Esther Baumann

List of Publications by Year
in descending order

123 papers	4,278 citations	101543 36 h-index	106344 65 g-index
123 all docs	123 docs citations	123 times ranked	2812 citing authors

#	Article	IF	Citations
1	10ÂGHz generation with ultra-low phase noise via the transfer oscillator technique. APL Photonics, 2022, 7, .	5.7	9
2	Remote sensing using open-path dual-comb spectroscopy. , 2021, , 27-93.		5
3	Fiber Laser Based Dual-Comb Spectroscopy with Dynamically Controlled Spectral Resolution. , 2021, , .		1
4	28 km Open Path Dual-Comb Spectroscopy. , 2021, , .		0
5	Dual-comb photoacoustic spectroscopy. Nature Communications, 2020, 11, 3152.	12.8	41
6	Compact mid-infrared dual-comb spectrometer for outdoor spectroscopy. Optics Express, 2020, 28, 14740.	3.4	31
7	Nature of fiber-coupled detector responsivity measurements at 0.1% using a primary standard. Optics Express, 2020, 28, 15331.	3.4	2
8	Measurement of Trace Gases from a Fracking Site Using Mid-Infrared Dual Comb Spectroscopy. , 2020, , .		0
9	A compact mid-infrared dual-comb spectrometer for field deployment. , 2020, , .		0
10	Field deployment of a mid-infrared dual-comb spectrometer for measurement of volatile organic compounds. , 2020, , .		1
11	Open-path dual-comb spectroscopy in the 4.5 to 4.9 pm region for multi-species detection. , 2020, , .		0
12	Measurement of the impact of turbulence anisoplanatism on precision free-space optical time transfer. Physical Review A, 2019, 99, .	2.5	24
13	Single-Blind Quantification of Natural Gas Leaks from 1 km Distance Using Frequency Combs. Environmental Science & Technology, 2019, 53, 2908-2917.	10.0	20
14	20 years of developments in optical frequency comb technology and applications. Communications Physics, 2019, 2, .	5.3	436
15	Dual-comb spectroscopy with tailored spectral broadening in Si₃N₄ nanophotonics. Optics Express, 2019, 27, 11869.	3.4	17
16	Mid-infrared dual-comb spectroscopy of volatile organic compounds across long open-air paths. Optica, 2019, 6, 165.	9.3	67
17	A Compact Mid-infrared Dual-Comb Spectrometer with 1000 nm of Spectral Coverage. , 2019, , .		0
18	Imaging through Flames with Coherent Laser Ranging. , 2019, , .		0

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19	Dual-comb spectroscopy with Si3N4 waveguides for gas spectroscopy in the 2 Î¼m â€“ 2.5 Î¼m water window. , 2019, , .		0
20	Measurement of acetone emission using a compact midinfrared dual-comb spectrometer. , 2019, , .		0
21	Mid-infrared Dual-comb Spectroscopy of Volatile Organic Compounds Across Long Open-air Paths. , 2019, , .		0
22	Femtosecond Timekeeping: Slip-Free Clockwork for Optical Timescales. Physical Review Applied, 2018, 9, .	3.8	10
23	Comparing Optical Oscillators across the Air to Milliradians in Phase and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn><mml:msup><mml:mn>0</mml:mn><mml:mrow><mml:mo>â</mml:mo></mml:mrow></mml:msup><mml:mn> in Frequency. Physical Review Letters, 2018, 120, 050801.	7.8	53
24	High-coherence mid-infrared dual-comb spectroscopy spanning 2.6 to 5.2â€‰Î¼m. Nature Photonics, 2018, 12, 202-208.	31.4	250
25	Novel Uses of Stabilized Optical Frequency Combs: From Regional Methane Leak Source Identification to Diagnostics for Extreme Combustion. , 2018, , .		0
26	Regional trace-gas source attribution using a field-deployed dual frequency comb spectrometer. Optica, 2018, 5, 320.	9.3	129
27	Coherent laser ranging for precision imaging through flames. Optica, 2018, 5, 988.	9.3	34
28	Fully self-referenced frequency comb consuming 5 watts of electrical power. OSA Continuum, 2018, 1, 274.	1.8	21
29	Compact Fiber Frequency Combs for Precision Measurement Outside the Metrology Lab. , 2018, , .		0
30	Open Path MIR DCS for Chemical Detection. , 2018, , .		0
31	The role of sulfur dioxide in stratospheric aerosol formation evaluated by using in situ measurements in the tropical lower stratosphere. Geophysical Research Letters, 2017, 44, 4280-4286.	4.0	16
32	Dual frequency comb laser absorption spectroscopy in a 16 MW gas turbine exhaust. Proceedings of the Combustion Institute, 2017, 36, 4565-4573.	3.9	73
33	Doppler-tolerant synchronization of clocks over free space at the femtosecond level. , 2017, , .		0
34	Mid-Infrared Dual Comb Spectroscopy of Propane. , 2017, , .		1
35	Broadband Mid-Infrared Dual Comb Spectroscopy with Comb-Tooth Resolution and High Signal-To-Noise Ratio. , 2017, , .		1
36	A laser-induced fluorescence instrument for aircraft measurements of sulfur dioxide in the upper troposphere and lower stratosphere. Atmospheric Measurement Techniques, 2016, 9, 4601-4613.	3.1	19

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37	Combustion Diagnostics and Chemical Sensing with Frequency Comb Lasers. , 2016, , .		0
38	Accurate frequency referencing for fieldable dual-comb spectroscopy. Optics Express, 2016, 24, 30495.	3.4	77
39	Tight real-time synchronization of a microwave clock to an optical clock across a turbulent air path. Optica, 2016, 3, 441.	9.3	49
40	Synchronization of Distant Optical Clocks at the Femtosecond Level. Physical Review X, 2016, 6, .	8.9	85
41	Synchronization of clocks through 12â€‰km of strongly turbulent air over a city. Applied Physics Letters, 2016, 109, .	3.3	61
42	Enhanced link availability for free space optical time-frequency transfer using adaptive optic terminals. , 2016, , .		0
43	Fiber laser welding of dual-phase galvanized sheet steel (DP590): traditional analysis and new quality assessment techniques. , 2016, , .		1
44	Optical system design for femtosecond-level synchronization of clocks. Proceedings of SPIE, 2016, , .	0.8	2
45	Real-time Phase Correction for High-SNR Fieldable Dual-Comb Spectroscopy. , 2016, , .		0
46	Optical Synchronization of Clocks across a 12-km Turbulent Air Path over a City. , 2016, , .		0
47	Dual Comb Outdoor Spectroscopy for Complex Molecular Response Retrieval. , 2016, , .		0
48	Spectral engineering of frequency combs using deposited waveguides. , 2016, , .		0
49	Remote Synchronization of a Microwave Clock to an Optical Clock at the Femtosecond Level. , 2016, , .		0
50	Broadband Phase Spectroscopy over Turbulent Air Paths. Physical Review Letters, 2015, 115, 103901.	7.8	40
51	Femtosecond-Level Synchronization Over Kilometer-Scale Turbulent Air Paths. , 2015, , .		0
52	Invited Article: A compact optically coherent fiber frequency comb. Review of Scientific Instruments, 2015, 86, 081301.	1.3	170
53	Dual-Comb Spectrometer for Direct Phase Spectroscopy of Greenhouse Gases across an Open Air Path. , 2015, , .		0
54	Precision Atmospheric Trace Gas Monitoring with Frequency Comb Lasers. , 2015, , .		0

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55	Free-space time and frequency transfer. , 2015, , .		0
56	Optical two-way time synchronization at the femtosecond level over a 4-km free space link. , 2015, , .		2
57	Phase Spectroscopy of Atmospheric Gases across a 2-km Open-Air Path by Dual-Comb Spectroscopy. , 2015, , .		0
58	Femtosecond-Level Synchronization of Clocks across a Turbulent Open-Path Link. , 2015, , .		0
59	Comb-calibrated FMCW LADAR for Ranging and Imaging. , 2015, , .		0
60	Synchronization of optical oscillators over a free-space link at the femtosecond level. , 2015, , .		4
61	Dual-Frequency Comb Measurements of Atmospheric Absorption: Comparison with HITRAN Database Parameters. , 2015, , .		0
62	Optical Combs for Sensor Applications. , 2014, , .		0
63	A Method to Achieve Targeted Repetition Rates for All-Fiber Mode-Locked Lasers. , 2014, , .		0
64	Frequency-comb-based remote sensing of greenhouse gases over kilometer air paths. Optica, 2014, 1, 290.	9.3	296
65	Comb-calibrated laser ranging for three-dimensional surface profiling with micrometer-level precision at a distance. Optics Express, 2014, 22, 24914.	3.4	101
66	Optical phase noise from atmospheric fluctuations and its impact on optical time-frequency transfer. Physical Review A, 2014, 89, .	2.5	76
67	CO2phase and amplitude spectra measured over 2 km outdoor path with a dual-comb spectrometer. , 2014, , .		0
68	Speckle phase noise in coherent laser ranging: fundamental precision limitations. Optics Letters, 2014, 39, 4776.	3.3	33
69	Near-Infrared Dual-Comb Spectroscopy of Gases. , 2014, , .		0
70	Broad-band frequency references in the near-infrared: Accurate dual comb spectroscopy of methane and acetylene. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 118, 26-39.	2.3	70
71	Optical two-way time and frequency transfer over free space. Nature Photonics, 2013, 7, 434-438.	31.4	233
72	Comb-calibrated frequency-modulated continuous-wave ladar for absolute distance measurements. Optics Letters, 2013, 38, 2026.	3.3	102

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73	Dual-Comb Spectroscopy of Greenhouse Gases Over a 2-km Outdoor Path. , 2013, , .		2
74	High Resolution Frequency Comb Molecular Spectroscopy. , 2013, , .		0
75	Micrometer-precision 3D imaging at 4-meter standoff distance. , 2013, , .		0
76	Open-Path Dual-Comb Spectroscopy of Greenhouse Gases. , 2013, , .		1
77	Performance analysis of optical free-space two-way time-frequency transfer. , 2013, , .		0
78	High-resolution Ranging of a Diffuse Target at Sub-Millisecond Intervals with a Calibrated FMCW Lidar. , 2012, , .		2
79	Direct-comb molecular spectroscopy with accurate, resolved comb teeth over 43 THz. Optics Letters, 2012, 37, 638.	3.3	121
80	Dual-comb techniques for precision measurement. , 2012, , .		0
81	A method for comparing remote optical clocks over a free-space optical link. , 2012, , .		0
82	Characterizing Fast Arbitrary CW Waveforms With 1500 THz/s Instantaneous Chirps. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 228-238.	2.9	27
83	Dual comb-based characterization of rapidly tuned lasers. , 2011, , .		1
84	Microwave generation with low residual phase noise from a femtosecond fiber laser with an intracavity electro-optic modulator. Optics Express, 2011, 19, 24387.	3.4	52
85	Microwave generation with low residual phase noise from a femtosecond fiber laser with an intracavity EOM. , 2011, , .		0
86	Dual-Comb Based Measurement of Frequency Agile Lasers. , 2011, , .		0
87	Precision spectroscopy with frequency combs at 3.4 Î¼m. , 2011, , .		0
88	Spectroscopy of the methane<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Î½</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>band with an accurate midinfrared coherent dual-comb spectrometer. Physical Review A, 2011, 84, .	2.5	209
89	Dual-comb-based characterization of rapidly tuned lasers. , 2011, , .		1
90	Spectroscopy with a coherent dual frequency comb interferometer at 3.4 Î¼m. Proceedings of SPIE, 2010, , .	0.8	1

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91	Performance improvement of AlN/GaN-based intersubband detectors thanks to quantum dot active regions. Proceedings of SPIE, 2010, , .	0.8	0
92	Mid-infrared quantum cascade detectors for applications in spectroscopy and pyrometry. Proceedings of SPIE, 2010, , .	0.8	1
93	Mid-infrared quantum cascade detectors for applications inÂspectroscopy and pyrometry. Applied Physics B: Lasers and Optics, 2010, 100, 313-320.	2.2	43
94	Intersubband Transition-Based Processes and Devices in AlN/GaN-Based Heterostructures. Proceedings of the IEEE, 2010, 98, 1234-1248.	21.3	40
95	Fast high-resolution spectroscopy of dynamic continuous-wave laser sources. Nature Photonics, 2010, 4, 853-857.	31.4	72
96	Monolithically integrated UV/IR-photodetectors based on an AlN/GaN-based superlattice grown on an AlGaN buffer layer. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, S818-S821.	0.8	1
97	Photodetectors based on intersubband transitions using III-nitride superlattice structures. Journal of Physics Condensed Matter, 2009, 21, 174208.	1.8	27
98	High-performance, vibration-immune, fiber-laser frequency comb. Optics Letters, 2009, 34, 638.	3.3	98
99	Quantum Cascade Detectors. IEEE Journal of Quantum Electronics, 2009, 45, 1039-1052.	1.9	175
100	Latest developments in GaN-based quantum devices for infrared optoelectronics. Journal of Materials Science: Materials in Electronics, 2008, 19, 821-827.	2.2	12
101	Applications for quantum cascade lasers and detectors in mid-infrared high-resolution heterodyne astronomy. Applied Physics B: Lasers and Optics, 2008, 90, 187-190.	2.2	13
102	MBE growth of AlN/GaNâ€based photovoltaic intersubband photodetectors. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 1060-1063.	1.8	0
103	GaN/AlN short-period superlattices for intersubband optoelectronics: A systematic study of their epitaxial growth, design, and performance. Journal of Applied Physics, 2008, 104, 093501.	2.5	165
104	Lattice-Matched GaNâ€“InAlN Waveguides at $lambda=1.55 mu$m Grown by Metalâ€“Organic Vapor Phase Epitaxy. IEEE Photonics Technology Letters, 2008, 20, 102-104.	2.5	25
105	High frequency measurements on an AlNâˆ•GaN-based intersubband detector at 1550 and 780nm. Applied Physics Letters, 2008, 92, 231104.	3.3	16
106	Short wavelength (4Î¼m) quantum cascade detector based on strain compensated InGaAsâˆ•InAlAs. Applied Physics Letters, 2008, 92, .	3.3	37
107	Midinfrared quantum cascade detector with a spectrally broad response. Applied Physics Letters, 2008, 93, .	3.3	55
108	Monolithically integrated AlGaN/GaN/AlN-based solar-blind ultraviolet and near-infrared detectors. Electronics Letters, 2008, 44, 986.	1.0	15

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109	High frequency (f=2.37â€…GHz) room temperature operation of 1.55â€…[micro sign]m AlNâˆ•GaN-based intersubband detector. Electronics Letters, 2007, 43, 185.	1.0	29
110	Optically nonlinear effects in intersubband transitions of GaNâˆ•AlN-based superlattice structures. Applied Physics Letters, 2007, 91, 131115.	3.3	38
111	16.5Î¼m quantum cascade detector using miniband transport. Applied Physics Letters, 2007, 90, 231111.	3.3	42
112	In Ga As âˆ• Al As Sb quantum cascade detectors operating in the near infrared. Applied Physics Letters, 2007, 91, .	3.3	60
113	Structural investigations of epitaxial InN by x-ray photoelectron diffraction and x-ray diffraction. Applied Physics Letters, 2007, 90, 191912.	3.3	5
114	GaN/AlN electro-optical modulator prototype at telecommunication wavelengths. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 1621-1624.	0.8	1
115	Near infrared absorption and room temperature photovoltaic response in AlNâˆ•GaN superlattices grown by metal-organic vapor-phase epitaxy. Applied Physics Letters, 2006, 89, 041106.	3.3	40
116	MBE growth of nitride-based photovoltaic intersubband detectors. Superlattices and Microstructures, 2006, 40, 418-425.	3.1	7
117	1.37 - 2.90 Micron Intersubband Transitions in GaN/AlN Superlattices. Materials Research Society Symposia Proceedings, 2006, 955, 1.	0.1	0
118	Ultrafast hole burning in intersubband absorption lines of GaNâˆ•AlN superlattices. Applied Physics Letters, 2006, 89, 151103.	3.3	11
119	Electrically adjustable intersubband absorption of a GaNâˆ•AlN superlattice grown on a transistorlike structure. Applied Physics Letters, 2006, 89, 101121.	3.3	37
120	High-quality AlNâˆ•GaN-superlattice structures for the fabrication of narrow-band 1.4â€‰Î¼m photovoltaic intersubband detectors. Applied Physics Letters, 2006, 88, 121112.	3.3	60
121	III-Nitride Nanostructures for Infrared Optoelectronics. Acta Physica Polonica A, 2006, 110, 295-301.	0.5	4
122	Tunneling effects and intersubband absorption in AlN/GaN superlattices. Applied Physics Letters, 2005, 86, 032110.	3.3	29
123	Intersubband photoconductivity at 1.6Î¼m using a strain-compensated AlNâˆ•GaN superlattice. Applied Physics Letters, 2005, 87, 191102.	3.3	40