John B Weaver

List of Publications by Year in descending order

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95 papers	3,551 citations	117453 34 h-index	143772 57 g-index
95 all docs	95 docs citations	95 times ranked	2759 citing authors

#	Article	IF	Citations
1	Poroelastic Mechanical Properties of the Brain Tissue of Normal Pressure Hydrocephalus Patients During Lumbar Drain Treatment Using Intrinsic Actuation MR Elastography. Academic Radiology, 2021, 28, 457-466.	1.3	20
2	Quantification of magnetic nanoparticles by compensating for multiple environment changes simultaneously. Nanoscale, 2020, 12, 195-200.	2.8	9
3	Using Magnetic Nanoparticles and Proteinâ€“Protein Interactions to Measure pH at the Nanoscale. , 2020, 4, 1-3.		6
4	Nonlinear Inversion MR Elastography With Low-Frequency Actuation. IEEE Transactions on Medical Imaging, 2020, 39, 1775-1784.	5.4	3
5	Measuring protein biomarker concentrations using antibody tagged magnetic nanoparticles. Biomedical Physics and Engineering Express, 2020, 6, 065025.	0.6	10
6	Identifying in vivo inflammation using magnetic nanoparticle spectra. Physics in Medicine and Biology, 2020, 65, 125003.	1.6	6
7	Concurrent quantification of magnetic nanoparticles temperature and relaxation time. Medical Physics, 2019, 46, 4070-4076.	1.6	8
8	Phantom evaluations of low frequency MR elastography. Physics in Medicine and Biology, 2019, 64, 065010.	1.6	7
9	MR elastography at 1â€¯Hz of gelatin phantoms using 3D or 4D acquisition. Journal of Magnetic Resonance, 2018, 296, 112-120.	1.2	15
10	Evaluating blood clot progression using magnetic particle spectroscopy. Medical Physics, 2018, 45, 3258-3263.	1.6	19
11	Phantom evaluations of nonlinear inversion MR elastography. Physics in Medicine and Biology, 2018, 63, 145021.	1.6	29
12	Blood clot detection using magnetic nanoparticles. AIP Advances, 2017, 7, 056723.	0.6	16
13	Harmonic phase angles used for nanoparticle sensing. Physics in Medicine and Biology, 2017, 62, 8102-8115.	1.6	7
14	Gradient-Based Optimization for Poroelastic and Viscoelastic MR Elastography. IEEE Transactions on Medical Imaging, 2017, 36, 236-250.	5.4	27
15	A numerical framework for interstitial fluid pressure imaging in poroelastic MRE. PLoS ONE, 2017, 12, e0178521.	1.1	16
16	Sensitivity Limits for ELISA Measurements of Molecular Biomarker Concentrations. International Journal on Magnetic Particle Imaging, 2017, 3, .	1.0	1
17	Generalized Scaling and the Master Variable for Brownian Magnetic Nanoparticle Dynamics. PLoS ONE, 2016, 11, e0150856.	1.1	2
18	Mixed Brownian alignment and NÃ©el rotations in superparamagnetic iron oxide nanoparticle suspensions driven by an ac field. Physical Review B, 2015, 92, .	1.1	109

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19	Comparisons of characteristic timescales and approximate models for Brownian magnetic nanoparticle rotations. Journal of Applied Physics, 2015, 117, 233905.	1.1	13
20	Combined NÃ©el and Brown rotational Langevin dynamics in magnetic particle imaging, sensing, and therapy. Applied Physics Letters, 2015, 107, 223106.	1.5	36
21	Toward Localized <italic>In Vivo</italic> Biomarker Concentration Measurements. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	37
22	Perpendicular Magnetic Particle Imaging, pMPI. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	3
23	A Dynamic Mechanical Analysis Technique for Porous Media. IEEE Transactions on Biomedical Engineering, 2015, 62, 443-449.	2.5	8
24	Approaches for Modeling Magnetic Nanoparticle Dynamics. Critical Reviews in Biomedical Engineering, 2014, 42, 85-93.	0.5	38
25	Measuring the microenvironmental temperature around magnetic nanoparticles. Materials Research Society Symposia Proceedings, 2014, 1625, 1.	0.1	0
26	Nonlinear simulations to optimize magnetic nanoparticle hyperthermia. Applied Physics Letters, 2014, 104, 102403.	1.5	23
27	Magnetic nanoparticle sensing: decoupling the magnetization from the excitation field. Journal Physics D: Applied Physics, 2014, 47, 045002.	1.3	24
28	Spatially-Resolved Hydraulic Conductivity Estimation Via Poroelastic Magnetic Resonance Elastography. IEEE Transactions on Medical Imaging, 2014, 33, 1373-1380.	5.4	18
29	3D multislab, multishot acquisition for fast, wholeâ€brain MR elastography with high signalâ€toâ€noise efficiency. Magnetic Resonance in Medicine, 2014, 71, 477-485.	1.9	84
30	Nanoparticles for cancer imaging: The good, the bad, and the promise. Nano Today, 2013, 8, 454-460.	6.2	140
31	Langevin equation simulation of Brownian magnetic nanoparticles with experimental and model comparisons. , 2013, , .		1
32	Molecular sensing with magnetic nanoparticles using magnetic spectroscopy of nanoparticle Brownian motion. Biosensors and Bioelectronics, 2013, 50, 441-446.	5.3	74
33	Including Spatial Information in Nonlinear Inversion MR Elastography Using Soft Prior Regularization. IEEE Transactions on Medical Imaging, 2013, 32, 1901-1909.	5.4	59
34	Temperature measurements using static field magnetic particle spectroscopy. , 2013, , .		1
35	In vivo measurement of local biomarker concentrations. , 2013, , .		1
36	Local mechanical properties of white matter structures in the human brain. NeuroImage, 2013, 79, 145-152.	2.1	158

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37	Magnetic resonance elastography of the brain using multishot spiral readouts with selfâ€navigated motion correction. Magnetic Resonance in Medicine, 2013, 70, 404-412.	1.9	93
38	Quantification of magnetic nanoparticles with low frequency magnetic fields: compensating for relaxation effects. Nanotechnology, 2013, 24, 325502.	1.3	18
39	Integration of microwave tomography with magnetic resonance for improved breast imaging. Medical Physics, 2013, 40, 103101.	1.6	58
40	Magnetic spectroscopy of nanoparticle Brownian motion measurement of microenvironment matrix rigidity. Biomedizinische Technik, 2013, 58, 547-50.	0.9	11
41	The use of magnetic nanoparticles in thermal therapy monitoring and screening: Localization and imaging (invited). Journal of Applied Physics, 2012, 111, 07B317.	1.1	7
42	Brain mechanical property measurement using MRE with intrinsic activation. Physics in Medicine and Biology, 2012, 57, 7275-7287.	1.6	75
43	MSB estimation of bound fraction: bias from binding energy uncertainty. Proceedings of SPIE, 2012, , .	0.8	0
44	Simulations of magnetic nanoparticle Brownian motion. Journal of Applied Physics, 2012, 112, 124311.	1.1	46
45	Noninvasive assessment of magnetic nanoparticleâ€“cancer cell interactions. Integrative Biology (United Kingdom), 2012, 4, 1283-1288.	0.6	22
46	Measurement of magnetic nanoparticle relaxation time. Medical Physics, 2012, 39, 2765-2770.	1.6	49
47	Concurrent quantification of multiple nanoparticle bound states. Medical Physics, 2011, 38, 1136-1140.	1.6	30
48	A three-dimensional quality-guided phase unwrapping method for MR elastography. Physics in Medicine and Biology, 2011, 56, 3935-3952.	1.6	17
49	Chemical binding affinity estimation using MSB. , 2011, , .		2
50	Micro-rheology: evaluating the rigidity of the microenvironment surrounding antibody binding sites. , 2010, , .		1
51	Harmonic phase angle as a concentrationâ€independent measure of nanoparticle dynamics. Medical Physics, 2010, 37, 2587-2592.	1.6	45
52	Contrast detection in fluidâ€saturated media with magnetic resonance poroelastography. Medical Physics, 2010, 37, 3518-3526.	1.6	31
53	The effect of viscosity on the phase of the nanoparticle magnetization induced by a harmonic applied field. , 2010, , .		10
54	Magnetic Resonance Poroelastography: An Algorithm for Estimating the Mechanical Properties of Fluid-Saturated Soft Tissues. IEEE Transactions on Medical Imaging, 2010, 29, 746-755.	5.4	58

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55	Viscous effects on nanoparticle magnetization harmonics. Journal of Magnetism and Magnetic Materials, 2010, 322, 609-613.	1.0	94
56	Measurement of molecular binding using the Brownian motion of magnetic nanoparticle probes. Applied Physics Letters, 2010, 96, 033702.	1.5	75
57	Simultaneous quantification of multiple magnetic nanoparticles. Nanotechnology, 2010, 21, 455101.	1.3	37
58	The performance of steadyâ€state harmonic magnetic resonance elastography when applied to viscoelastic materials. Medical Physics, 2010, 37, 3970-3979.	1.6	22
59	THE EFFECTS OF MOLECULAR BINDING ON THE PHASE OF MSB MEASUREMENTS. , 2010, , .		1
60	MAGNETIZATION HARMONICS AS A REMOTE METHOD FOR MONITORING ENDOCYTOSIS OF NANOPARTICLES. , 2010, , .		0
61	Assesing the feasibility for a poroelastic reconstruction algorithm in MR elastography. Proceedings of SPIE, 2009, , .	0.8	1
62	Nanoparticle temperature estimation in combined ac and dc magnetic fields. Physics in Medicine and Biology, 2009, 54, L51-L55.	1.6	76
63	Modeling of Soft Poroelastic Tissue in Time-Harmonic MR Elastography. IEEE Transactions on Biomedical Engineering, 2009, 56, 598-608.	2.5	79
64	Magnetic nanoparticle temperature estimation. Medical Physics, 2009, 36, 1822-1829.	1.6	173
65	Frequency distribution of the nanoparticle magnetization in the presence of a static as well as a harmonic magnetic field. Medical Physics, 2008, 35, 1988-1994.	1.6	90
66	Optimized motion estimation for MRE data with reduced motion encodes. Physics in Medicine and Biology, 2008, 53, 2181-2196.	1.6	4
67	Performance analysis of steady-state harmonic elastography. Physics in Medicine and Biology, 2007, 52, 2657-2674.	1.6	13
68	Reproducibility of MRE shear modulus estimates. , 2007, , .		0
69	The effects of interstitial tissue pressure on the measured shear modulus in vivo. , 2007, , .		6
70	Image-guided optical spectroscopy provides molecular-specific information in vivo: MRI-guided spectroscopy of breast cancer hemoglobin, water, and scatterer size. Optics Letters, 2007, 32, 933.	1.7	140
71	MR elastographic methods for the evaluation of plantar fat pads: preliminary comparison of the shear modulus for shearing deformation and compressive deformation in normal subjects. , 2006, , .		0
72	Anthropomorphic breast phantoms for testing elastography systems. Ultrasound in Medicine and Biology, 2006, 32, 857-874.	0.7	92

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73	A three-parameter mechanical property reconstruction method for MR-based elastic property imaging. IEEE Transactions on Medical Imaging, 2005, 24, 311-324.	5.4	26
74	Imaging the shear modulus of the heel fat pads. Clinical Biomechanics, 2005, 20, 312-319.	0.5	41
75	Magnetic resonance-guided near-infrared tomography of the breast. Review of Scientific Instruments, 2004, 75, 5262-5270.	0.6	102
76	Shear Modulus Estimation Using Parallelized Partial Volumetric Reconstruction. IEEE Transactions on Medical Imaging, 2004, 23, 1404-1416.	5.4	30
77	Initial in vivo experience with steady-state subzone-based MR elastography of the human breast. Journal of Magnetic Resonance Imaging, 2003, 17, 72-85.	1.9	202
78	Thresholds for detecting and characterizing focal lesions using steady-state MR elastography. Medical Physics, 2003, 30, 495-504.	1.6	50
79	Determination of In-Vivo Elastic Properties of Soft Tissue Using Magnetic Resonance Elastography. , 2003, , .		1
80	Three-dimensional subzone-based reconstruction algorithm for MR elastography. Magnetic Resonance in Medicine, 2001, 45, 827-837.	1.9	153
81	Magnetic resonance elastography using 3D gradient echo measurements of steady-state motion. Medical Physics, 2001, 28, 1620-1628.	1.6	96
82	Applications of monotonic noise reduction algorithms in fMRI, phase estimation, and contrast enhancement. International Journal of Imaging Systems and Technology, 1999, 10, 177-185.	2.7	7
83	Monotonic noise suppression used to improve the sensitivity of fMRI activation maps. Journal of Digital Imaging, 1998, 11, 46-52.	1.6	4
84	Elastic image registration using correlations. Journal of Digital Imaging, 1998, 11, 59-65.	1.6	11
85	Multiresolution elastic image registration. Medical Physics, 1998, 25, 1593-1604.	1.6	42
86	Reducing Noise in Images by Forcing Monotonic Change Between Extrema. , 1998, , 189-199.		1
87	The apparent diffusion constant measured by mri correlates with po2 in a rif-1 tumor. Magnetic Resonance in Medicine, 1995, 34, 515-519.	1.9	31
88	High resolution renal diffusion imaging using a modified steady-state free precession sequence. Magnetic Resonance in Medicine, 1995, 34, 586-595.	1.9	17
89	Two applications of wavelets and related techniques in medical imaging. Annals of Biomedical Engineering, 1995, 23, 637-665.	1.3	14
90	Contrast enhancement of medical images using multiscale edge representation. , 1994, 2242, 711.		28

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91	Wavelet-encoded MR imaging. Magnetic Resonance in Medicine, 1992, 24, 275-287.	1.9	92
92	Limited field of view spin echo MR imaging. Magnetic Resonance Imaging, 1991, 9, 389-394.	1.0	2
93	Simultaneous multislice acquisition of MR images. Magnetic Resonance in Medicine, 1988, 8, 275-284.	1.9	54
94	Attenuation coefficients of body tissues using principal-components analysis. Medical Physics, 1985, 12, 40-45.	1.6	30
95	Poroelasticity as a Model of Soft Tissue Structure: Hydraulic Permeability Reconstruction for Magnetic Resonance Elastography in Silico. Frontiers in Physics, 0, 8, .	1.0	13