

Heinz-Wilhelm Hbers

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147
papers

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h-index

44
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176
ext. papers

3,276
ext. citations

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L-index

#	Paper	IF	Citations
147	Terahertz Heterodyne Receivers. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2008 , 14, 378-393	3.8	123
146	Terahertz quantum cascade laser as local oscillator in a heterodyne receiver. <i>Optics Express</i> , 2005 , 13, 5890-6	3.3	120
145	Stimulated emission from donor transitions in silicon. <i>Physical Review Letters</i> , 2000 , 84, 5220-3	7.4	114
144	High-resolution gas phase spectroscopy with a distributed feedback terahertz quantum cascade laser. <i>Applied Physics Letters</i> , 2006 , 89, 061115	3.4	109
143	Terahertz Performance of Integrated Lens Antennas With a Hot-Electron Bolometer. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2007 , 55, 239-247	4.1	90
142	Terahertz Techniques. <i>Springer Series in Optical Sciences</i> , 2012 ,	0.5	87
141	Terahertz lasers based on germanium and silicon. <i>Semiconductor Science and Technology</i> , 2005 , 20, S211-S221	5.8	75
140	4.7-THz Superconducting Hot Electron Bolometer Waveguide Mixer. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2015 , 5, 207-214	3.4	67
139	A compact, continuous-wave terahertz source based on a quantum-cascade laser and a miniature cryocooler. <i>Optics Express</i> , 2010 , 18, 10177-87	3.3	63
138	4.7-THz Local Oscillator for the GREAT Heterodyne Spectrometer on SOFIA. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2015 , 5, 539-545	3.4	59
137	Terahertz heterodyne receiver with quantum cascade laser and hot electron bolometer mixer in a pulse tube cooler. <i>Applied Physics Letters</i> , 2008 , 93, 141108	3.4	57
136	Parylene anti-reflection coating of a quasi-optical hot-electron-bolometric mixer at terahertz frequencies. <i>Infrared Physics and Technology</i> , 2001 , 42, 41-47	2.7	50
135	Far-infrared stimulated emission from optically excited bismuth donors in silicon. <i>Applied Physics Letters</i> , 2002 , 80, 4717-4719	3.4	47
134	Fast 2-D and 3-D Terahertz Imaging With a Quantum-Cascade Laser and a Scanning Mirror. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2013 , 3, 617-624	3.4	44
133	Si:P as a laboratory analogue for hydrogen on high magnetic field white dwarf stars. <i>Nature Communications</i> , 2013 , 4, 1469	17.4	44
132	Gas Spectroscopy System for Breath Analysis at mm-wave/THz Using SiGe BiCMOS Circuits. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2017 , 65, 1807-1818	4.1	43
131	Stimulated terahertz stokes emission of silicon crystals doped with antimony donors. <i>Physical Review Letters</i> , 2006 , 96, 037404	7.4	43

130	Submegahertz frequency stabilization of a terahertz quantum cascade laser to a molecular absorption line. <i>Applied Physics Letters</i> , 2010 , 96, 071112	3.4	41
129	High Resolution Terahertz Spectroscopy with Quantum Cascade Lasers. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2013 , 34, 325-341	2.2	39
128	Terahertz gas-phase spectroscopy: chemometrics for security and medical applications. <i>Analyst, The</i> , 2015 , 140, 213-22	5	38
127	Towards traceable radiometry in the terahertz region. <i>Metrologia</i> , 2009 , 46, S160-S164	2.1	37
126	The upGREAT Dual Frequency Heterodyne Arrays for SOFIA. <i>Journal of Astronomical Instrumentation</i> , 2018 , 07, 1840014	0.8	35
125	Frequency modulation spectroscopy with a THz quantum-cascade laser. <i>Optics Express</i> , 2013 , 21, 32199-306	3.6	34
124	245-GHz Transmitter Array in SiGe BiCMOS for Gas Spectroscopy. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2016 , 6, 318-327	3.4	33
123	Stimulated terahertz emission from arsenic donors in silicon. <i>Applied Physics Letters</i> , 2004 , 84, 3600-3602	3.4	33
122	[12Cii] and [13C ii] 158 μ m emission from NGC 2024: Large column densities of ionized carbon. <i>Astronomy and Astrophysics</i> , 2012 , 542, L16	5.1	32
121	Terahertz optically pumped Si:Sb laser. <i>Journal of Applied Physics</i> , 2002 , 92, 5632-5634	2.5	31
120	Stimulated terahertz emission from group-V donors in silicon under intracenter photoexcitation. <i>Applied Physics Letters</i> , 2002 , 80, 3512-3514	3.4	31
119	Analysis of Human Breath by Millimeter-Wave/Terahertz Spectroscopy. <i>Sensors</i> , 2019 , 19,	3.8	29
118	Quantum-cascade lasers as local oscillators for heterodyne spectrometers in the spectral range around 4.745 THz. <i>Semiconductor Science and Technology</i> , 2013 , 28, 035011	1.8	27
117	Tunable 245 GHz transmitter and receiver in SiGe technology for gas spectroscopy. <i>Electronics Letters</i> , 2014 , 50, 881-882	1.1	25
116	Terahertz Spectroscopy: System and Sensitivity Considerations. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2011 , 1, 321-331	3.4	25
115	The ionized and hot gas in M17 SW. <i>Astronomy and Astrophysics</i> , 2012 , 542, L13	5.1	23
114	Population inversion and far-infrared emission from optically pumped silicon. <i>Applied Physics Letters</i> , 1999 , 74, 2655-2657	3.4	23
113	First detection of the 63 μ m atomic oxygen line in the thermosphere of Mars with GREAT/SOFIA. <i>Astronomy and Astrophysics</i> , 2015 , 580, L10	5.1	22



112	The physical principles of terahertz silicon lasers based on intracenter transitions. <i>Physica Status Solidi (B): Basic Research</i> , 2013 , 250, 9-36	1.3	21
111	Fast continuous tuning of terahertz quantum-cascade lasers by rear-facet illumination. <i>Applied Physics Letters</i> , 2016 , 108, 191106	3.4	21
110	Compressed Sensing in a Fully Non-Mechanical 350 GHz Imaging Setting. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2015 , 36, 496-512	2.2	20
109	Terahertz gas spectroscopy through self-mixing in a quantum-cascade laser. <i>Applied Physics Letters</i> , 2016 , 109, 191101	3.4	20
108	Terahertz Emission Spectra of Optically Pumped Silicon Lasers. <i>Physica Status Solidi (B): Basic Research</i> , 2002 , 233, 191-196	1.3	20
107	High-spectral-resolution terahertz imaging with a quantum-cascade laser. <i>Optics Express</i> , 2016 , 24, 13833-49	3.4	18
106	Multi-channel terahertz grating spectrometer with quantum-cascade laser and microbolometer array. <i>Applied Physics Letters</i> , 2011 , 99, 141112	3.4	18
105	High-resolution terahertz spectroscopy with quantum-cascade lasers. <i>Journal of Applied Physics</i> , 2019 , 125, 151401	2.5	17
104	Tunable 500 GHz transmitter array in SiGe technology for gas spectroscopy. <i>Electronics Letters</i> , 2015 , 51, 257-259	1.1	17
103	Optically pumped terahertz semiconductor bulk lasers. <i>Physica Status Solidi (B): Basic Research</i> , 2003 , 235, 126-134	1.3	17
102	245 GHz SiGe sensor system for gas spectroscopy. <i>International Journal of Microwave and Wireless Technologies</i> , 2015 , 7, 271-278	0.8	16
101	Inhomogeneous broadening of phosphorus donor lines in the far-infrared spectra of single-crystalline SiGe. <i>Physical Review B</i> , 2010 , 82,	3.3	16
100	The rotational spectrum of the NH ⁺ radical in its X 2Pi and a 4Sigma- states. <i>Journal of Chemical Physics</i> , 2009 , 131, 034311	3.9	16
99	Time-resolved electronic capture in n-type germanium doped with antimony. <i>Physical Review B</i> , 2014 , 89,	3.3	14
98	Low-threshold terahertz Si:As laser. <i>Applied Physics Letters</i> , 2007 , 90, 141109	3.4	14
97	Terahertz gain on shallow donor transitions in silicon. <i>Journal of Applied Physics</i> , 2007 , 102, 093104	2.5	14
96	2.5 THz heterodyne receiver with NbN hot-electron-bolometer mixer. <i>Physica C: Superconductivity and Its Applications</i> , 2002 , 372-376, 448-453	1.3	14
95	A Compact Circular Multipass Cell for Millimeter-Wave/Terahertz Gas Spectroscopy. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2020 , 10, 9-14	3.4	14


94	Transmitters and receivers in SiGe BiCMOS technology for sensitive gas spectroscopy at 222 - 270 GHz. <i>AIP Advances</i> , 2019 , 9, 015213	1.5	13
93	Isotope effect on the lifetime of the 2p0 state in phosphorus-doped silicon. <i>Physical Review B</i> , 2013 , 88,	3.3	13
92	Influence of uniaxial stress on stimulated terahertz emission from phosphor and antimony donors in silicon. <i>Applied Physics Letters</i> , 2007 , 90, 051101	3.4	13
91	Doppler-free spectroscopy with a terahertz quantum-cascade laser. <i>Optics Express</i> , 2018 , 26, 6692-6699	3.3	12
90	Characterizing the beam properties of terahertz quantum-cascade lasers. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2014 , 35, 686-698	2.2	12
89	Multifrequency terahertz lasing from codoped silicon crystals. <i>Applied Physics Letters</i> , 2011 , 98, 061102	3.4	12
88	Terahertz Raman laser based on silicon doped with phosphorus. <i>Applied Physics Letters</i> , 2008 , 92, 091111	3.4	12
87	Terahertz emission from silicon doped by shallow impurities. <i>Physica B: Condensed Matter</i> , 2001 , 308-310, 232-235	2.8	12
86	Mask Responses for Single-Pixel Terahertz Imaging. <i>Scientific Reports</i> , 2018 , 8, 4886	4.9	11
85	Identification of Unknown Substances by Terahertz Spectroscopy and Multivariate Data Analysis. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2016 , 37, 175-188	2.2	11
84	Real-time gas sensing based on optical feedback in a terahertz quantum-cascade laser. <i>Optics Express</i> , 2017 , 25, 30203-30213	3.3	10
83	Stimulated terahertz emission due to electronic Raman scattering in silicon. <i>Applied Physics Letters</i> , 2009 , 94, 171112	3.4	10
82	Diffusion doping of silicon with magnesium. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017 , 214, 1700192	1.6	9
81	Heterodyne Spectroscopy of Frequency Instabilities in Terahertz Quantum-Cascade Lasers Induced by Optical Feedback. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2017 , 23, 1-6	3.8	9
80	Radii of Rydberg states of isolated silicon donors. <i>Physical Review B</i> , 2018 , 98,	3.3	9
79	Tunable 500 GHz sensor system in SiGe technology for gas spectroscopy. <i>Electronics Letters</i> , 2015 , 51, 1345-1347	1.1	9
78	Terahertz wavefront measurement with a Hartmann sensor. <i>Applied Physics Letters</i> , 2012 , 101, 031103	3.4	9
77	Evidence of noncascade intracenter electron relaxation in shallow donor centers in silicon. <i>Physical Review B</i> , 2008 , 78,	3.3	9

76	SOFIA observations of far-infrared hydroxyl emission toward classical ultracompact HII/OH maser regions. <i>Astronomy and Astrophysics</i> , 2012 , 542, L8	5.1	9
75	Defect centers in intracenter Si:P lasers. <i>Journal of Applied Physics</i> , 2005 , 97, 113708	2.5	8
74	Nonequilibrium electron distribution in terahertz intracenter silicon lasers. <i>Semiconductor Science and Technology</i> , 2004 , 19, S465-S468	1.8	8
73	Laser transitions under resonant optical pumping of donor centres in Si:P. <i>Applied Physics B: Lasers and Optics</i> , 2003 , 76, 613-616	1.9	8
72	FIR lasing based on group V donor transitions in silicon. <i>Physica B: Condensed Matter</i> , 2001 , 302-303, 342-348	2.3	8
71	Wideband, high-resolution terahertz spectroscopy by light-induced frequency tuning of quantum-cascade lasers. <i>Optics Express</i> , 2019 , 27, 5420-5432	3.3	8
70	Shallow donor complexes formed by pairing of double-donor magnesium with group-III acceptors in silicon. <i>Physical Review B</i> , 2019 , 99,	3.3	7
69	High-Performance GaAs/AlAs Terahertz Quantum-Cascade Lasers For Spectroscopic Applications. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2020 , 10, 133-140	3.4	7
68	Intrinsic frequency tuning of terahertz quantum-cascade lasers. <i>Journal of Applied Physics</i> , 2018 , 123, 213102	2.5	7
67	Further investigations of the deep double donor magnesium in silicon. <i>Physical Review B</i> , 2018 , 98,	3.3	7
66	A Compact 4.75-THz Source Based on a Quantum-Cascade Laser With a Back-Facet Mirror. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2019 , 9, 606-612	3.4	7
65	Terahertz lasing from silicon by infrared Raman scattering on bismuth centers. <i>Applied Physics Letters</i> , 2009 , 95, 201110	3.4	7
64	Laser-processed diffractive lenses for the frequency range of 4.7 THz. <i>Optics Letters</i> , 2019 , 44, 1210-1213	3.3	7
63	Dynamics of nonequilibrium electrons on neutral center states of interstitial magnesium donors in silicon. <i>Physical Review B</i> , 2016 , 94,	3.3	7
62	Relaxation Times and Population Inversion of Excited States of Arsenic Donors in Germanium. <i>JETP Letters</i> , 2019 , 110, 677-682	1.2	7
61	Low-level LIBS and Raman data fusion in the context of in situ Mars exploration. <i>Journal of Raman Spectroscopy</i> , 2020 , 51, 1682-1701	2.3	7
60	Towards Breath Gas Analysis Based on Millimeter-Wave Molecular Spectroscopy. <i>Frequenz</i> , 2018 , 72, 87-92	0.6	6
59	Terahertz Dynamic Aperture Imaging at Standoff Distances Using a Compressed Sensing Protocol. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2019 , 9, 364-372	3.4	6

58	Terahertz Stimulated Emission from Silicon Doped by Hydrogenlike Acceptors. <i>Physical Review X</i> , 2014 , 4,	9.1	6
57	Noise temperature of an NbN hot-electron bolometric mixer at frequencies from 0.7 THz to 5.2 THz. <i>Superconductor Science and Technology</i> , 1999 , 12, 748-750	3.1	6
56	Gas Spectroscopy by Voltage-Frequency Tuning of a 245 GHz SiGe Transmitter and Receiver. <i>IEEE Sensors Journal</i> , 2016 , 16, 8863-8864	4	6
55	Dual-Band Transmitter and Receiver With Bowtie-Antenna in 0.13 μm SiGe BiCMOS for Gas Spectroscopy at 222 - 270 GHz. <i>IEEE Access</i> , 2021 , 9, 124805-124816	3.5	6
54	Dynamics of non-equilibrium charge carriers in p-germanium doped by gallium. <i>Physica Status Solidi (B): Basic Research</i> , 2017 , 254, 1600803	1.3	5
53	Photon assisted tunneling in pairs of silicon donors. <i>Physical Review B</i> , 2014 , 89,	3.3	5
52	Spin-orbit coupling effect on bismuth donor lasing in stressed silicon. <i>Applied Physics Letters</i> , 2011 , 99, 171108	3.4	5
51	Gas spectroscopy system at 245 and 500 GHz using transmitters and receivers in SiGe BiCMOS 2016 ,		5
50	Direct measurements of atomic oxygen in the mesosphere and lower thermosphere using terahertz heterodyne spectroscopy. <i>Communications Earth & Environment</i> , 2021 , 2,	6.1	5
49	Optimizing the Operation of Terahertz Silicon Lasers. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2009 , 15, 925-932	3.8	4
48	Raman lasers due to scattering on donor electronic resonances in silicon. <i>Physica B: Condensed Matter</i> , 2009 , 404, 4661-4663	2.8	4
47	Frequency tunability of the terahertz silicon laser by a magnetic field. <i>Applied Physics Letters</i> , 2006 , 89, 021108	3.4	4
46	The development of terahertz superconducting hot-electron bolometric mixers. <i>Superconductor Science and Technology</i> , 2004 , 17, S436-S439	3.1	4
45	Laser emission at 4.5 THz from NH and a mid-infrared quantum-cascade laser as a pump source. <i>Optics Express</i> , 2020 , 28, 23114-23121	3.3	4
44	Qualitative and quantitative analysis of terahertz gas-phase spectroscopy using independent component analysis. <i>Chemometrics and Intelligent Laboratory Systems</i> , 2020 , 206, 104129	3.8	4
43	Mg-pair isoelectronic bound exciton identified by its isotopic fingerprint in Si ²⁸ . <i>Physical Review B</i> , 2018 , 98,	3.3	4
42	Chemical Shift and Exchange Interaction Energy of the 1s States of Magnesium Donors in Silicon. The Possibility of Stimulated Emission. <i>Semiconductors</i> , 2019 , 53, 1234-1237	0.7	3
41	Dynamics of infrared excitations in boron doped diamond. <i>Diamond and Related Materials</i> , 2019 , 92, 259-265	3.5	3

40	245 GHz transmitter and receiver in SiGe for gas spectroscopy 2014 ,		3
39	Influence of group II and III shallow acceptors on the gain of p-Ge lasers. <i>Physica B: Condensed Matter</i> , 2001 , 302-303, 334-341	2.8	3
38	Evaluation of Low-Cost Thermal Laser Stimulation for Data Extraction and Key Readout. <i>Journal of Hardware and Systems Security</i> , 2020 , 4, 24-33	1.6	3
37	Sensor system in SiGe BiCMOS at 245 and 500 GHz for gas spectroscopy 2016 ,		3
36	Sensitive Millimeter-Wave/Terahertz Gas Spectroscopy Based on SiGe BiCMOS Technology 2018 ,		3
35	A 3.5-THz, 6-Harmonic, Single-Ended Schottky Diode Mixer for Frequency Stabilization of Quantum-Cascade Lasers. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2021 , 1-1	3.4	3
34	Terahertz gas-sensors: Gas-phase spectroscopy and multivariate analysis for medical and security applications 2015 ,		2
33	Terahertz Imaging. <i>Springer Series in Optical Sciences</i> , 2012 , 301-340	0.5	2
32	Influence of an electric field on the operation of terahertz intracenter silicon lasers. <i>Journal of Applied Physics</i> , 2010 , 107, 033114	2.5	2
31	. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2002 , 50, 134-142	4.1	2
30	Detection of Volatile Organic Compounds in Exhaled Human Breath by Millimeter- Wave/Terahertz spectroscopy 2018 ,		2
29	Gas Spectroscopy at 222 \pm 70 GHz Based on SiGe BiCMOS using a Multi-Pass Ring Cell 2019 ,		1
28	Influence of uniaxial stress on phonon-assisted relaxation in bismuth-doped silicon. <i>Journal of Applied Physics</i> , 2020 , 127, 035706	2.5	1
27	Laser-Ablated Silicon in the Frequency Range From 0.1 to 4.7 THz. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2019 , 9, 581-586	3.4	1
26	Optical Components. <i>Springer Series in Optical Sciences</i> , 2012 , 51-101	0.5	1
25	Using terahertz cascade lasers for determination of optical losses in active medium of silicon intracenter lasers 2010 ,		1
24	Multi-crystalline silicon as active medium for terahertz intracenter lasers. <i>Physica B: Condensed Matter</i> , 2008 , 403, 535-538	2.8	1
23	Terahertz Silicon Lasers 2003 , 331-340		1

22	Higher-order Zeeman effect of Mg-related donor complexes in silicon. <i>Physical Review B</i> , 2020 , 102,	3.3	1
21	A balloon-borne 4.75 THz-heterodyne receiver to probe atomic oxygen in the atmosphere 2020 ,		1
20	Gas spectroscopy system with transmitters and receivers in SiGe BiCMOS for 225-273 GHz 2017 ,		1
19	Frequency and power stabilization of a terahertz quantum-cascade laser using near-infrared optical excitation. <i>Optics Express</i> , 2019 , 27, 36846-36854	3.3	1
18	Large substitutional impurity isotope shift in infrared spectra of boron-doped diamond. <i>Physical Review B</i> , 2020 , 102,	3.3	1
17	Terahertz transient stimulated emission from doped silicon. <i>APL Photonics</i> , 2020 , 5, 106102	5.2	1
16	Even-Parity Excited States in Infrared Emission, Absorption, and Raman Scattering Spectra of Shallow Donor Centers in Silicon. <i>Physica Status Solidi (B): Basic Research</i> , 2019 , 256, 1800514	1.3	1
15	Molecular spectroscopy with a terahertz quantum-cascade laser by illumination-induced frequency tuning 2018 ,		1
14	Competing Inversion-Based Lasing and Raman Lasing in Doped Silicon. <i>Physical Review X</i> , 2018 , 8,	9.1	1
13	High-resolution, background-free spectroscopy of shallow-impurity transitions in semiconductors with a terahertz photomixer source. <i>Applied Physics Letters</i> , 2019 , 114, 092103	3.4	0
12	Detectors. <i>Springer Series in Optical Sciences</i> , 2012 , 169-245	0.5	0
11	 <i>Fizika I Tehnika Poluprovodnikov</i> , 2021 , 55, 299	0	0
10	Magnesium-related shallow donor centers in silicon. <i>Materials Science in Semiconductor Processing</i> , 2021 , 130, 105833	4.3	0
9	Intracenter dipole transitions of a hydrogen-like boron acceptor in diamond: Oscillator strengths and line broadening. <i>Diamond and Related Materials</i> , 2021 , 120, 108629	3.5	0
8	Stimulated Terahertz Emission of Bismuth Donors in Uniaxially Strained Silicon under Optical Intracenter Excitation. <i>Semiconductors</i> , 2019 , 53, 1255-1257	0.7	
7	Optical Principles at Terahertz Frequencies. <i>Springer Series in Optical Sciences</i> , 2012 , 23-49	0.5	
6	Spectroscopic Methods. <i>Springer Series in Optical Sciences</i> , 2012 , 247-300	0.5	
5	 <i>Fizika I Tehnika Poluprovodnikov</i> , 2019 , 53, 1263	0	

4	 Si: Bi. <i>Fizika I Tekhnika Poluprovodnikov</i> , 2020 , 54, 816	0
3	Frequency Tuning of Terahertz Stimulated Emission under the Intracenter Optical Excitation of Uniaxially Stressed Si:Bi. <i>Semiconductors</i> , 2020 , 54, 969-974	0.7
2	Terahertz absorption and emission upon the photoionization of acceptors in uniaxially stressed silicon. <i>Semiconductors</i> , 2016 , 50, 1458-1462	0.7
1	Relaxation of Coulomb States in Semiconductors Probed by FEL Radiation. <i>EPJ Web of Conferences</i> , 2018 , 195, 07008	0.3