	Coherently strained and dislocationâ€free architectured AlGaN/GaN submicronâ€sized structures. Nano Select, 0, , .	3.7	2
76	Hydrogen plasma enhanced oxide removal on GaSb planar and nanowire surfaces. Applied Surface Science, 2022, 593, 153336.	6.1	2
77	Effect of nitrogen on the InAs/GaAs quantum dot formation. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 355-358.	0.8	1
78	Impact of Electrical Current on Single GaAs Nanowire Structure. Physica Status Solidi (B): Basic Research, 2021, 258, 2100056.	1.5	1
79	Surface Functionalization of IIIâ€“V Nanowires. , 2021, , 111-141.		1
80	Formation Of InAsâ•InGaAsP Quantum Dashes. AIP Conference Proceedings, 2011, , .	0.4	0
81	Interface characterization of metal-HfO2-InAs gate stacks using hard x-ray photoemission spectroscopy. AIP Advances, 2013, 3, 072131.	1.3	0
82	Local defect-enhanced anodic oxidation of reformed GaN nanowires. Physical Review Materials, 2020, 4, .	2.4	0
83	A cross-sectional scanning tunneling microscopy study of GaSb/GaAs nanostructures. , 2005, , 479-482.		0