

Heiko B Weber

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

147
papers

7,738
citations

33
h-index

87
g-index

156
ext. papers

8,381
ext. citations

5.9
avg, IF

5.64
L-index

#	Paper	IF	Citations
147	Intrinsic color centers in 4H-silicon carbide formed by heavy ion implantation and annealing. <i>Journal Physics D: Applied Physics</i> , 2022 , 55, 105303	3	0
146	A point-like thermal light source as a probe for sensing light-matter interaction.. <i>Scientific Reports</i> , 2022 , 12, 4881	4.9	0
145	Light-field control of real and virtual charge carriers.. <i>Nature</i> , 2022 , 605, 251-255	50.4	2
144	Electronic Coherence and Coherent Dephasing in the Optical Control of Electrons in Graphene. <i>Nano Letters</i> , 2021 , 21, 9403-9409	11.5	5
143	Epitaxial Graphene on Silicon Carbide as a Tailorable Metal/Semiconductor Interface 2021 , 249-270		0
142	Narrow inhomogeneous distribution of spin-active emitters in silicon carbide. <i>Applied Physics Letters</i> , 2021 , 118, 144003	3.4	3
141	Removing the orientational degeneracy of the TS defect in 4HSiC by electric fields and strain. <i>New Journal of Physics</i> , 2021 , 23, 073002	2.9	
140	Covalent Patterning of 2D MoS. <i>Chemistry - A European Journal</i> , 2021 , 27, 13117-13122	4.8	2
139	Thermoelectricity of near-resonant tunnel junctions and their relation to Carnot efficiency. <i>Scientific Reports</i> , 2021 , 11, 2031	4.9	5
138	Molecular embroidering of graphene. <i>Nature Communications</i> , 2021 , 12, 552	17.4	9
137	Organic Field Effect Transistors: Noncovalent Functionalization and Passivation of Black Phosphorus with Optimized Perylene Diimides for Hybrid Field Effect Transistors (Adv. Mater. Interfaces 23/2020). <i>Advanced Materials Interfaces</i> , 2020 , 7, 2070131	4.6	
136	Length-dependence of light-induced currents in graphene. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2020 , 53, 154001	1.3	7
135	Attosecond-fast internal photoemission. <i>Nature Photonics</i> , 2020 , 14, 219-222	33.9	13
134	Thermal origin of light emission in nonresonant and resonant nanojunctions. <i>Physical Review Research</i> , 2020 , 2,	3.9	6
133	Stark Tuning of the Silicon Vacancy in Silicon Carbide. <i>Nano Letters</i> , 2020 , 20, 658-663	11.5	20
132	Highly Efficient and Reversible Covalent Patterning of Graphene: 2D-Management of Chemical Information. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 5602-5606	16.4	23
131	Noncovalent Functionalization and Passivation of Black Phosphorus with Optimized Perylene Diimides for Hybrid Field Effect Transistors. <i>Advanced Materials Interfaces</i> , 2020 , 7, 2001290	4.6	10

130	Covalently Doped Graphene Superlattices: Spatially Resolved Supratopic- and Janus-Binding. <i>Journal of the American Chemical Society</i> , 2020 , 142, 16016-16022	16.4	13
129	Lightwave-controlled electron dynamics in graphene. <i>EPJ Web of Conferences</i> , 2019 , 205, 05002	0.3	1
128	Interaction of carrier envelope phase-stable laser pulses with graphene: the transition from the weak-field to the strong-field regime. <i>New Journal of Physics</i> , 2019 , 21, 045003	2.9	24
127	An efficient Terahertz rectifier on the graphene/SiC materials platform. <i>Scientific Reports</i> , 2019 , 9, 11205	4.9	10
126	Fractional Quantum Conductance Plateaus in Mosaic-Like Conductors and Their Similarities to the Fractional Quantum Hall Effect. <i>Annalen Der Physik</i> , 2019 , 531, 1800188	2.6	0
125	An ultra-stable setup for measuring electrical and thermoelectrical properties of nanojunctions. <i>Applied Physics Letters</i> , 2019 , 115, 083108	3.4	4
124	On the origin of drain current transients and subthreshold sweep hysteresis in 4H-SiC MOSFETs. <i>Applied Physics Letters</i> , 2019 , 115, 152102	3.4	2
123	Basal Plane Dislocation Conversion Enhancement in 4H-SiC Homo-Epitaxial Layers by Ion Implantation into the Wafer. <i>Materials Science Forum</i> , 2019 , 963, 114-118	0.4	
122	An adapted method for analyzing 4H silicon carbide metal-oxide-semiconductor field-effect transistors. <i>Communications Physics</i> , 2019 , 2,	5.4	12
121	Determination of Performance-Relevant Trapped Charge in 4H Silicon Carbide MOSFETs. <i>Materials Science Forum</i> , 2018 , 924, 277-280	0.4	1
120	Landau-Zener-Stückelberg interferometer on attosecond timescales in graphene 2018 ,		1
119	Coherent Electron Trajectory Control in Graphene. <i>Physical Review Letters</i> , 2018 , 121, 207401	7.4	56
118	Terahertz generation with ballistic photodiodes under pulsed operation. <i>Semiconductor Science and Technology</i> , 2018 , 33, 114015	1.8	4
117	Controlled generation of intrinsic near-infrared color centers in 4H-SiC via proton irradiation and annealing. <i>Applied Physics Letters</i> , 2018 , 113, 122102	3.4	24
116	Structural fluctuations cause spin-split states in tetragonal (CHNH)PbI as evidenced by the circular photogalvanic effect. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 9509-9514	11.5	80
115	Origin of nonsaturating linear magnetoresistivity. <i>Physical Review B</i> , 2017 , 95,	3.3	16
114	Charge transport in C-based single-molecule junctions with graphene electrodes. <i>Nanoscale</i> , 2017 , 9, 7217-7226	7.7	10
113	Quantitative Investigation of Near Interface Traps in 4H-SiC MOSFETs via Drain Current Deep Level Transient Spectroscopy. <i>Materials Science Forum</i> , 2017 , 897, 111-114	0.4	9

112	Anomalous Dirac point transport due to extended defects in bilayer graphene. <i>Nature Communications</i> , 2017 , 8, 342	17.4	14
111	Light-field-driven currents in graphene. <i>Nature</i> , 2017 , 550, 224-228	50.4	182
110	On Deep Level Transient Spectroscopy of Extended Defects in n-Type 4H-SiC. <i>Materials Science Forum</i> , 2017 , 897, 201-204	0.4	3
109	Charge-Carrier Transport in Large-Area Epitaxial Graphene. <i>Annalen Der Physik</i> , 2017 , 529, 1700048	2.6	2
108	Hidden Defects and Unexpected Properties of Graphene [How Advanced TEM Contributes to Materials Development. <i>Microscopy and Microanalysis</i> , 2017 , 23, 1752-1753	0.5	
107	An electrical analogy to Mie scattering. <i>Nature Communications</i> , 2016 , 7, 12894	17.4	30
106	On the Origin of Threshold Voltage Instability under Operating Conditions of 4H-SiC n-Channel MOSFETs. <i>Materials Science Forum</i> , 2016 , 858, 473-476	0.4	5
105	Doping of 4H-SiC with Group IV Elements. <i>Materials Science Forum</i> , 2016 , 858, 301-307	0.4	5
104	Maximization of the optical intra-cavity power of whispering-gallery mode resonators via coupling prism. <i>Optics Express</i> , 2016 , 24, 26503-26514	3.3	6
103	Passivation and Generation of States at P-Implanted Thermally Grown and Deposited N-Type 4H-SiC/SiO ₂ Interfaces. <i>Materials Science Forum</i> , 2016 , 858, 697-700	0.4	1
102	Effect of germanium doping on electrical properties of n-type 4H-SiC homoepitaxial layers grown by chemical vapor deposition. <i>Journal of Applied Physics</i> , 2016 , 120, 205701	2.5	5
101	Linear magnetoresistance in mosaic-like bilayer graphene. <i>Nature Physics</i> , 2015 , 11, 650-653	16.2	71
100	Terahertz response of patterned epitaxial graphene. <i>New Journal of Physics</i> , 2015 , 17, 053045	2.9	9
99	Gateless patterning of epitaxial graphene by local intercalation. <i>Nanotechnology</i> , 2015 , 26, 025302	3.4	7
98	Single-molecule junctions with epitaxial graphene nanoelectrodes. <i>Nano Letters</i> , 2015 , 15, 3512-8	11.5	66
97	In operandi observation of dynamic annealing: A case study of boron in germanium nanowire devices. <i>Applied Physics Letters</i> , 2015 , 106, 233109	3.4	2
96	Reduction of Implantation-Induced Point Defects by Germanium Ions in n-Type 4H-SiC. <i>Materials Science Forum</i> , 2015 , 821-823, 347-350	0.4	3
95	Electrical Properties of Hydrogen Intercalated Epitaxial Graphene/SiC Interface Investigated by Nanoscale Current Mapping. <i>Materials Science Forum</i> , 2015 , 821-823, 929-932	0.4	5

94	Graphene Ohmic Contacts to n-Type Silicon Carbide (0001). <i>Materials Science Forum</i> , 2015 , 821-823, 933-936	0.36	1
93	Low-Energy Electron Potentiometry: Contactless Imaging of Charge Transport on the Nanoscale. <i>Scientific Reports</i> , 2015 , 5, 13604	4.9	14
92	Dislocations in bilayer graphene. <i>Nature</i> , 2014 , 505, 533-7	50.4	145
91	Epitaxial graphene as an electrode material: a transistor testbed for organic and all-carbon semiconductors. <i>RSC Advances</i> , 2014 , 4, 34474	3.7	0
90	Drain-Current Deep Level Transient Spectroscopy Investigation on Epitaxial Graphene/6H-SiC Field Effect Transistors. <i>Materials Science Forum</i> , 2014 , 778-780, 436-439	0.4	1
89	Electrical Nanocharacterization of Epitaxial Graphene/Silicon Carbide Schottky Contacts. <i>Materials Science Forum</i> , 2014 , 778-780, 1142-1145	0.4	5
88	Monolithic circuits with epitaxial graphene/silicon carbide transistors. <i>Physica Status Solidi - Rapid Research Letters</i> , 2014 , 8, 688-691	2.5	4
87	Current noise in single-molecule junctions induced by electronic-vibrational coupling. <i>Physical Review B</i> , 2014 , 90,	3.3	28
86	Characterization of Ge-Doped Homoepitaxial Layers Grown by Chemical Vapor Deposition. <i>Materials Science Forum</i> , 2014 , 778-780, 261-264	0.4	7
85	Magnetoresistance of AlGaIn/GaN High Electron Mobility Transistors on Silicon. <i>Materials Science Forum</i> , 2014 , 778-780, 1180-1184	0.4	1
84	Reduction of Density of 4H-SiC / SiO ₂ Interface Traps by Pre-Oxidation Phosphorus Implantation. <i>Materials Science Forum</i> , 2014 , 778-780, 575-578	0.4	4
83	Persistent Conductivity in n-Type 3C-SiC Observed at Low Temperatures. <i>Materials Science Forum</i> , 2014 , 778-780, 265-268	0.4	2
82	Switching of a coupled spin pair in a single-molecule junction. <i>Nature Nanotechnology</i> , 2013 , 8, 575-9	28.7	89
81	Impact of AlN Spacer on Electron Mobility of AlGaIn/AlN/GaN Structures on Silicon. <i>Materials Science Forum</i> , 2013 , 740-742, 502-505	0.4	3
80	Broadband THz detection and homodyne mixing using GaAs high-electron-mobility transistor rectifiers 2013 ,		5
79	Robust graphene membranes in a silicon carbide frame. <i>ACS Nano</i> , 2013 , 7, 4441-8	16.7	15
78	Raman spectroscopy and electrical transport studies of free-standing epitaxial graphene: Evidence of an AB-stacked bilayer. <i>Physical Review B</i> , 2013 , 87,	3.3	3
77	Ultra-fast transistor-based detectors for precise timing of near infrared and THz signals. <i>Optics Express</i> , 2013 , 21, 17941-50	3.3	24

76	Determination of the Electrical Capture Process of the EH6-Center in n-Type 4H-SiC. <i>Materials Science Forum</i> , 2013 , 740-742, 377-380	0.4	3
75	The role of vibrations in single-molecule charge transport: A case study of oligoynes with pyridine anchor groups. <i>Physica Status Solidi (B): Basic Research</i> , 2013 , 250, 2452-2457	1.3	15
74	Detection of the Kondo effect in the resistivity of graphene: Artifacts and strategies. <i>Physical Review B</i> , 2013 , 88,	3.3	14
73	Origin of logarithmic resistance correction in graphene. <i>Nature Physics</i> , 2012 , 8, 352-352	16.2	16
72	1550 nm ErAs:In(Al)GaAs large area photoconductive emitters. <i>Applied Physics Letters</i> , 2012 , 101, 101105	5.4	48
71	Electron-electron interaction in the magnetoresistance of graphene. <i>Physical Review Letters</i> , 2012 , 108, 106601	7.4	69
70	Implanted bottom gate for epitaxial graphene on silicon carbide. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 154006	3	5
69	Tailoring the graphene/silicon carbide interface for monolithic wafer-scale electronics. <i>Nature Communications</i> , 2012 , 3, 957	17.4	93
68	Experimental evidence for quantum interference and vibrationally induced decoherence in single-molecule junctions. <i>Physical Review Letters</i> , 2012 , 109, 056801	7.4	164
67	An electrostatic gate for mechanically controlled single-molecule junctions. <i>New Journal of Physics</i> , 2012 , 14, 123028	2.9	23
66	Dependence of the Channel Mobility in 3C-SiC n-MOSFETs on the Crystal Orientation and Channel Length. <i>Materials Science Forum</i> , 2012 , 717-720, 1113-1116	0.4	2
65	A switch for epitaxial graphene electronics: Utilizing the silicon carbide substrate as transistor channel. <i>Applied Physics Letters</i> , 2012 , 100, 122102	3.4	9
64	Z1/2- and EH6-Center in 4H-SiC: Not Identical Defects ?. <i>Materials Science Forum</i> , 2012 , 717-720, 251-254	0.4	7
63	Gated Epitaxial Graphene Devices. <i>Materials Science Forum</i> , 2012 , 717-720, 675-678	0.4	
62	Bottom-gated epitaxial graphene. <i>Nature Materials</i> , 2011 , 10, 357-60	27	69
61	Resonant vibrations, peak broadening, and noise in single molecule contacts: the nature of the first conductance peak. <i>Physical Review Letters</i> , 2011 , 106, 136807	7.4	63
60	Transport properties of high-quality epitaxial graphene on 6H-SiC(0001). <i>Solid State Communications</i> , 2011 , 151, 1061-1064	1.6	18
59	The quasi-free-standing nature of graphene on H-saturated SiC(0001). <i>Applied Physics Letters</i> , 2011 , 99, 122106	3.4	206

58	Iron-Related Defect Centers in 4H-SiC Detected by Deep Level Transient Spectroscopy. <i>Materials Science Forum</i> , 2011 , 679-680, 257-260	0.4	5
57	Iron-Related Defect Centers in 3C-SiC. <i>Materials Science Forum</i> , 2011 , 679-680, 265-268	0.4	1
56	Thermally-Assisted Tunneling Model for 3C-SiC p+-n Diodes. <i>Materials Science Forum</i> , 2011 , 679-680, 571-574	0.4	1
55	Current annealing and electrical breakdown of epitaxial graphene. <i>Applied Physics Letters</i> , 2011 , 98, 2121-2124	3.0	35
54	Temperature-Dependence of the Leakage Current of 3C-SiC p+-n Diodes Caused by Extended Defects. <i>Materials Science Forum</i> , 2010 , 645-648, 343-346	0.4	
53	Transport Properties of Single-Layer Epitaxial Graphene on 6H-SiC (0001). <i>Materials Science Forum</i> , 2010 , 645-648, 637-641	0.4	5
52	Quantum oscillations and quantum Hall effect in epitaxial graphene. <i>Physical Review B</i> , 2010 , 81,	3.3	155
51	Electrical Activation of B+-Ions Implanted into 4H-SiC. <i>Materials Science Forum</i> , 2010 , 645-648, 697-700	0.4	6
50	Quasi-Freestanding Graphene on SiC(0001). <i>Materials Science Forum</i> , 2010 , 645-648, 629-632	0.4	42
49	Molecular wires in single-molecule junctions: charge transport and vibrational excitations. <i>ChemPhysChem</i> , 2010 , 11, 2256-60	3.2	73
48	Influence of Growth Rate and C/Si-Ratio on the Formation of Point and Extended Defects in 4H-SiC Homoepitaxial Layers Investigated by DLTS. <i>Materials Science Forum</i> , 2009 , 615-617, 393-396	0.4	4
47	Towards wafer-size graphene layers by atmospheric pressure graphitization of silicon carbide. <i>Nature Materials</i> , 2009 , 8, 203-7	27	2132
46	Atomic and electronic structure of few-layer graphene on SiC(0001) studied with scanning tunneling microscopy and spectroscopy. <i>Physical Review B</i> , 2008 , 77,	3.3	314
45	Ionization Energies of Phosphorus Donors in 6H-SiC. <i>Materials Science Forum</i> , 2008 , 600-603, 441-444	0.4	1
44	Charge transport through a cardan-joint molecule. <i>Small</i> , 2008 , 4, 2229-35	11	60
43	Analysis of interface trap parameters from double-peak conductance spectra taken on N-implanted 3C-SiC MOS capacitors. <i>Physica Status Solidi (B): Basic Research</i> , 2008 , 245, 1390-1395	1.3	16
42	Charge transport through molecular rods with reduced pi-conjugation. <i>ChemPhysChem</i> , 2008 , 9, 2252-8	3.2	40
41	Charge transport across single-molecule junctions: charge reconfiguration and structural dynamics. <i>Physica Status Solidi (B): Basic Research</i> , 2007 , 244, 4176-4180	1.3	7

40	Electrical and Structural Properties of Al-Implanted and Annealed 4H-SiC. <i>Materials Science Forum</i> , 2007 , 556-557, 343-346	0.4	5
39	Selenium and Tellurium Double Donors in SiC. <i>Materials Science Forum</i> , 2007 , 556-557, 607-610	0.4	1
38	(Nitrogen-Vacancy)-Complex Formation in SiC: Experiment and Theory. <i>Materials Science Forum</i> , 2007 , 556-557, 307-312	0.4	2
37	Impurity Conduction in Silicon Carbide. <i>Materials Science Forum</i> , 2007 , 556-557, 367-370	0.4	6
36	Statistical approach to investigating transport through single molecules. <i>Physical Review Letters</i> , 2007 , 98, 176807	7.4	181
35	Deactivation of nitrogen donors in silicon carbide. <i>Physical Review B</i> , 2006 , 74,	3.3	13
34	Contacting Individual Molecules Using Mechanically Controllable Break Junctions 2006 , 253-274		12
33	Fast temporal fluctuations in single-molecule junctions. <i>Faraday Discussions</i> , 2006 , 131, 281-9; discussion 307-24	3.6	26
32	Interference and Interaction in Metallic Nanostructures. <i>Lecture Notes in Physics</i> , 2005 , 185-203	0.8	
31	A single-molecule diode. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005 , 102, 8815-20	11.5	402
30	Dimensionality effects on nonequilibrium electronic transport in Cu nanobridges. <i>Physical Review B</i> , 2004 , 70,	3.3	3
29	Statistical analysis of single-molecule junctions. <i>Angewandte Chemie - International Edition</i> , 2004 , 43, 2882-4	16.4	23
28	Statistische Analyse von Einzelmolekülkontakten. <i>Angewandte Chemie</i> , 2004 , 116, 2942-2944	3.6	7
27	Evidence for crossed Andreev reflection in superconductor-ferromagnet hybrid structures. <i>Physical Review Letters</i> , 2004 , 93, 197003	7.4	258
26	Contacting single bundles of carbon nanotubes with alternating electric fields. <i>Applied Physics A: Materials Science and Processing</i> , 2003 , 76, 397-400	2.6	94
25	Electric current through a molecular rod-relevance of the position of the anchor groups. <i>Angewandte Chemie - International Edition</i> , 2003 , 42, 5834-8	16.4	244
24	Conductance properties of single-molecule junctions. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2003 , 18, 231-232	3	22
23	Stromfluss durch ein Molekül Molekulare Elektronik. <i>Physik in Unserer Zeit</i> , 2003 , 34, 272-278	0.1	6

22	Simultaneous Deposition of Metallic Bundles of Single-walled Carbon Nanotubes Using Ac-dielectrophoresis. <i>Nano Letters</i> , 2003 , 3, 1019-1023	11.5	234
21	Low-temperature conductance measurements on single molecules. <i>Applied Physics Letters</i> , 2003 , 82, 4137-4139	3.4	118
20	Ein trans-Platin(II)-Komplex als Einzelmolekülisolator. <i>Angewandte Chemie</i> , 2002 , 114, 1228-1231	3.6	18
19	A trans-platinum(II) complex as a single-molecule insulator. <i>Angewandte Chemie - International Edition</i> , 2002 , 41, 1183-6	16.4	121
18	Electronic transport through single conjugated molecules. <i>Chemical Physics</i> , 2002 , 281, 113-125	2.3	154
17	Molekulare Elektronik. <i>Nachrichten Aus Der Chemie</i> , 2002 , 50, 1212-1217	0.1	4
16	Molecular Electronics Integration of Single Molecules in Electronic Circuits. <i>Chimia</i> , 2002 , 56, 494-499	1.3	9
15	Driving current through single organic molecules. <i>Physical Review Letters</i> , 2002 , 88, 176804	7.4	730
14	Patterning and Visualizing Self-Assembled Monolayers with Low-Energy Electrons. <i>Nano Letters</i> , 2002 , 2, 1161-1164	11.5	39
13	Mechanically controlled tunneling of a single atomic defect. <i>Europhysics Letters</i> , 2001 , 54, 654-660	1.6	8
12	Conductance oscillations in mesoscopic rings: Microscopic versus global phase. <i>Physical Review B</i> , 2001 , 64,	3.3	11
11	Nonequilibrium electronic transport and interaction in short metallic nanobridges. <i>Physical Review B</i> , 2001 , 63,	3.3	20
10	Zero-Bias Transport Anomaly in Metallic Nanobridges 2001 , 53-62		
9	Universal conductance fluctuations in Cu : Mn nanocontacts. <i>Physica B: Condensed Matter</i> , 2000 , 284-288, 1858-1859	2.8	1
8	Voltage Dependence of the Amplitude of Aharonov-Bohm Oscillations in Mesoscopic Metal Rings. <i>Journal of Low Temperature Physics</i> , 2000 , 118, 467-473	1.3	10
7	Experiments on the depolarization near-field scanning optical microscope. <i>Applied Physics Letters</i> , 1999 , 74, 179-181	3.4	28
6	Magnetic phase diagram of CsCuCl ₃ for different field orientations. <i>Journal of Magnetism and Magnetic Materials</i> , 1998 , 177-181, 177-178	2.8	5
5	New results on the magnetic phases of CsCuCl ₃ in the external field. <i>Solid State Communications</i> , 1997 , 102, 609-613	1.6	12

4	Magnetic phases of CsCuCl ₃ : Anomalous critical behavior. <i>Physical Review B</i> , 1996 , 54, 15924-15927	3.3	26
3	INFLUENCE OF CHIRAL SYMMETRY ON THE CRITICAL BEHAVIOR OF STACKED TRIANGULAR ANTIFERROMAGNETS. <i>International Journal of Modern Physics B</i> , 1995 , 09, 1387-1407	1.1	23
2	The Squeezable nanojunction as a tuneable light-matter interface for studying photoluminescence of 2D materials. <i>2D Materials</i> ,	5.9	1
1	Hierarchical Assembly and Sensing Activity of Patterned Graphene-Hamilton Receptor Nanostructures. <i>Advanced Materials Interfaces</i> ,2200425	4.6	1