Rainer Timm

List of Publications by Year
in descending order

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	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
2	Oxygen relocation during HfO₂ ALD on InAs. Faraday Discussions, 2022, 236, 71-85.	3.2	6
3	Hydrogen plasma enhanced oxide removal on GaSb planar and nanowire surfaces. Applied Surface Science, 2022, 593, 153336.	6.1	2
4	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
5	Effects of TiN Top Electrode Texturing on Ferroelectricity in Hf_{1â€"<i>x</i>}Zr_{<i>x</i>}O₂. ACS Applied Materials & Interfaces, 2021, 13, 11089-11095.	8.0	24
6	Impact of Electrical Current on Single GaAs Nanowire Structure. Physica Status Solidi (B): Basic Research, 2021, 258, 2100056.	1.5	1
7	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
8	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
9	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
10	Self-selective formation of ordered 1D and 2D GaBi structures on wurtzite GaAs nanowire surfaces. Nature Communications, 2021, 12, 5990.	12.8	3
11	Surface Functionalization of IIIâ€"V Nanowires. , 2021, , 111-141.		1
12	High-density logic-in-memory devices using vertical indium arsenide nanowires on silicon. Nature Electronics, 2021, 4, 914-920.	26.0	22
13	Operando Surface Characterization of InP Nanowire pâ€"n Junctions. Nano Letters, 2020, 20, 887-895.	9.1	13
14	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
15	Low temperature scanning tunneling microscopy and spectroscopy on laterally grown InxGa1â^'xAs nanowire devices. Applied Physics Letters, 2020, 117, 163101.	3.3	2
16	Strain mapping inside an individual processed vertical nanowire transistor using scanning X-ray nanodiffraction. Nanoscale, 2020, 12, 14487-14493.	5.6	7
17	Dislocationâ€Free and Atomically Flat GaN Hexagonal Microprisms for Device Applications. Small, 2020, 16, 1907364.	10.0	10
18	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

#	Article	IF	Citations
19	Local defect-enhanced anodic oxidation of reformed GaN nanowires. Physical Review Materials, 2020, 4, .	2.4	0
20	GaN nanowires as probes for high resolution atomic force and scanning tunneling microscopy. Review of Scientific Instruments, 2019, 90, 103703.	1.3	8
21	InGaN Platelets: Synthesis and Applications toward Green and Red Light-Emitting Diodes. Nano Letters, 2019, 19, 2832-2839.	9.1	34
22	<i>In Vivo</i> 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
23	Unravelling uniaxial strain effects on electronic correlations, hybridization and bonding in transition metal oxides. Acta Materialia, 2019, 164, 618-626.	7.9	3
24	Surface smoothing and native oxide suppression on Zn doped aerotaxy GaAs nanowires. Journal of Applied Physics, 2019, 125, 025303.	2.5	9
25	Surface and dislocation investigation of planar GaN formed by crystal reformation of nanowire arrays. Physical Review Materials, 2019, 3, .	2.4	7
26	Self-cleaning and surface chemical reactions during hafnium dioxide atomic layer deposition on indium arsenide. Nature Communications, 2018, 9, 1412.	12.8	46
27	Self-assembled InN quantum dots on side facets of GaN nanowires. Journal of Applied Physics, 2018, 123, .	2.5	14
28	InAs-oxide interface composition and stability upon thermal oxidation and high-k atomic layer deposition. AIP Advances, 2018, 8, .	1.3	14
29	Nanobeam X-ray Fluorescence Dopant Mapping Reveals Dynamics of in Situ Zn-Doping in Nanowires. Nano Letters, 2018, 18, 6461-6468.	9.1	19
30	A simple electron counting model for half-Heusler surfaces. Science Advances, 2018, 4, eaar5832.	10.3	18
31	Crystal Structure Induced Preferential Surface Alloying of Sb on Wurtzite/Zinc Blende GaAs Nanowires. Nano Letters, 2017, 17, 3634-3640.	9.1	14
32	Electronic Structure Changes Due to Crystal Phase Switching at the Atomic Scale Limit. ACS Nano, 2017, 11, 10519-10528.	14.6	15
33	Imaging Atomic Scale Dynamics on IIIâ€“V Nanowire Surfaces During Electrical Operation. Scientific Reports, 2017, 7, 12790.	3.3	5
34	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
35	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
36	Low Trap Density in InAs/High-<i>k</i> Nanowire Gate Stacks with Optimized Growth and Doping Conditions. Nano Letters, 2016, 16, 2418-2425.	9.1	31

#	Article	IF	Citations
37	Electrical and Surface Properties of InAs/InSb Nanowires Cleaned by Atomic Hydrogen. Nano Letters, 2015, 15, 4865-4875.	9.1	35
38	Manipulating the Dynamics of Self-Propelled Gallium Droplets by Gold Nanoparticles and Nanoscale Surface Morphology. ACS Nano, 2015, 9, 5422-5431.	14.6	13
39	Scanning Tunneling Spectroscopy on InAsâ€“GaSb Esaki Diode Nanowire Devices during Operation. Nano Letters, 2015, 15, 3684-3691.	9.1	16
40	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
41	Surface morphology of Au-free grown nanowires after native oxide removal. Nanoscale, 2015, 7, 9998-10004.	5.6	12
42	Electronic and Structural Differences between Wurtzite and Zinc Blende InAs Nanowire Surfaces: Experiment and Theory. ACS Nano, 2014, 8, 12346-12355.	14.6	78
43	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
44	High resolution scanning gate microscopy measurements on InAs/GaSb nanowire Esaki diode devices. Nano Research, 2014, 7, 877-887.	10.4	15
45	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
46	Currentâ€“Voltage Characterization of Individual As-Grown Nanowires Using a Scanning Tunneling Microscope. Nano Letters, 2013, 13, 5182-5189.	9.1	16
47	Interface characterization of metal-HfO2-InAs gate stacks using hard x-ray photoemission spectroscopy. AIP Advances, 2013, 3, 072131.	1.3	0
48	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
49	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
50	Al2O3/InAs metal-oxide-semiconductor capacitors on (100) and (111)B substrates. Applied Physics Letters, 2012, 100, 132905.	3.3	40
51	Formation Of InAsâˆ•InGaAsP Quantum Dashes. AIP Conference Proceedings, 2011, , .	0.4	0
52	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
53	Doping profile of InP nanowires directly imaged by photoemission electron microscopy. Applied Physics Letters, 2011, 99, 233113.	3.3	16
54	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

#	Article	IF	Citations
55	Local Density of States and Interface Effects in Semimetallic ErAs Nanoparticles Embedded in GaAs. Physical Review Letters, 2011, 107, 036806.	7.8	32
56	Interface composition of InAs nanowires with Al₂O₃ and HfO₂ thin films. Applied Physics Letters, 2011, 99, 222907.	3.3	24
57	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
58	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
59	New Flexible Toolbox for Nanomechanical Measurements with Extreme Precision and at Very High Frequencies. Nano Letters, 2010, 10, 3893-3898.	9.1	8
60	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
61	Reduction of native oxides on InAs by atomic layer deposited Al2O3 and HfO2. Applied Physics Letters, 2010, 97, .	3.3	61
62	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: Physical Review B, 2010, 82, .	3.2	35
63	Contrast mechanisms in cross-sectional scanning tunneling microscopy of GaSb/GaAs type-II nanostructures. Journal of Applied Physics, 2009, 105, .	2.5	14
64	Limits of In(Ga)As/GaAs quantum dot growth. Physica Status Solidi (B): Basic Research, 2009, 246, 717-720.	1.5	7
65	Formation of InAs/InGaAsP quantum-dashes on InP(001). Applied Physics Letters, 2009, 95, .	3.3	15
66	Structure of InAs quantum dots-in-a-well nanostructures. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1988-1990.	2.7	7
67	Change of InAs/GaAs quantum dot shape and composition during capping. Journal of Applied Physics, 2008, 104, .	2.5	99
68	Quantum ring formation and antimony segregation in GaSbâˆ•GaAs nanostructures. Journal of Vacuum Science & Technology B, 2008, 26, 1492-1503.	1.3	48
69	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
70	Nitrogen-induced intermixing of InAsN quantum dots with the GaAs matrix. Applied Physics Letters, 2008, 92, .	3.3	15
71	Onset of GaSb/GaAs quantum dot formation. Physica Status Solidi C: Current Topics in Solid State Physics, 2006, 3, 3971-3974.	0.8	9
72	Structural investigation of hierarchically self-assembled GaAs/AlGaAs quantum dots. Physica Status Solidi (B): Basic Research, 2006, 243, 3976-3980.	1.5	2

#	Article	IF	Citations
73	Structure of InAs/GaAs quantum dots grown with Sb surfactant. Physica E: Low-Dimensional Systems and Nanostructures, 2006, 32, 25-28.	2.7	33
74	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
75	Effects of strain and confinement on the emission wavelength of InAs quantum dots due to aGaAs1â^'xNxcapping layer. Physical Review B, 2005, 71, .	3.2	33
76	A cross-sectional scanning tunneling microscopy study of GaSb/GaAs nanostructures. , 2005, , 479-482.		0
77	Nanovoids in InGaAsâˆ•GaAs quantum dots observed by cross-sectional scanning tunneling microscopy. Applied Physics Letters, 2004, 85, 3848-3850.	3.3	42
78	Structure and intermixing of GaSbâˆ•GaAs quantum dots. Applied Physics Letters, 2004, 85, 5890-5892.	3.3	54
79	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
80	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
81	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
82	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
83	Coherently strained and dislocationâ€free architectured AlGaN/GaN submicronâ€sized structures. Nano Select, 0, , .	3.7	2