Philippe Caroff

List of Publications by Citations

121 papers	7,229 citations	43 h-index	84 g-index
124 ext. papers	7,925 ext. citations	7.4 avg, IF	5.84 L-index

#	Paper	IF	Citations
121	Anomalous zero-bias conductance peak in a Nb-InSb nanowire-Nb hybrid device. *Nano Letters*, **2012**, 12, 6414-9	11.5	1210
120	Controlled polytypic and twin-plane superlattices in iii-v nanowires. *Nature Nanotechnology*, **2009**, 4, 50-5	28.7	577
119	Superconductor-nanowire devices from tunneling to the multichannel regime: Zero-bias oscillations and magnetoconductance crossover. *Physical Review B*, **2013**, 87,	3.3	576
118	Crystal phase engineering in single InAs nanowires. *Nano Letters*, **2010**, 10, 3494-9	11.5	205
117	Giant, level-dependent g factors in InSb nanowire quantum dots. *Nano Letters*, **2009**, 9, 3151-6	11.5	201
116	Effects of crystal phase mixing on the electrical properties of InAs nanowires. *Nano Letters*, **2011**, 11, 2424-9	11.5	200
115	Control of III–V nanowire crystal structure by growth parameter tuning. *Semiconductor Science and Technology*, **2010**, 25, 024009	1.8	200
114	Selective-area epitaxy of pure wurtzite InP nanowires: high quantum efficiency and room-temperature lasing. *Nano Letters*, **2014**, 14, 5206-11	11.5	160
113	High-quality InAs/InSb nanowire heterostructures grown by metal-organic vapor-phase epitaxy. *Small*, **2008**, 4, 878-82	11	153
112	Crystal Phases in III--V Nanowires: From Random Toward Engineered Polytypism. *IEEE Journal of Selected Topics in Quantum Electronics*, **2011**, 17, 829-846	3.8	141
111	Gold-free growth of GaAs nanowires on silicon: arrays and polytypism. *Nanotechnology*, **2010**, 21, 385602	3.4	136
110	High yield of self-catalyzed GaAs nanowire arrays grown on silicon via gallium droplet positioning. *Nanotechnology*, **2011**, 22, 275602	3.4	129
109	Diameter Dependence of the Wurtzite–Zinc Blende Transition in InAs Nanowires. *Journal of Physical Chemistry C*, **2010**, 114, 3837-3842	3.8	121
108	Unit cell structure of crystal polytypes in InAs and InSb nanowires. *Nano Letters*, **2011**, 11, 1483-9	11.5	110
107	InSb heterostructure nanowires: MOVPE growth under extreme lattice mismatch. *Nanotechnology*, **2009**, 20, 495606	3.4	108
106	Vapor Phase Growth of Semiconductor Nanowires: Key Developments and Open Questions. *Chemical Reviews*, **2019**, 119, 8958-8971	68.1	103
105	High-gain and low-threshold InAs quantum-dot lasers on InP. *Applied Physics Letters*, **2005**, 87, 243107	3.4	102

104	Self-Equilibration of the Diameter of Ga-Catalyzed GaAs Nanowires. *Nano Letters*, **2015**, 15, 5580-4	11.5	90
103	Thermal conductivity of indium arsenide nanowires with wurtzite and zinc blende phases. *Physical Review B*, **2011**, 83,	3.3	89
102	Faceting, composition and crystal phase evolution in III-V antimonide nanowire heterostructures revealed by combining microscopy techniques. *Nanotechnology*, **2012**, 23, 095702	3.4	86
101	Atomic scale strain relaxation in axial semiconductor III-V nanowire heterostructures. *Nano Letters*, **2014**, 14, 6614-20	11.5	85
100	The electrical and structural properties of n-type InAs nanowires grown from metal-organic precursors. *Nanotechnology*, **2010**, 21, 205703	3.4	83
99	Development of a Vertical Wrap-Gated InAs FET. *IEEE Transactions on Electron Devices*, **2008**, 55, 3030-3036	2.9	83
98	GaAs/GaSb nanowire heterostructures grown by MOVPE. *Journal of Crystal Growth*, **2008**, 310, 4115-4121	1.6	81
97	Gold-free ternary III-V antimonide nanowire arrays on silicon: twin-free down to the first bilayer. *Nano Letters*, **2014**, 14, 326-32	11.5	80
96	Gold-free GaAs/GaAsSb heterostructure nanowires grown on silicon. *Applied Physics Letters*, **2010**, 96, 121901	3.4	78
95	Supercurrent and multiple Andreev reflections in an InSb nanowire Josephson junction. *Nano Letters*, **2012**, 12, 228-33	11.5	73
94	Metal-seeded growth of III-V semiconductor nanowires: towards gold-free synthesis. *Nanoscale*, **2014**, 6, 3006-21	7.7	69
93	Temperature dependent properties of InSb and InAs nanowire field-effect transistors. *Applied Physics Letters*, **2010**, 96, 153505	3.4	67
92	Twinning superlattice formation in GaAs nanowires. *ACS Nano*, **2013**, 7, 8105-14	16.7	66
91	Parity independence of the zero-bias conductance peak in a nanowire based topological superconductor-quantum dot hybrid device. *Scientific Reports*, **2014**, 4, 7261	4.9	62
90	Twin-Induced InSb Nanosails: A Convenient High Mobility Quantum System. *Nano Letters*, **2016**, 16, 825-33	11.5	61
89	Tunable Polarity in a III-V Nanowire by Droplet Wetting and Surface Energy Engineering. *Advanced Materials*, **2015**, 27, 6096-103	24	60
88	Doping-enhanced radiative efficiency enables lasing in unpassivated GaAs nanowires. *Nature Communications*, **2016**, 7, 11927	17.4	57
87	Combinatorial approaches to understanding polytypism in III-V nanowires. *ACS Nano*, **2012**, 6, 6142-9	16.7	51

86	Selectivity Map for Molecular Beam Epitaxy of Advanced III-V Quantum Nanowire Networks. *Nano Letters*, **2019**, 19, 218-227	11.5	51
85	Room temperature GaAsSb single nanowire infrared photodetectors. *Nanotechnology*, **2015**, 26, 445202	3.4	50
84	Electrical properties of InAs1−xSbx and InSb nanowires grown by molecular beam epitaxy. *Applied Physics Letters*, **2012**, 100, 232105	3.4	50
83	Correlation-induced conductance suppression at level degeneracy in a quantum dot. *Physical Review Letters*, **2010**, 104, 186804	7.4	47
82	Simultaneous Selective-Area and Vapor-Liquid-Solid Growth of InP Nanowire Arrays. *Nano Letters*, **2016**, 16, 4361-7	11.5	46
81	Controlling the morphology, composition and crystal structure in gold-seeded GaAs(1-x)Sb(x) nanowires. *Nanoscale*, **2015**, 7, 4995-5003	7.7	46
80	Nanowires grown on InP (100): growth directions, facets, crystal structures, and relative yield control. *ACS Nano*, **2014**, 8, 6945-54	16.7	45
79	Wurtzite-zincblende superlattices in InAs nanowires using a supply interruption method. *Nanotechnology*, **2011**, 22, 265606	3.4	43
78	Demonstration of defect-free and composition tunable GaxIn1−xSb nanowires. *Nano Letters*, **2012**, 12, 4914-9	11.5	41
77	Nanowire biocompatibility in the brain--looking for a needle in a 3D stack. *Nano Letters*, **2009**, 9, 4184-90	11.5	40
76	Characterization of GaSb nanowires grown by MOVPE. *Journal of Crystal Growth*, **2008**, 310, 5119-5122	1.6	40
75	Vertical "III-V" V-shaped nanomembranes epitaxially grown on a patterned Si[001] substrate and their enhanced light scattering. *ACS Nano*, **2012**, 6, 10982-91	16.7	39
74	Doping Incorporation in InAs nanowires characterized by capacitance measurements. *Journal of Applied Physics*, **2010**, 108, 054306	2.5	39
73	Parameter space mapping of InAs nanowire crystal structure. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2011**, 29, 04D103	1.3	37
72	Antimony Induced {112}A Faceted Triangular GaAs1−xSbx/InP Core/Shell Nanowires and Their Enhanced Optical Quality. *Advanced Functional Materials*, **2015**, 25, 5300-5308	15.6	34
71	Raman spectroscopy of self-catalyzed GaAs(1-x)Sb(x) nanowires grown on silicon. *Nanotechnology*, **2013**, 24, 405707	3.4	34
70	Achievement of High Density InAs Quantum Dots on InP (311)B Substrate Emitting at 1.55 μm. *Japanese Journal of Applied Physics*, **2005**, 44, L1069-L1071	1.4	31
69	Understanding the growth and composition evolution of gold-seeded ternary InGaAs nanowires. *Nanoscale*, **2015**, 7, 16266-72	7.7	30

68	InSb Nanowire Field-Effect Transistors and Quantum-Dot Devices. *IEEE Journal of Selected Topics in Quantum Electronics*, **2011**, 17, 907-914	3.8	30
67	Comparison of InAs quantum dot lasers emitting at 1.55 μm under optical and electrical injection. *Semiconductor Science and Technology*, **2005**, 20, 459-463	1.8	30
66	In(x)Ga(1-x)As nanowires with uniform composition, pure wurtzite crystal phase and taper-free morphology. *Nanotechnology*, **2015**, 26, 205604	3.4	29
65	Shape Engineering of InP Nanostructures by Selective Area Epitaxy. *ACS Nano*, **2019**, 13, 7261-7269	16.7	27
64	Band offsets at zincblende-wurtzite GaAs nanowire sidewall surfaces. *Applied Physics Letters*, **2013**, 103, 122104	3.4	27
63	Approach to wetting-layer-assisted lateral coupling of InAs□InP quantum dots. *Physical Review B*, **2005**, 72,	3.3	26
62	Growth and optical properties of In x Ga1□ P nanowires synthesized by selective-area epitaxy. *Nano Research*, **2017**, 10, 672-682	10	24
61	0□phase transition in hybrid superconductor□InSb nanowire quantum dot devices. *Physical Review B*, **2017**, 95,	3.3	24
60	Coherent Charge Transport in Ballistic InSb Nanowire Josephson Junctions. *Scientific Reports*, **2016**, 6, 24822	4.9	21
59	Persistent enhancement of the carrier density in electron irradiated InAs nanowires. *Nanotechnology*, **2013**, 24, 275706	3.4	21
58	Impact of the capping layers on lateral confinement in InAs□InP quantum dots for 1.55□h laser applications studied by magnetophotoluminescence. *Applied Physics Letters*, **2005**, 87, 233111	3.4	21
57	The Role of Polarity in Nonplanar Semiconductor Nanostructures. *Nano Letters*, **2019**, 19, 3396-3408	11.5	20
56	Time-resolved pump probe of 1.55□h InAs□InP quantum dots under high resonant excitation. *Applied Physics Letters*, **2006**, 88, 171502	3.4	19
55	Morphology and composition controlled Ga(x)In(1-x)Sb nanowires: understanding ternary antimonide growth. *Nanoscale*, **2014**, 6, 1086-92	7.7	18
54	Radial Growth Evolution of InGaAs/InP Multi-Quantum-Well Nanowires Grown by Selective-Area Metal Organic Vapor-Phase Epitaxy. *ACS Nano*, **2018**, 12, 10374-10382	16.7	18
53	Formation of long single quantum dots in high quality InSb nanowires grown by molecular beam epitaxy. *Nanoscale*, **2015**, 7, 14822-8	7.7	17
52	Increase of charge-carrier redistribution efficiency in a laterally organized superlattice of coupled quantum dots. *Physical Review B*, **2006**, 74,	3.3	17
51	Regaining a Spatial Dimension: Mechanically Transferrable Two-Dimensional InAs Nanofins Grown by Selective Area Epitaxy. *Nano Letters*, **2019**, 19, 4666-4677	11.5	16

50	Growth of vertical InAs nanowires on heterostructured substrates. *Nanotechnology*, **2009**, 20, 285303	3.4	16
49	InAs(Sb)/InP(100) quantum dots for mid-infrared emitters: observation of 2.35 μm photoluminescence. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 3920-3923		16
48	Emission wavelength control of InAs quantum dots in a GaInAsP matrix grown on InP(311)B substrates. *Journal of Crystal Growth*, **2005**, 273, 357-362	1.6	16
47	Strong Amplified Spontaneous Emission from High Quality GaAs1−xSbx Single Quantum Well Nanowires. *Journal of Physical Chemistry C*, **2017**, 121, 8636-8644	3.8	14
46	Zn3As2 nanowires and nanoplatelets: highly efficient infrared emission and photodetection by an earth abundant material. *Nano Letters*, **2015**, 15, 378-85	11.5	14
45	Time-resolved X-ray diffraction investigation of the modified phonon dispersion in InSb nanowires. *Nano Letters*, **2014**, 14, 541-6	11.5	14
44	Magnetotransport subband spectroscopy in InAs nanowires. *Physical Review Letters*, **2014**, 112, 076801	7.4	14
43	Ballistic InSb Nanowires and Networks via Metal-Sown Selective Area Growth. *Nano Letters*, **2019**, 19, 9102-9111	11.5	13
42	Type I band alignment in GaAs81Sb19/GaAs core-shell nanowires. *Applied Physics Letters*, **2015**, 107, 112102	3.4	13
41	Inhomogeneous Si-doping of gold-seeded InAs nanowires grown by molecular beam epitaxy. *Applied Physics Letters*, **2013**, 102, 223105	3.4	13
40	Carrier Dynamics and Saturation Effect in (113)B InAs/InP Quantum Dot Lasers. *Optical and Quantum Electronics*, **2006**, 38, 369-379	2.4	13
39	Dopant-Free Twinning Superlattice Formation in InSb and InP Nanowires. *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1700310	2.5	12
38	Tunnel junctions in a III-V nanowire by surface engineering. *Nano Research*, **2015**, 8, 980-989	10	12
37	In situ passivation of GaAsSb nanowires for enhanced infrared photoresponse. *Nanotechnology*, **2020**, 31, 244002	3.4	8
36	Strong Hot Carrier Effects in Single Nanowire Heterostructures. *Nano Letters*, **2019**, 19, 5062-5069	11.5	8
35	InP-InGaAs core-multi-shell nanowire quantum wells with tunable emission in the 1.3-1.55 μm wavelength range. *Nanoscale*, **2017**, 9, 13554-13562	7.7	8
34	Unipolar and bipolar operation of InAs/InSb nanowire heterostructure field-effect transistors. *Journal of Applied Physics*, **2011**, 110, 064510	2.5	8
33	InAs film grown on Si(111) by metal organic vapor phase epitaxy. *Journal of Physics: Conference Series*, **2008**, 100, 042017	0.3	8

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31	Growth mechanisms and process window for InAs V-shaped nanoscale membranes on Si[001]. *Nanotechnology*, **2013**, 24, 435603	3.4	7
30	Temperature studies on a single InAs/InP QD layer laser emitting at 1.55 μm. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2006**, 3, 407-410		7
29	The effect of nitridation on the polarity and optical properties of GaN self-assembled nanorods. *Nanoscale*, **2018**, 10, 11205-11210	7.7	7
28	Lazarevicite-type short-range ordering in ternary III-V nanowires. *Physical Review B*, **2016**, 94,	3.3	6
27	Self-assembled InAs quantum dots grown on InP (3 1 1)B substrates: Role of buffer layer and amount of InAs deposited. *Journal of Crystal Growth*, **2006**, 293, 263-268	1.6	6
26	Anisotropic transport properties of quasiballistic InAs nanowires under high magnetic field. *Physical Review B*, **2018**, 97,	3.3	5
25	p-GaAs Nanowire Metal-Semiconductor Field-Effect Transistors with Near-Thermal Limit Gating. *Nano Letters*, **2018**, 18, 5673-5680	11.5	5
24	Phonon Transport and Thermoelectricity in Defect-Engineered InAs Nanowires. *Materials Research Society Symposia Proceedings*, **2012**, 1404, 36		5
23	Characterization of InAs quantum wires on (001)InP: toward the realization of VCSEL structures with a stabilized polarization. *Physica Status Solidi (A) Applications and Materials Science*, **2007**, 204, 1672-1676	1.6	5
22	Engineering the Side Facets of Vertical [100] Oriented InP Nanowires for Novel Radial Heterostructures. *Nanoscale Research Letters*, **2019**, 14, 399	5	5
21	Ballistic transport and quantum interference in InSb nanowire devices. *Chinese Physics B*, **2017**, 26, 027305	1.2	4
20	Optical properties and morphology of InAs/InP (113)B surface quantum dots. *Applied Physics Letters* , **2008**, 92, 231911	3.4	4
19	Impact of invasive metal probes on Hall measurements in semiconductor nanostructures. *Nanoscale* , **2020**, 12, 20317-20325	7.7	4
18	Highly regular rosette-shaped cathodoluminescence in GaN self-assembled nanodisks and nanorods. *Nano Research*, **2020**, 13, 2500-2505	10	3
17	Editorial-Focus on inorganic semiconductor nanowires for device applications. *Nanotechnology*, **2018**, 29, 030201	3.4	3
16	Indirect exchange coupling between two ferromagnetic electrodes through ZnS barrier in magnetic tunnel junctions. *Applied Physics Letters*, **2003**, 83, 2202-2204	3.4	3
15	Molecular beam epitaxy growth of quantum dot lasers emitting around 1.5 μm on InP(311)B substrates. *Journal of Crystal Growth*, **2005**, 278, 329-334	1.6	3

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13	Electrical characterization of semiconductor nanowires by scanning tunneling microscopy **2014**,		2
12	Critical thickness for InAs quantum dot formation on (311)B InP substrates. *Journal of Crystal Growth*, **2009**, 311, 2626-2629	1.6	2
11	Temperature and frequency characterization of InAs nanowire and HfO2 interface using capacitance□oltage method. *Microelectronic Engineering*, **2011**, 88, 444-447	2.5	2
10	MOVPE growth and structural charactrization of extremely lattice-mismatched InP-InSb nanowire heterostructures **2009**,		2
9	Formation of InAs islands on InP(311)B surface by molecular beam epitaxy. *Journal of Crystal Growth*, **2003**, 257, 104-109	1.6	2
8	Solution-Processed InAs Nanowire Transistors as Microwave Switches. *Advanced Electronic Materials*, **2019**, 5, 1800323	6.4	2
7	Exploring the band structure of Wurtzite InAs nanowires using photocurrent spectroscopy. *Nano Research*, **2020**, 13, 1586-1591	10	2
6	Comparing InSb, InAs, and InSb/InAs nanowire MOSFETs **2009**,		1
5	Combined STM and Four-Probe Resistivity Measurements on Single Semiconductor Nanowires. *Advances in Atom and Single Molecule Machines*, **2012**, 107-118	0	1
4	Room Temperature GaAsSb Array Photodetectors **2018**,		1
3	Postgrowth Shaping and Transport Anisotropy in Two-Dimensional InAs Nanofins. *ACS Nano*, **2021**, 15, 7226-7236	16.7	0
2	Exciton and biexciton lifetimes in InAs/InP quantum dots emitting at 1.55 □m wavelength under resonant excitation. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2007**, 4, 454-457		
1	InAs/InSb: From Nanowires to Nanomembranes **2016**, 596-597		