Vera A Khokhlova

List of Publications by Year
in descending order

104	3,521	159585 30	144013 57
papers	citations	h-index	g-index

123	123	123	1512
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Acoustic characterization of high intensity focused ultrasound fields: A combined measurement and modeling approach. Journal of the Acoustical Society of America, 2008, 124, 2406-2420.	1.1	258
2	Effects of nonlinear propagation, cavitation, and boiling in lesion formation by high intensity focused ultrasound in a gel phantom. Journal of the Acoustical Society of America, 2006, 119, 1834-1848.	1.1	246
3	Histotripsy methods in mechanical disintegration of tissue: Towards clinical applications. International Journal of Hyperthermia, 2015, 31, 145-162.	2.5	216
4	Shock-Induced Heating and Millisecond Boiling in Gels and Tissue Due to High Intensity Focused Ultrasound. Ultrasound in Medicine and Biology, 2010, 36, 250-267.	1.5	181
5	Controlled tissue emulsification produced by high intensity focused ultrasound shock waves and millisecond boiling. Journal of the Acoustical Society of America, 2011, 130, 3498-3510.	1.1	154
6	Effect of overpressure and pulse repetition frequency on cavitation in shock wave lithotripsy. Journal of the Acoustical Society of America, 2002, 112, 1183-1195.	1.1	141
7	Use of overpressure to assess the role of bubbles in focused ultrasound lesion shape in vitro. Ultrasound in Medicine and Biology, 2001, 27, 695-708.	1.5	128
8	Characterization of a multi-element clinical HIFU system using acoustic holography and nonlinear modeling. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 1683-1698.	3.0	114
9	Ultrasonic atomization of tissue and its role in tissue fractionation by high intensity focused ultrasound. Physics in Medicine and Biology, 2012, 57, 8061-8078.	3.0	95
10	Focusing of High-Intensity Ultrasound Through the Rib Cage Using a Therapeutic Random Phased Array. Ultrasound in Medicine and Biology, 2010, 36, 888-906.	1.5	91
11	Histological and Biochemical Analysis of Mechanical and Thermal Bioeffects in Boiling Histotripsy Lesions Induced by High Intensity Focused Ultrasound. Ultrasound in Medicine and Biology, 2013, 39, 424-438.	1.5	91
12	Ultrasound-guided tissue fractionation by high intensity focused ultrasound in an in vivo porcine liver model. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 8161-8166.	7.1	89
13	Disintegration of Tissue Using High Intensity Focused Ultrasound: Two Approaches That Utilize Shock Waves. Acoustics Today, 2012, 8, 24.	1.0	86
14	Simulation of three-dimensional nonlinear fields of ultrasound therapeutic arrays. Acoustical Physics, 2011, 57, 334-343.	1.0	82
15	Acoustic holography as a metrological tool for characterizing medical ultrasound sources and fields. Journal of the Acoustical Society of America, 2015, 138, 1515-1532.	1.1	82
16	Noninvasive acoustic manipulation of objects in a living body. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 16848-16855.	7.1	77
17	Magnetic resonance imaging of boiling induced by high intensity focused ultrasound. Journal of the Acoustical Society of America, 2009, 125, 2420-2431.	1.1	71
18	Design of HIFU Transducers for Generating Specified Nonlinear Ultrasound Fields. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 374-390.	3.0	67

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19	Focusing of high power ultrasound beams and limiting values of shock wave parameters. Acoustical Physics, 2009, 55, 463-473.	1.0	64
20	Ultrasonic atomization of liquids in drop-chain acoustic fountains. Journal of Fluid Mechanics, 2015, 766, 129-146.	3.4	61
21	A Prototype Therapy System for Transcutaneous Application of Boiling Histotripsy. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 1542-1557.	3.0	55
22	A derating method for therapeutic applications of high intensity focused ultrasound. Acoustical Physics, 2010, 56, 354-363.	1.0	50
23	Nonlinear pulsed ultrasound beams radiated by rectangular focused diagnostic transducers. Acoustical Physics, 2006, 52, 481-489.	1.0	45
24	Dependence of Boiling Histotripsy Treatment Efficiency on HIFU Frequency and Focal Pressure Levels. Ultrasound in Medicine and Biology, 2017, 43, 1975-1985.	1.5	42
25	Parabolic equation for nonlinear acoustic wave propagation in inhomogeneous moving media. Acoustical Physics, 2006, 52, 623-632.	1.0	41
26	Nonlinear and diffraction effects in propagation ofN-waves in randomly inhomogeneous moving media. Journal of the Acoustical Society of America, 2011, 129, 1760-1772.	1.1	38
27	The role of acoustic nonlinearity in tissue heating behind a rib cage using a high-intensity focused ultrasound phased array. Physics in Medicine and Biology, 2013, 58, 2537-2559.	3.0	35
28	Analytical method for describing the paraxial region of finite amplitude sound beams. Journal of the Acoustical Society of America, 1997, 101, 1298-1308.	1.1	33
29	Nonlinear propagation of spark-generated N-waves in air: Modeling and measurements using acoustical and optical methods. Journal of the Acoustical Society of America, 2010, 128, 3321-3333.	1.1	33
30	Acoustic field characterization of the Duolith: Measurements and modeling of a clinical shock wave therapy device. Journal of the Acoustical Society of America, 2013, 134, 1663-1674.	1.1	32
31	Pilot in vivo studies on transcutaneous boiling histotripsy in porcine liver and kidney. Scientific Reports, 2019, 9, 20176.	3.3	32
32	Random focusing of nonlinear acoustic N-waves in fully developed turbulence: Laboratory scale experiment. Journal of the Acoustical Society of America, 2011, 130, 3595-3607.	1.1	29
33	Mach-Zehnder interferometry method for acoustic shock wave measurements in air and broadband calibration of microphones. Journal of the Acoustical Society of America, 2015, 137, 3314-3324.	1.1	29
34	Mach stem formation in reflection and focusing of weak shock acoustic pulses. Journal of the Acoustical Society of America, 2015, 137, EL436-EL442.	1.1	25
35	Method for Designing Multielement Fully Populated Random Phased Arrays for Ultrasound Surgery Applications. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 630-637.	3.0	25
36	Mechanisms for saturation of nonlinear pulsed and periodic signals in focused acoustic beams. Acoustical Physics, 2012, 58, 81-89.	1.0	23

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37	Design of HIFU Transducers to Generate Specific Nonlinear Ultrasound Fields. Physics Procedia, 2016, 87, 132-138.	1.2	23
38	Field Characterization and Compensation of Vibrational Nonuniformity for a 256-Element Focused Ultrasound Phased Array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 1618-1630.	3.0	23
39	â€œHIFU Beam:â€•A Simulator for Predicting Axially Symmetric Nonlinear Acoustic Fields Generated by Focused Transducers in a Layered Medium. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2837-2852.	3.0	23
40	Focus splitting associated with propagation of focused ultrasound through the rib cage. Acoustical Physics, 2010, 56, 665-674.	1.0	22
41	Therapeutic ultrasound: Recent trends and future perspectives. Physics Procedia, 2010, 3, 25-34.	1.2	22
42	Mechanical decellularization of tissue volumes using boiling histotripsy. Physics in Medicine and Biology, 2018, 63, 235023.	3.0	22
43	A Prototype Therapy System for Boiling Histotripsy in Abdominal Targets Based on a 256-Element Spiral Array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1496-1510.	3.0	22
44	Dependence of inertial cavitation induced by high intensity focused ultrasound on transducer F-number and nonlinear waveform distortion. Journal of the Acoustical Society of America, 2018, 144, 1160-1169.	1.1	20
45	Histotripsy: The Next Generation of Highâ€Intensity Focused Ultrasound for Focal Prostate Cancer Therapy. Journal of Ultrasound in Medicine, 2020, 39, 1057-1067.	1.7	20
46	Simulation of nonlinear trans-skull focusing and formation of shocks in brain using a fully populated ultrasound array with aberration correction. Journal of the Acoustical Society of America, 2019, 146, 1786-1798.	1.1	19
47	Nonlinear spherically divergent shock waves propagating in a relaxing medium. Acoustical Physics, 2008, 54, 32-41.	1.0	17
48	Laboratory-scale experiment to study nonlinearN-wave distortion by thermal turbulence. Journal of the Acoustical Society of America, 2014, 136, 556-566.	1.1	17
49	Quantification of Acoustic Radiation Forces on Solid Objects in Fluid. Physical Review Applied, 2019, 12, .	3.8	17
50	Nonlinear waveform distortion and shock formation in the near field of a continuous wave piston source. Journal of the Acoustical Society of America, 2004, 115, 1982-1987.	1.1	16
51	Investigation into the Mechanisms of Tissue Atomization by High-Intensity Focused Ultrasound. Ultrasound in Medicine and Biology, 2015, 41, 1372-1385.	1.5	16
52	Characterization of spark-generated N-waves in air using an optical schlieren method. Journal of the Acoustical Society of America, 2015, 137, 3244-3252.	1.1	16
53	Infrared mapping of ultrasound fields generated by medical transducers: Feasibility of determining absolute intensity levels. Journal of the Acoustical Society of America, 2013, 134, 1586-1597.	1.1	15
54	Use of a bovine eye lens for observation of HIFU-induced lesions in real-time. Ultrasound in Medicine and Biology, 2006, 32, 1731-1741.	1.5	13

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55	Shock formation and nonlinear saturation effects in the ultrasound field of a diagnostic curvilinear probe. Journal of the Acoustical Society of America, 2017, 141, 2327-2337.	1.1	12
56	Inactivation of Planktonic Escherichia coli by Focused 1-MHz Ultrasound Pulses with Shocks: Efficacy and Kinetics Upon Volume Scale-Up. Ultrasound in Medicine and Biology, 2018, 44, 1996-2008.	1.5	12
57	Phase-Aberration Correction for HIFU Therapy Using a Multielement Array and Backscattering of Nonlinear Pulses. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1040-1050.	3.0	12
58	Partial Respiratory Motion Compensation for Abdominal Extracorporeal Boiling Histotripsy Treatments With a Robotic Arm. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2861-2870.	3.0	12
59	Statistics of peak overpressure and shock steepness for linear and nonlinear N-wave propagation in a kinematic turbulence. Journal of the Acoustical Society of America, 2017, 142, 3402-3415.	1.1	11
60	Inertial Cavitation Behaviors Induced by Nonlinear Focused Ultrasound Pulses. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2884-2895.	3.0	10
61	Rectified growth of histotripsy bubbles. Proceedings of Meetings on Acoustics, 2013, 19, .	0.3	9
62	Treating Porcine Abscesses with Histotripsy: A Pilot Study. Ultrasound in Medicine and Biology, 2021, 47, 603-619.	1.5	9
63	Effect of Stiffness of Large Extravascular Hematomas on Their Susceptibility to Boiling Histotripsy Liquefaction in Vitro. Ultrasound in Medicine and Biology, 2020, 46, 2007-2016.	1.5	8
64	Tissue Erosion Using Shock Wave Heating and Millisecond Boiling in HIFU Fields. , 2010, , .		7
65	Irregular reflection of spark-generated shock pulses from a rigid surface: Mach-Zehnder interferometry measurements in air. Journal of the Acoustical Society of America, 2019, 145, 26-35.	1.1	7
66	Distortion of the focused finite amplitude ultrasound beam behind the random phase layer. Acoustical Physics, 2010, 56, 467-474.	1.0	6
67	Characterization of nonlinear ultrasound fields of 2D therapeutic arrays. , 2012, 2012, 1-4.		6
68	Numerical Simulation of a Nonlinear Parabolic Equation for Analyzing The Perceived Loudness Statistics of Sonic Boom Wave after Propagation Through Atmospheric Turbulent Layer. Acoustical Physics, 2021, 67, 26-37.	1.0	6
69	Ultrastructural Analysis of Volumetric Histotripsy Bio-effects in Large Human Hematomas. Ultrasound in Medicine and Biology, 2021, 47, 2608-2621.	1.5	6
70	Bilayer aberration-inducing gel phantom for high intensity focused ultrasound applications. Journal of the Acoustical Society of America, 2020, 148, 3569-3580.	1.1	6
71	Effect of surface roughness on nonlinear reflection of weak shock waves. Journal of the Acoustical Society of America, 2019, 146, EL438-EL443.	1.1	5
72	Spatial structure of high intensity focused ultrasound beams of various geometry. Physics of Wave Phenomena, 2009, 17, 45-49.	1.1	4

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73	Simulation of thermal lesions in biological tissues irradiated by high-intensity focused ultrasound through the rib cage. Physics of Wave Phenomena, 2011, 19, 62-67.	1.1	4
74	Reconstruction of nonlinear ultrasound field of an annular therapeutic array from acoustic holograms of its individual elements. Proceedings of Meetings on Acoustics, 2017, 32, .	0.3	3
75	Dual-Use Transducer for Ultrasound Imaging and Pulsed Focused Ultrasound Therapy. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2930-2941.	3.0	3
76	Statistical properties of nonlinear diffracting N-wave behind a random phase screen. Acoustical Physics, 2010, 56, 158-167.	1.0	2
77	Tissue atomization by high intensity focused ultrasound. , 2012, 2012, 1003-1006.		2
78	An Ultrasonic Caliper Device for Measuring Acoustic Nonlinearity. Physics Procedia, 2016, 87, 93-98.	1.2	2
79	MP100-02 BOILING HISTOTRIPSY ABLATION OF RENAL CARCINOMA IN A CHRONIC RAT MODEL. Journal of Urology, 2017, 197, .	0.4	2
80	Using acoustic holography to characterize absorbing layers. Proceedings of Meetings on Acoustics, 2019, , .	0.3	2
81	Holographic extraction of plane waves from an ultrasound beam for acoustic characterization of an absorbing layer of finite dimensions. Journal of the Acoustical Society of America, 2021, 149, 386-404.	1.1	2
82	Introduction to the Special Issue on Histotripsy: Approaches, Mechanisms, Hardware, and Applications. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2834-2836.	3.0	2
83	Acoustic hemostasis. AIP Conference Proceedings, 2000, , .	0.4	1
84	Measurement and Modeling of Acoustic Fields in a Gel Phantom at High Intensities. AIP Conference Proceedings, 2006, , .	0.4	1
85	Spatial Distributions Of Acoustic Parameters In Nonlinear Focused Beams Of Various Geometry. AIP Conference Proceedings, 2008, , .	0.4	1
86	Diffraction effects accompanying focused ultrasonic pulse propagation in a medium with a thermal inhomogeneity. Acoustical Physics, 2009, 55, 474-481.	1.0	1
87	The dynamics of histotripsy bubbles. AIP Conference Proceedings, 2011, , .	0.4	1
88	Counterpropagation of waves with shock fronts in a nonlinear tissue-like medium. Acoustical Physics, 2014, 60, 387-397.	1.0	1
89	Steepening and smearing of shock front of nonlinear N-wave propagating in a turbulent layer. , 2016, , .		1
90	International Society for Therapeutic Ultrasound Conference 2016. Journal of Therapeutic Ultrasound, 2017, 5, .	2.2	1

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91	Simulation of N-wave propagation in a realistic turbulent atmosphere using two-dimensional nonlinear parabolic equation. , 2019, , .		1
92	Acoustic Nonlinearity in the Derating Problem for HIFU Sources. AIP Conference Proceedings, 2005, , .	0.4	0
93	Variation of the Shape and Electronic Steering of Focal Volumes in HIFU with the Use of Random 2-D Phased Arrays. AIP Conference Proceedings, 2007, , .	0.4	0
94	Introduction to the special issue on therapeutic ultrasound. Journal of the Acoustical Society of America, 2013, 134, 1441-1441.	1.1	0
95	Ultrasonic atomization: A mechanism of tissue fractionation. Proceedings of Meetings on Acoustics, 2013, , .	0.3	0
96	PD19-11 PILOT ASSESSMENT OF TRANSCUTANEOUS BOILING HISTOTRIPSY ABLATION OF THE KIDNEY IN THE PORCINE MODEL. Journal of Urology, 2016, 195, .	0.4	0
97	Measurement and modeling of acoustic radiation force of focused ultrasound beam on an elastic sphere in water. Proceedings of Meetings on Acoustics, 2017, , .	0.3	0
98	Notice of Removal: Design and characterization of a 2-dimensional focused 1.5-MHz ultrasound array with a compact spiral arrangement of 256 circular elements. , 2017, , .		0
99	Inactivation of Planktonic Escherichia coli by High Intensity Focused Ultrasound pulses. Proceedings of Meetings on Acoustics, 2017, , .	0.3	0
100	Design and characterization of a research phantom for shock-wave enhanced irradiations in high intensity focused ultrasound therapy. , 2017, , .		0
101	Design and characterization of a research phantom for shock-wave enhanced irradiations in high intensity focused ultrasound therapy. , 2017, , .		0
102	Design of a Fully Populated Phased Array for Transcranial HIFU Therapies Based on Shock-Wave Exposures with Aberration Correction. , 2018, , .		0
103	Ultrasonic atomization: A mechanism of tissue fractionation. Journal of the Acoustical Society of America, 2013, 133, 3316-3316.	1.1	0
104	10.1121/1.5133737.1. , 2019, , .		0