Karl Bertling

List of Publications by Year
in descending order

92 papers	1,701 citations	361045 20 h-index	301761 39 g-index
93 all docs	93 docs citations	93 times ranked	841 citing authors

#	Article	IF	Citations
1	Laser feedback interferometry: a tutorial on the self-mixing effect for coherent sensing. Advances in Optics and Photonics, 2015, 7, 570.	12.1	294
2	Terahertz imaging using quantum cascade lasersâ€"a review of systems and applications. Journal Physics D: Applied Physics, 2014, 47, 374008.	1.3	141
3	Swept-frequency feedback interferometry using terahertz frequency QCLs: a method for imaging and materials analysis. Optics Express, 2013, 21, 22194.	1.7	91
4	Self-mixing flow sensor using a monolithic VCSEL array with parallel readout. Optics Express, 2010, 18, 11720.	1.7	85
5	Imaging of acoustic fields using optical feedback interferometry. Optics Express, 2014, 22, 30346.	1.7	68
6	Flow profile measurement in microchannel using the optical feedback interferometry sensing technique. Microfluidics and Nanofluidics, 2013, 14, 113-119.	1.0	59
7	Solving self-mixing equations for arbitrary feedback levels: a concise algorithm. Applied Optics, 2014, 53, 3723.	0.9	59
8	Self-mixing imaging sensor using a monolithic VCSEL array with parallel readout. Optics Express, 2009, 17, 5517.	1.7	55
9	Sensing and imaging using laser feedback interferometry with quantum cascade lasers. Applied Physics Reviews, 2019, 6, 021320.	5.5	52
10	Coherent three-dimensional terahertz imaging through self-mixing in a quantum cascade laser. Applied Physics Letters, 2013, 103, .	1.5	45
11	High-contrast coherent terahertz imaging of porcine tissue via swept-frequency feedback interferometry. Biomedical Optics Express, 2014, 5, 3981.	1.5	41
12	Terahertz inverse synthetic aperture radar imaging using self-mixing interferometry with a quantum cascade laser. Optics Letters, 2014, 39, 2629.	1.7	36
13	Three-dimensional terahertz imaging using swept-frequency feedback interferometry with a quantum cascade laser. Optics Letters, 2015, 40, 994.	1.7	35
14	Coherent imaging using laser feedback interferometry with pulsed-mode terahertz quantum cascade lasers. Optics Express, 2019, 27, 10221.	1.7	31
15	Approach to frequency estimation in self-mixing interferometry: multiple signal classification. Applied Optics, 2013, 52, 3345.	0.9	30
16	Effect of the optical system on the Doppler spectrum in laser-feedback interferometry. Applied Optics, 2015, 54, 18.	0.9	30
17	Laser Feedback Interferometry as a Tool for Analysis of Granular Materials at Terahertz Frequencies: Towards Imaging and Identification of Plastic Explosives. Sensors, 2016, 16, 352.	2.1	27
18	Self-mixing laser Doppler flow sensor: an optofluidic implementation. Applied Optics, 2013, 52, 8128.	0.9	24

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19	A Low-Profile Wideband Tripolarized Antenna. IEEE Transactions on Antennas and Propagation, 2019, 67, 1946-1951.	3.1	24
20	Displacement and distance measurement using the change in junction voltage across a laser diode due to the self-mixing effect. , 2005, 6038, 378.		23
21	Lasersâ€"an effective artificial source of radiation for the cultivation of anoxygenic photosynthetic bacteria. Biotechnology and Bioengineering, 2006, 94, 337-345.	1.7	21
22	Methodology for materials analysis using swept-frequency feedback interferometry with terahertz frequency quantum cascade lasers. Optics Express, 2014, 22, 18633.	1.7	20
23	Simple Electrical Modulation Scheme for Laser Feedback Imaging. IEEE Sensors Journal, 2016, 16, 1937-1942.	2.4	20
24	Measurement of the emission spectrum of a semiconductor laser using laser-feedback interferometry. Scientific Reports, 2017, 7, 7236.	1.6	20
25	On the feasibility of self-mixing interferometer sensing for detection of the surface electrocardiographic signal using a customized electro-optic phase modulator. Physiological Measurement, 2013, 34, 281-289.	1.2	19
26	Confocal laser feedback tomography for skin cancer detection. Biomedical Optics Express, 2017, 8, 4037.	1.5	19
27	Optical constants from scattering-type scanning near-field optical microscope. Applied Physics Letters, 2021, 118, .	1.5	19
28	Observation of optical feedback dynamics in single-mode terahertz quantum cascade lasers: Transient instabilities. Physical Review A, 2021, 103, .	1.0	19
29	Demonstration of the self-mixing effect in interband cascade lasers. Applied Physics Letters, 2013, 103, .	1.5	17
30	Model for a pulsed terahertz quantum cascade laser under optical feedback. Optics Express, 2016, 24, 20554.	1.7	16
31	Multi-spectral terahertz sensing: proposal for a coupled-cavity quantum cascade laser based optical feedback interferometer. Optics Express, 2017, 25, 10153.	1.7	15
32	Laser feedback interferometry in multi-mode terahertz quantum cascade lasers. Optics Express, 2020, 28, 14246.	1.7	15
33	Detection sensitivity of laser feedback interferometry using a terahertz quantum cascade laser. Optics Letters, 2019, 44, 3314.	1.7	15
34	Multiple signal classification for self-mixing flowmetry. Applied Optics, 2015, 54, 2193.	0.9	13
35	Terahertz radar crossâ€section characterisation using laser feedback interferometry with quantum cascade laser. Electronics Letters, 2015, 51, 1774-1776.	0.5	12
36	Acoustic flat lensing using an indefinite medium. Physical Review B, 2019, 99, .	1.1	12

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37	Concurrent Reflectance Confocal Microscopy and Laser Doppler Flowmetry to Improve Skin Cancer Imaging: A Monte Carlo Model and Experimental Validation. Sensors, 2016, 16, 1411.	2.1	10
38	Origin of terminal voltage variations due to self-mixing in terahertz frequency quantum cascade lasers. Optics Express, 2016, 24, 21948.	1.7	10
39	Near-field terahertz nanoscopy of coplanar microwave resonators. Applied Physics Letters, 2021, 119, .	1.5	10
40	Optimum injection current waveform for a laser rangefinder based on the self-mixing effect. , 2004, , .		9
41	Active phase-nulling of the self-mixing phase in a terahertz frequency quantum cascade laser. Optics Letters, 2015, 40, 950.	1.7	9
42	Frequency Tuning Range Control in Pulsed Terahertz Quantum-Cascade Lasers: Applications in Interferometry. IEEE Journal of Quantum Electronics, 2018, 54, 1-8.	1.0	9
43	Determining Ethanol Content of Liquid Solutions Using Laser Feedback Interferometry with a Terahertz Quantum Cascade Laser. , 2018, 2, 1-4.		9
44	Self-mixing sensing system based on uncooled vertical-cavity surface-emitting laser array: linking multichannel operation and enhanced performance. Optics Letters, 2014, 39, 394.	1.7	8
45	A Compact Laser Imaging System for Concurrent Reflectance Confocal Microscopy and Laser Doppler Flowmetry. IEEE Photonics Journal, 2016, 8, 1-9.	1.0	8
46	Confocal laser feedback microscopy for inâ€depth imaging applications. Electronics Letters, 2018, 54, 196-198.	0.5	8
47	Dual-Modality Confocal Laser Feedback Tomography for Highly Scattering Medium. IEEE Sensors Journal, 2019, 19, 6134-6140.	2.4	8
48	Microparticle discrimination using laser feedback interferometry. Optics Express, 2018, 26, 25778.	1.7	8
49	Temperature-Dependent High-Speed Dynamics of Terahertz Quantum Cascade Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-9.	1.9	7
50	Terahertz quantum cascade laser under optical feedback: effects of laser self-pulsations on self-mixing signals. Optics Express, 2021, 29, 39885.	1.7	6
51	Terahertz imaging with self-pulsations in quantum cascade lasers under optical feedback. APL Photonics, 2021, 6, 091301.	3.0	6
52	Fluid flow rate measurement using the change in laser junction voltage due to the self-mixing effect. , 2006, , .		5
53	Monitoring the Electrical Properties of the Back Silicon Interface of Silicon-on-Sapphire Wafers. IEEE Electron Device Letters, 2008, 29, 325-327.	2.2	5
54	Laser dynamics under frequencyâ€shifted optical feedback with random phase. Electronics Letters, 2014, 50, 1380-1382.	0.5	5

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55	Polarization-sensitive laser feedback interferometry for specular reflection removal. Applied Optics, 2018, 57, 4067.	0.9	5
56	Comparison of SOS MOSFET's Equivalent Circuit Parameters Extracted From LCR Meter and VNA Measurement. IEEE Transactions on Electron Devices, 2012, 59, 20-25.	1.6	4
57	Surface roughness characterisation using optical feedback interferometry. Electronics Letters, 2017, 53, 268-270.	0.5	4
58	Self-mixing displacement sensing using the junction voltage variation in a GaN laser. Optoelectronic and Microelectronic Materials and Devices (COMMAD), Conference on, 2008, , .	0.0	3
59	Extraction of SOS MOSFET RF equivalent circuit elements by LCR meter measurements. Electronics Letters, 2010, 46, 863.	0.5	3
60	Probing Peptide Nanowire Conductivity by THz Nanoscopy. Nanotechnology, 2021, 33, .	1.3	3
61	Monitoring Water Dynamics in Plants using Laser Feedback Interferometry. , 2020, , .		3
62	Electrocardiographic signal detection using self-mixing interferometer technique with customized electro-optic phase modulator. , 2012, , .		2
63	Microwave head imaging system using analogue fibreâ€optic link for improved detection and localisation. Electronics Letters, 2016, 52, 1366-1368.	0.5	2
64	Parallel self-mixing flow sensor using monolithic VCSEL array. Optoelectronic and Microelectronic Materials and Devices (COMMAD), Conference on, 2008, , .	0.0	1
65	Parallel self-mixing flow sensor using monolithic VCSEL array. , 2009, , .		1
66	SOS junctionless MOSFETs vs. inversion channel MOSFETs: Doubling the device speed without changing the technology. Microwave and Optical Technology Letters, 2012, 54, 2755-2757.	0.9	1
67	Self-mixing effect in THz quantum cascade lasers: Applications in sensing and imaging. , 2013, , .		1
68	THz QCL self-mixing interferometry for biomedical applications. , 2014, , .		1
69	Optical feedback effects on terahertz quantum cascade lasers: modelling and applications. , 2016, , .		1
70	Diffuse reflectance imaging for non-melanoma skin cancer detection using laser feedback interferometry. , 2016, , .		1
71	Terahertz frequency quantum cascade lasers: Optical feedback effects and applications. , 2016, , .		1
72	Sub-surface damage detection in marble structures using THz time domain and laser feedback interferometric imaging techniques. , 2021, , .		1

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73	Quantifying relative moisture content in dielectric models using CW-THz spectroscopy and supervised machine learning regression. , 2021, , .		1
74	Cultivation of photosynthetic bacteria using vertical-cavity surface-emitting lasers. , 2005, , .		0
75	Numerical Modelling Study of the Sensitivity of SOS MOSFET Characteristics to Silicon film Thickness and Back Surface Trapped Charge Variation. , 2006, , .		0
76	Origin of the low frequency type curve in Silicon-on-Sapphire MOS capacitors. Optoelectronic and Microelectronic Materials and Devices (COMMAD), Conference on, 2008, , .	0.0	0
77	Temperature and current dependence of doppler SNR in a VCSEL based self-mixing sensor. , 2009, , .		0
78	A novel self-mixing sensor architecture using a PLL for noise immunity. , 2010, , .		0
79	Extraction of RF equivalent circuit and semiconductor parameters of SOS MOSFETs from S-Parameter measurements. , 2010, , .		0
80	Profiling the change in refractive index using the self-mixing effect in lasers. , 2012, , .		0
81	Integrated optofluidic flow sensor using the self-mixing effect. , 2012, , .		0
82	Comparison of the RF characteristics of inversion channel and depletion channel SOS MOSFETs. , 2012, , .		0
83	Optical electrocardiograph using self-mixing interferometer technique with a customized electro-optic phase modulator. , 2012, , .		0
84	Self-mixing laser velocimetry: A realistic model. , 2012, , .		0
85	Self-mixing signals in terahertz lasers. , 2012, , .		0
86	Towards a scanning laser confocal microscope using the self-mixing effect. , 2012, , .		0
87	Effect of the optical numerical aperture on the Doppler spectrum in laser Doppler velocimetry. , 2014, , .		0
88	new techniques for biological tissue imaging. Electronics Letters, 2018, 54, 185-185.	0.5	0
89	Coherent THz imaging using the self-mixing effect in quantum cascade lasers. , 2014, , .		0
90	Biomedical applications of terahertz self-mixing interferometry. SPIE Newsroom, 0, , .	0.1	0

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91	Laser Feedback Interferometry with THz QCLs: A New Technology for Imaging and Materials Analysis. , 2016, , .		0
92	Corrections to â€œTemperature-Dependent High-Speed Dynamics of Terahertz Quantum Cascade Lasersâ€• [Jul/Aug 17 Art. no. 1200209]. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-1.	1.9	0