Ben Cox

List of Publications by Year
in descending order

148 papers	7,257 citations	94433 37 h-index	58581 82 g-index
150 all docs	150 docs citations	150 times ranked	4248 citing authors

#	Article	IF	Citations
1	k-Wave: MATLAB toolbox for the simulation and reconstruction of photoacoustic wave fields. Journal of Biomedical Optics, 2010, 15, 021314.	2.6	1,501
2	Quantitative spectroscopic photoacoustic imaging: a review. Journal of Biomedical Optics, 2012, 17, 061202.	2.6	550
3	Modeling nonlinear ultrasound propagation in heterogeneous media with power law absorption using a k-space pseudospectral method. Journal of the Acoustical Society of America, 2012, 131, 4324-4336.	1.1	372
4	Deep in vivo photoacoustic imaging of mammalian tissues using a tyrosinase-based genetic reporter. Nature Photonics, 2015, 9, 239-246.	31.4	362
5	In vivo preclinical photoacoustic imaging of tumor vasculature development and therapy. Journal of Biomedical Optics, 2012, 17, 1.	2.6	260
6	Photoacoustic tomography in absorbing acoustic media using time reversal. Inverse Problems, 2010, 26, 115003.	2.0	248
7	Modeling power law absorption and dispersion for acoustic propagation using the fractional Laplacian. Journal of the Acoustical Society of America, 2010, 127, 2741-2748.	1.1	237
8	Model-Based Learning for Accelerated, Limited-View 3-D Photoacoustic Tomography. IEEE Transactions on Medical Imaging, 2018, 37, 1382-1393.	8.9	212
9	k-space propagation models for acoustically heterogeneous media: Application to biomedical photoacoustics. Journal of the Acoustical Society of America, 2007, 121, 3453.	1.1	203
10	Fast calculation of pulsed photoacoustic fields in fluids usingk-space methods. Journal of the Acoustical Society of America, 2005, 117, 3616-3627.	1.1	169
11	Multimodal photoacoustic and optical coherence tomography scanner using an all optical detection scheme for 3D morphological skin imaging. Biomedical Optics Express, 2011, 2, 2202.	2.9	166
12	Estimating chromophore distributions from multiwavelength photoacoustic images. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 443.	1.5	150
13	Accelerated high-resolution photoacoustic tomography via compressed sensing. Physics in Medicine and Biology, 2016, 61, 8908-8940.	3.0	112
14	A gradient-based method for quantitative photoacoustic tomography using the radiative transfer equation. Inverse Problems, 2013, 29, 075006.	2.0	108
15	Accurate simulation of transcranial ultrasound propagation for ultrasonic neuromodulation and stimulation. Journal of the Acoustical Society of America, 2017, 141, 1726-1738.	1.1	103
16	Quantitative determination of chromophore concentrations from 2D photoacoustic images using a nonlinear model-based inversion scheme. Applied Optics, 2010, 49, 1219.	2.1	101
17	The challenges for quantitative photoacoustic imaging. Proceedings of SPIE, 2009, , .	0.8	99
18	Photoacoustic tomography with a limited-aperture planar sensor and a reverberant cavity. Inverse Problems, 2007, 23, S95-S112.	2.0	89

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19	Deep learning in photoacoustic tomography: current approaches and future directions. Journal of Biomedical Optics, 2020, 25, .	2.6	80
20	On the adjoint operator in photoacoustic tomography. Inverse Problems, 2016, 32, 115012.	2.0	79
21	Time domain reconstruction of sound speed and attenuation in ultrasound computed tomography using full wave inversion. Journal of the Acoustical Society of America, 2017, 141, 1595-1604.	1.1	78
22	Artifact Trapping During Time Reversal Photoacoustic Imaging for Acoustically Heterogeneous Media. IEEE Transactions on Medical Imaging, 2010, 29, 387-396.	8.9	74
23	Reconstructing absorption and scattering distributions in quantitative photoacoustic tomography. Inverse Problems, 2012, 28, 084009.	2.0	74
24	In vivo photoacoustic imaging of mouse embryos. Journal of Biomedical Optics, 2012, 17, 061220.	2.6	71
25	Estimating optical absorption, scattering, and Grueneisen distributions with multiple-illumination photoacoustic tomography. Applied Optics, 2011, 50, 3145.	2.1	70
26	Sensitivity of simulated transcranial ultrasound fields to acoustic medium property maps. Physics in Medicine and Biology, 2017, 62, 2559-2580.	3.0	69
27	Measurement of the Ultrasound Attenuation and Dispersion inÂWhole Human Blood and its Components From 0â€“70 MHz. Ultrasound in Medicine and Biology, 2011, 37, 289-300.	1.5	67
28	Single-pixel optical camera for video rate ultrasonic imaging. Optica, 2016, 3, 26.	9.3	66
29	A first-order k-space model for elastic wave propagation in heterogeneous media. Journal of the Acoustical Society of America, 2012, 132, 1271-1283.	1.1	59
30	Modelling elastic wave propagation using the k-Wave MATLAB Toolbox. , 2014, , .		55
31	Bayesian Image Reconstruction in Quantitative Photoacoustic Tomography. IEEE Transactions on Medical Imaging, 2013, 32, 2287-2298.	8.9	48
32	Modeling power law absorption and dispersion in viscoelastic solids using a split-field and the fractional Laplacian. Journal of the Acoustical Society of America, 2014, 136, 1499-1510.	1.1	46
33	A Bayesian approach to spectral quantitative photoacoustic tomography. Inverse Problems, 2014, 30, 065012.	2.0	45
34	Toward accurate quantitative photoacoustic imaging: learning vascular blood oxygen saturation in three dimensions. Journal of Biomedical Optics, 2020, 25, .	2.6	41
35	The Rayleigh-like collapse of a conical bubble. Journal of the Acoustical Society of America, 2000, 107, 130-142.	1.1	40
36	Generating arbitrary ultrasound fields with tailored optoacoustic surface profiles. Applied Physics Letters, 2017, 110, .	3.3	40

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37	Characterisation of a phantom for multiwavelength quantitative photoacoustic imaging. Physics in Medicine and Biology, 2016, 61, 4950-4973.	3.0	39
38	Effects of Saliva on Starch-thickened Drinks with Acidic and Neutral pH. Dysphagia, 2012, 27, 427-435.	1.8	37
39	Design of multi-frequency acoustic kinoforms. Applied Physics Letters, 2017, 111, .	3.3	37
40	Super-resolution ultrasound. Nature, 2015, 527, 451-452.	27.8	36
41	Quantitative photoacoustic tomography using forward and adjoint Monte Carlo models of radiance. Journal of Biomedical Optics, 2016, 21, 126004.	2.6	36
42	Direct Estimation of Optical Parameters From Photoacoustic Time Series in Quantitative Photoacoustic Tomography. IEEE Transactions on Medical Imaging, 2016, 35, 2497-2508.	8.9	35
43	Representing arbitrary acoustic source and sensor distributions in Fourier collocation methods. Journal of the Acoustical Society of America, 2019, 146, 278-288.	1.1	34
44	Generating photoacoustic signals using high-peak power pulsed laser diodes. , 2005, , .		33
45	A k-space Greenâ€™s function solution for acoustic initial value problems in homogeneous media with power law absorption. Journal of the Acoustical Society of America, 2011, 129, 3652-3660.	1.1	28
46	Rapid calculation of acoustic fields from arbitrary continuous-wave sources. Journal of the Acoustical Society of America, 2018, 143, 529-537.	1.1	28
47	Quantitative photoacoustic imaging: fitting a model of light transport to the initial pressure distribution. , 2005, , .		27
48	Photoacoustic tomography with a single detector in a reverberant cavity. Journal of the Acoustical Society of America, 2009, 125, 1426-1436.	1.1	27
49	Quantitative Photoacoustic Image Reconstruction using Fluence Dependent Chromophores. Biomedical Optics Express, 2010, 1, 201.	2.9	25
50	Photoacoustic imaging using acoustic reflectors to enhance planar arrays. Journal of Biomedical Optics, 2014, 19, 126012.	2.6	25
51	Enhancing Compressed Sensing 4D Photoacoustic Tomography by Simultaneous Motion Estimation. SIAM Journal on Imaging Sciences, 2018, 11, 2224-2253.	2.2	25
52	Photoacoustic tomography using orthogonal Fabryâ€“PÃ©rot sensors. Journal of Biomedical Optics, 2016, 22, 041009.	2.6	24
53	Acoustic Wave Field Reconstruction From Compressed Measurements With Application in Photoacoustic Tomography. IEEE Transactions on Computational Imaging, 2017, 3, 710-721.	4.4	22
54	Quantitative photoacoustic tomography using illuminations from a single direction. Journal of Biomedical Optics, 2015, 20, 036015.	2.6	21

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55	Photoacoustic imaging using an 8-beam Fabry-Perot scanner. Proceedings of SPIE, 2016, , .	0.8	21
56	Stackable acoustic holograms. Applied Physics Letters, 2020, 116, .	3.3	21
57	Fabry Perot polymer film fibre-optic hydrophones and arrays for ultrasound field characterisation. Journal of Physics: Conference Series, 2004, 1, 32-37.	0.4	20
58	Gradient-based quantitative photoacoustic image reconstruction for molecular imaging. , 2007, , .		20
59	Photoacoustic tomography in a rectangular reflecting cavity. Inverse Problems, 2013, 29, 125010.	2.0	19
60	Control of broadband optically generated ultrasound pulses using binary amplitude holograms. Journal of the Acoustical Society of America, 2016, 139, 1637-1647.	1.1	19
61	Nonlinear ultrasound simulation in an axisymmetric coordinate system using a k-space pseudospectral method. Journal of the Acoustical Society of America, 2020, 148, 2288-2300.	1.1	18
62	Three dimensional photoacoustic tomography in Bayesian framework. Journal of the Acoustical Society of America, 2018, 144, 2061-2071.	1.1	16
63	Time Domain Simulation of Harmonic Ultrasound Images and Beam Patterns in 3D Using the k-space Pseudospectral Method. Lecture Notes in Computer Science, 2011, 14, 363-370.	1.3	15
64	Measurement of the ultrasound attenuation and dispersion in 3D-printed photopolymer materials from 1 to 3.5 MHz. Journal of the Acoustical Society of America, 2021, 150, 2798-2805.	1.1	15
65	100ÂMHz bandwidth planar laser-generated ultrasound source for hydrophone calibration. Ultrasonics, 2020, 108, 106218.	3.9	14
66	High resolution 3D ultrasonic breast imaging by time-domain full waveform inversion. Inverse Problems, 2022, 38, 025008.	2.0	14
67	Broadband All-Optical Plane-Wave Ultrasound Imaging System Based on a Fabryâ€“Perot Scanner. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1007-1016.	3.0	13
68	Refraction-corrected ray-based inversion for three-dimensional ultrasound tomography of the breast. Inverse Problems, 2020, 36, 125010.	2.0	13
69	Approximate k-Space Models and Deep Learning for Fast Photoacoustic Reconstruction. Lecture Notes in Computer Science, 2018, , 103-111.	1.3	12
70	Reverberant cavity photoacoustic imaging. Optica, 2019, 6, 821.	9.3	12
71	Reconstruction-classification method for quantitative photoacoustic tomography. Journal of Biomedical Optics, 2015, 20, 126004.	2.6	11
72	Laser generated ultrasound sources using carbon-polymer nanocomposites for high frequency metrology. Journal of the Acoustical Society of America, 2018, 144, 584-597.	1.1	11

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73	ElasticMatrix: A MATLAB toolbox for anisotropic elastic wave propagation in layered media. SoftwareX, 2020, 11, 100397.	2.6	11
74	A Helmholtz equation solver using unsupervised learning: Application to transcranial ultrasound. Journal of Computational Physics, 2021, 441, 110430.	3.8	11
75	Advanced photoacoustic image reconstruction using the k-Wave toolbox. Proceedings of SPIE, 2016, , .	0.8	10
76	Equivalent-Source Acoustic Holography for Projecting Measured Ultrasound Fields Through Complex Media. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 1857-1864.	3.0	10
77	A pseudospectral method for solution of the radiative transport equation. Journal of Computational Physics, 2019, 384, 376-382.	3.8	10
78	Characterisation of a PVCP-based tissue-mimicking phantom for quantitative photoacoustic imaging. Proceedings of SPIE, 2015, , .	0.8	9
79	Ray-based inversion accounting for scattering for biomedical ultrasound tomography. Inverse Problems, 2021, 37, 115003.	2.0	9
80	Effect of sensor directionality on photoacoustic imaging: a study using the k-wave toolbox. Proceedings of SPIE, 2010, , .	0.8	8
81	Acoustic attenuation compensation in photoacoustic tomography: application to high-resolution 3D imaging of vascular networks in mice. Proceedings of SPIE, 2011, , .	0.8	8
82	Effect of wavelength selection on the accuracy of blood oxygen saturation estimates obtained from photoacoustic images. , 2015, , .		8
83	Sub-sampled Fabry-Perot photoacoustic scanner for fast 3D imaging. Proceedings of SPIE, 2017, , .	0.8	8
84	Nonstandard Fourier Pseudospectral Time Domain (PSTD) Schemes for Partial Differential Equations. Communications in Computational Physics, 2018, 24, .	1.7	8
85	Quantitative photoacoustic image reconstruction for molecular imaging. , 2006, , .		7
86	Control of optically generated ultrasound fields using binary amplitude holograms. , 2014, , .		7
87	The Effect of Curing Temperature and Time on the Acoustic and Optical Properties of PVCP. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 505-512.	3.0	7
88	Quantifying numerical errors in the simulation of transcranial ultrasound using pseudospectral methods. , 2014, , .		6
89	Analysis of the Directivity of Glass-Etalon Fabryâ€“PÃ©rot Ultrasound Sensors. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 1504-1513.	3.0	6
90	The IPASC data format: A consensus data format for photoacoustic imaging. Photoacoustics, 2022, 26, 100339.	7.8	6

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91	In vivo longitudinal photoacoustic imaging of subcutaneous tumours in mice. Proceedings of SPIE, 2011, , .	0.8	5
92	3D quantitative photoacoustic tomography using the Î´-Eddington approximation. Proceedings of SPIE, 2013, , .	0.8	5
93	Three-dimensional photoacoustic imaging and inversion for accurate quantification of chromophore distributions. , 2017, , .		5
94	Mesh Density Functions Based on Local Bandwidth Applied to Moving Mesh Methods. Communications in Computational Physics, 2017, 22, 1286-1308.	1.7	5
95	Modelling laser ultrasound waveforms: The effect of varying pulse duration and material properties. Journal of the Acoustical Society of America, 2021, 149, 2040-2054.	1.1	5
96	Modeling Photoacoustic Propagation in Tissue Using k-Space Techniques. , 2017, , 25-34.		5
97	Characterisation of a PVCP based tissue-mimicking phantom for Quantitative Photoacoustic Imaging. , 2015, , .		5
98	Simultaneous estimation of chromophore concentration and scattering distributions from multiwavelength photoacoustic images. Proceedings of SPIE, 2008, , .	0.8	4
99	Modeling Photoacoustic Propagation in Tissue Using k-Space Techniques. Optical Science and Engineering, 2009, , 25-34.	0.1	4
100	A computationally efficient elastic wave model for media with power-law absorption. , 2013, , .		4
101	Accuracy of approximate inversion schemes in quantitative photoacoustic imaging. , 2014, , .		4
102	Orthogonal Fabry-PÃ©rot sensor array system for minimal-artifact photoacoustic tomography. , 2015, , .		4
103	A real-time ultrasonic field mapping system using a Fabry PÃ©rot single pixel camera for 3D photoacoustic imaging. Proceedings of SPIE, 2015, , .	0.8	4
104	Full-wave attenuation reconstruction in the time domain for ultrasound computed tomography. , 2016, , .		4
105	Plane wave ultrasound imaging with a broadband photoacoustic source. , 2012, , .		3
106	Quantitative thermoacoustic image reconstruction of conductivity profiles. Proceedings of SPIE, 2012, , .	0.8	3
107	Photoacoustic Reconstruction Using Sparsity in Curvelet Frame: Image Versus Data Domain. IEEE Transactions on Computational Imaging, 2021, 7, 879-893.	4.4	3
108	Transducer Module Development for an Open-Source Ultrasound Tomography System. , 2021, , .		3

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109	Patterned interrogation scheme for compressed sensing photoacoustic imaging using a Fabry Perot planar sensor. Proceedings of SPIE, 2014, , .	0.8	2
110	Independent component analysis for unmixing multi-wavelength photoacoustic images. , 2016, , .		2
111	Orthogonal Fabry-PÃ©rot sensors for photoacoustic tomography. , 2016, , .		2
112	Single pulse illumination of multi-layer photoacoustic holograms for patterned ultrasound field generation. , 2016, , .		2
113	Multispectral reconstruction methods for quantitative photoacoustic tomography. , 2016, , .		2
114	Utilising the radiative transfer equation in quantitative photoacoustic tomography. , 2017, , .		2
115	Statistical independence in nonlinear model-based inversion for quantitative photoacoustic tomography. Biomedical Optics Express, 2017, 8, 5297.	2.9	2
116	Accurate Time-Varying Sources in K-Space Pseudospectral Time Domain Acoustic Simulations. , 2018, , .		2
117	Pyroelectric ultrasound sensor model: directional response. Measurement Science and Technology, 2021, 32, 035106.	2.6	2
118	Photoacoustic tomography using reverberant field data from a single detector. Proceedings of SPIE, 2008, , .	0.8	1
119	Photoacoustic tomography in a reflecting cavity. Proceedings of SPIE, 2013, , .	0.8	1
120	The use of acoustic reflectors to enlarge the effective area of planar sensor arrays. , 2014, , .		1
121	Forward and adjoint radiance Monte Carlo models for quantitative photoacoustic imaging. , 2015, , .		1
122	Image reconstruction with noise and error modelling in quantitative photoacoustic tomography. , 2016, , .		1
123	Bayesian parameter estimation in spectral quantitative photoacoustic tomography. , 2016, , .		1
124	Photoacoustic imaging with a multi-view Fabry-PÃ©rot scanner. , 2017, , .		1
125	Investigating the effect of thickness and frequency spacing on multi-frequency acoustic kinoforms. , 2017, , .		1
126	Notice of Removal: Design of multi-frequency acoustic kinoforms. , 2017, , .		1

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127	Staircase-free acoustic sources for grid-based models of wave propagation. , 2017, , .		1
128	Effect of Backing on Carbon-Polymer Nanocomposite Sources for Laser Generation of Broadband Ultrasound Pulses. , 2018, , .		1
129	Bandwidth-based mesh adaptation in multiple dimensions. Journal of Computational Physics, 2018, 371, 651-662.	3.8	1
130	Measurement of the temperature-dependent speed of sound and change in GrÃ¼neisen parameter of tissue-mimicking materials. , 2019, , .		1
131	IPASC: a Community-Driven Consensus-Based Initiative Towards Standardisation in Photoacoustic Imaging. , 2020, , .		1
132	Exploiting statistical independence for quantitative photoacoustic tomography. , 2017, , .		1
133	Quantitative Photoacoustic Tomography with Fluence-Dependent Absorbers. , 2010, , .		1
134	Test materials for characterising heating from HIFU devices using photoacoustic thermometry. , 2020, , .		1
135	Pseudospectral Time-Domain (PSTD) Methods for the Wave Equation: Realizing Boundary Conditions with Discrete Sine and Cosine Transforms. Journal of Theoretical and Computational Acoustics, 2021, 29, .	1.1	1
136	High resolution 3D photoacoustic scanner for clinical vascular imaging: application to the assessment of inflammatory arthritis. , 2022, , .		1
137	Multiple-illumination photoacoustic tomography: reconstructing absorption, scattering, and GrÃ¼neisen coefficient distributions. , 2011, , .		0
138	Image reconstruction in quantitative photoacoustic tomography using the radiative transfer equation and the diffusion approximation. , 2013, , .		0
139	A monitor function for spectral moving mesh methods applied to nonlinear acoustics. AIP Conference Proceedings, 2015, , .	0.4	0
140	PO-0937: Sound speed reconstruction in full wave ultrasound computer tomography for breast cancer detection. Radiotherapy and Oncology, 2016, 119, S454-S455.	0.6	0
141	Sensitivity of quantitative photoacoustic tomography inversion schemes to experimental uncertainty. Proceedings of SPIE, 2016, , .	0.8	0
142	Staircase-free acoustic sources for grid-based models of wave propagation. , 2017, , .		0
143	Laser generated ultrasound sources using polymer nanocomposites for high frequency metrology. , 2017, , .		0
144	Laser generated ultrasound sources using polymer nanocomposites for high frequency metrology. , 2017, , .		0

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145	The Influence of Strain-Optic Coefficients on the Transduction Mechanism of Planar Glass Etalon Fabry-PÃ©rot Ultrasound Sensors. , 2019, , .		0
146	In vivo preclinical photoacoustic imaging using all-optical detection and time-reversal image reconstruction. , 2012, , .		0
147	Estimation and uncertainty quantification of optical properties directly from the photoacoustic time series. , 2017, , .		0
148	Experimental evaluation of a 3-D fully convolutional network for learning blood oxygenation saturation using photoacoustic imaging. , 2022, , .		0