

Oleg A Sapozhnikov

List of Publications by Year in descending order

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Version: 2024-02-01

131
papers

4,567
citations

117453

34
h-index

106150

65
g-index

169
all docs

169
docs citations

169
times ranked

2165
citing authors

#	ARTICLE	IF	CITATIONS
1	Physical mechanisms of the therapeutic effect of ultrasound (a review). <i>Acoustical Physics</i> , 2003, 49, 369-388.	0.2	379
2	Acoustic characterization of high intensity focused ultrasound fields: A combined measurement and modeling approach. <i>Journal of the Acoustical Society of America</i> , 2008, 124, 2406-2420.	0.5	258
3	Cavitation clouds created by shock scattering from bubbles during histotripsy. <i>Journal of the Acoustical Society of America</i> , 2011, 130, 1888-1898.	0.5	256
4	Gel phantom for use in high-intensity focused ultrasound dosimetry. <i>Ultrasound in Medicine and Biology</i> , 2005, 31, 1383-1389.	0.7	221
5	Cavitation Bubble Cluster Activity in the Breakage of Kidney Stones by Lithotripter Shockwaves. <i>Journal of Endourology</i> , 2003, 17, 435-446.	1.1	196
6	Controlled tissue emulsification produced by high intensity focused ultrasound shock waves and millisecond boiling. <i>Journal of the Acoustical Society of America</i> , 2011, 130, 3498-3510.	0.5	154
7	Radiation force of an arbitrary acoustic beam on an elastic sphere in a fluid. <i>Journal of the Acoustical Society of America</i> , 2013, 133, 661-676.	0.5	152
8	Effect of overpressure and pulse repetition frequency on cavitation in shock wave lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2002, 112, 1183-1195.	0.5	141
9	A mechanistic analysis of stone fracture in lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2007, 121, 1190-1202.	0.5	140
10	Use of overpressure to assess the role of bubbles in focused ultrasound lesion shape in vitro. <i>Ultrasound in Medicine and Biology</i> , 2001, 27, 695-708.	0.7	128
11	Characterization of a multi-element clinical HIFU system using acoustic holography and nonlinear modeling. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2013, 60, 1683-1698.	1.7	114
12	Modeling elastic wave propagation in kidney stones with application to shock wave lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2005, 118, 2667-2676.	0.5	110
13	Modeling of pulsed finite-amplitude focused sound beams in time domain. <i>Journal of the Acoustical Society of America</i> , 1998, 104, 2061-2072.	0.5	100
14	Fragmentation of Urinary Calculi In Vitro by Burst Wave Lithotripsy. <i>Journal of Urology</i> , 2015, 193, 338-344.	0.2	97
15	Ultrasonic atomization of tissue and its role in tissue fractionation by high intensity focused ultrasound. <i>Physics in Medicine and Biology</i> , 2012, 57, 8061-8078.	1.6	95
16	New piezoelectric transducers for therapeutic ultrasound. <i>Ultrasound in Medicine and Biology</i> , 2000, 26, 153-159.	0.7	93
17	A dual passive cavitation detector for localized detection of lithotripsy-induced cavitation in vitro. <i>Journal of the Acoustical Society of America</i> , 2000, 107, 1745-1758.	0.5	91
18	Disintegration of Tissue Using High Intensity Focused Ultrasound: Two Approaches That Utilize Shock Waves. <i>Acoustics Today</i> , 2012, 8, 24.	1.0	86

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19	Cavitation detection during shock-wave lithotripsy. <i>Ultrasound in Medicine and Biology</i> , 2005, 31, 1245-1256.	0.7	84
20	Acoustic holography as a metrological tool for characterizing medical ultrasound sources and fields. <i>Journal of the Acoustical Society of America</i> , 2015, 138, 1515-1532.	0.5	82
21	Noninvasive acoustic manipulation of objects in a living body. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 16848-16855.	3.3	77
22	Cavitation selectively reduces the negative-pressure phase of lithotripter shock pulses. <i>Acoustics Research Letters Online: ARLO</i> , 2005, 6, 280-286.	0.7	73
23	Design of HIFU Transducers for Generating Specified Nonlinear Ultrasound Fields. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2017, 64, 374-390.	1.7	67
24	Reconstruction of the normal velocity distribution on the surface of an ultrasonic transducer from the acoustic pressure measured on a reference surface. <i>Acoustical Physics</i> , 2003, 49, 354-360.	0.2	61
25	Ultrasonic atomization of liquids in drop-chain acoustic fountains. <i>Journal of Fluid Mechanics</i> , 2015, 766, 129-146.	1.4	61
26	A Prototype Therapy System for Transcutaneous Application of Boiling Histotripsy. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2017, 64, 1542-1557.	1.7	55
27	Evidence for Trapped Surface Bubbles as the Cause for the Twinkling Artifact in Ultrasound Imaging. <i>Ultrasound in Medicine and Biology</i> , 2013, 39, 1026-1038.	0.7	46
28	Parabolic equation for nonlinear acoustic wave propagation in inhomogeneous moving media. <i>Acoustical Physics</i> , 2006, 52, 623-632.	0.2	41
29	A new active cavitation mapping technique for pulsed HIFU applications-bubble doppler. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2014, 61, 1698-1708.	1.7	36
30	Self-action effects for wave beams containing shock fronts. <i>Physics-Usppekhi</i> , 2004, 47, 907-922.	0.8	35
31	A reduced-order, single-bubble cavitation model with applications to therapeutic ultrasound. <i>Journal of the Acoustical Society of America</i> , 2011, 130, 3511-3530.	0.5	35
32	The role of acoustic nonlinearity in tissue heating behind a rib cage using a high-intensity focused ultrasound phased array. <i>Physics in Medicine and Biology</i> , 2013, 58, 2537-2559.	1.6	35
33	Nonlinear Distortion and Attenuation of Intense Acoustic Waves in Lossy Media Obeying a Frequency Power Law. <i>Acoustical Physics</i> , 2000, 46, 170.	0.2	35
34	Nonlinear propagation of spark-generated N -waves in air: Modeling and measurements using acoustical and optical methods. <i>Journal of the Acoustical Society of America</i> , 2010, 128, 3321-3333.	0.5	33
35	Opto-acoustic diagnostics of the thermal action of high-intensity focused ultrasound on biological tissues: the possibility of its applications and model experiments. <i>Quantum Electronics</i> , 2006, 36, 1097-1102.	0.3	32
36	Transient acoustic holography for reconstructing the particle velocity of the surface of an acoustic transducer. <i>Acoustical Physics</i> , 2006, 52, 324-330.	0.2	29

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37	An exact solution to the Helmholtz equation for a quasi-Gaussian beam in the form of a superposition of two sources and sinks with complex coordinates. <i>Acoustical Physics</i> , 2012, 58, 41-47.	0.2	27
38	Method for Designing Multielement Fully Populated Random Phased Arrays for Ultrasound Surgery Applications. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2018, 65, 630-637.	1.7	25
39	Mechanisms for saturation of nonlinear pulsed and periodic signals in focused acoustic beams. <i>Acoustical Physics</i> , 2012, 58, 81-89.	0.2	23
40	Design of HIFU Transducers to Generate Specific Nonlinear Ultrasound Fields. <i>Physics Procedia</i> , 2016, 87, 132-138.	1.2	23
41	The role of trapped bubbles in kidney stone detection with the color Doppler ultrasound twinkling artifact. <i>Physics in Medicine and Biology</i> , 2018, 63, 025011.	1.6	23
42	Field Characterization and Compensation of Vibrational Nonuniformity for a 256-Element Focused Ultrasound Phased Array. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2018, 65, 1618-1630.	1.7	23
43	“HIFU Beam: A Simulator for Predicting Axially Symmetric Nonlinear Acoustic Fields Generated by Focused Transducers in a Layered Medium. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2021, 68, 2837-2852.	1.7	23
44	Therapeutic ultrasound: Recent trends and future perspectives. <i>Physics Procedia</i> , 2010, 3, 25-34.	1.2	22
45	A Prototype Therapy System for Boiling Histotripsy in Abdominal Targets Based on a 256-Element Spiral Array. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2021, 68, 1496-1510.	1.7	22
46	Dependence of inertial cavitation induced by high intensity focused ultrasound on transducer F -number and nonlinear waveform distortion. <i>Journal of the Acoustical Society of America</i> , 2018, 144, 1160-1169.	0.5	20
47	Simulation of nonlinear trans-skull focusing and formation of shocks in brain using a fully populated ultrasound array with aberration correction. <i>Journal of the Acoustical Society of America</i> , 2019, 146, 1786-1798.	0.5	19
48	Biofabrication of a Functional Tubular Construct from Tissue Spheroids Using Magnetoacoustic Levitational Directed Assembly. <i>Advanced Healthcare Materials</i> , 2020, 9, e2000721.	3.9	19
49	Monitoring bubble growth in supersaturated blood and tissue ex vivo and the relevance to marine mammal bioeffects. <i>Acoustics Research Letters Online: ARLO</i> , 2005, 6, 214-220.	0.7	18
50	Observations of the collapses and rebounds of millimeter-sized lithotripsy bubbles. <i>Journal of the Acoustical Society of America</i> , 2011, 130, 3531-3540.	0.5	18
51	Quantification of Acoustic Radiation Forces on Solid Objects in Fluid. <i>Physical Review Applied</i> , 2019, 12, .	1.5	17
52	Nonlinear waveform distortion and shock formation in the near field of a continuous wave piston source. <i>Journal of the Acoustical Society of America</i> , 2004, 115, 1982-1987.	0.5	16
53	The use of resonant scattering to identify stone fracture in shock wave lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2007, 121, EL41-EL47.	0.5	16
54	The mechanism of lesion formation by focused ultrasound ablation catheter for treatment of atrial fibrillation. <i>Acoustical Physics</i> , 2009, 55, 647-656.	0.2	16

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55	Investigation into the Mechanisms of Tissue Atomization by High-Intensity Focused Ultrasound. <i>Ultrasound in Medicine and Biology</i> , 2015, 41, 1372-1385.	0.7	16
56	Acoustic radiation torque of an acoustic-vortex spanner exerted on axisymmetric objects. <i>Applied Physics Letters</i> , 2018, 112, 254101.	1.5	16
57	A review on <i>B/A</i> measurement methods with a clinical perspective. <i>Journal of the Acoustical Society of America</i> , 2021, 149, 2200-2237.	0.5	15
58	The role of compressional pressure in the formation of dense bubble clouds in histotripsy. , 2009, , .		14
59	Improved detection of kidney stones using an optimized Doppler imaging sequence. , 2014, 2014, 452-455.		14
60	Use of a bovine eye lens for observation of HIFU-induced lesions in real-time. <i>Ultrasound in Medicine and Biology</i> , 2006, 32, 1731-1741.	0.7	13
61	Modeling of the acoustic radiation force in elastography. <i>Journal of the Acoustical Society of America</i> , 2017, 142, 947-961.	0.5	13
62	An investigation of elastic waves producing stone fracture in burst wave lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2020, 147, 1607-1622.	0.5	13
63	Increase in the efficiency of the shear wave generation in gelatin due to the nonlinear absorption of a focused ultrasonic beam. <i>Acoustical Physics</i> , 2002, 48, 214-219.	0.2	12
64	Shock formation and nonlinear saturation effects in the ultrasound field of a diagnostic curvilinear probe. <i>Journal of the Acoustical Society of America</i> , 2017, 141, 2327-2337.	0.5	12
65	Phase-Aberration Correction for HIFU Therapy Using a Multielement Array and Backscattering of Nonlinear Pulses. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2021, 68, 1040-1050.	1.7	12
66	Determination of the exact solutions to the inhomogeneous burgers equation with the use of the darbox transformation. <i>Acoustical Physics</i> , 2011, 57, 311-319.	0.2	11
67	Acoustic Field Produced by a Concave Radiating Surface with Allowance for the Diffraction. <i>Acoustical Physics</i> , 2002, 48, 720.	0.2	11
68	Compression and amplification of an ultrasonic pulse reflected from a one-dimensional layered structure. <i>Acoustical Physics</i> , 2007, 53, 127-135.	0.2	10
69	Inertial Cavitation Behaviors Induced by Nonlinear Focused Ultrasound Pulses. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2021, 68, 2884-2895.	1.7	10
70	Determination of the elastic properties of layered materials using laser excitation of ultrasound. <i>Physics of Wave Phenomena</i> , 2010, 18, 297-302.	0.3	9
71	Rectified growth of histotripsy bubbles. <i>Proceedings of Meetings on Acoustics</i> , 2013, 19, , .	0.3	9
72	Bubble Proliferation in Shock Wave Lithotripsy Occurs during Inertial Collapse. <i>AIP Conference Proceedings</i> , 2008, , .	0.3	8

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73	Acousto-optic interaction in laser vibrometry in a liquid. <i>Acoustical Physics</i> , 2009, 55, 365-375.	0.2	8
74	The use of twinkling artifact of Doppler imaging to monitor cavitation in tissue during high intensity focused ultrasound therapy. <i>Proceedings of Meetings on Acoustics</i> , 2013, 19, .	0.3	8
75	Shear waves in a resonator with cubic nonlinearity. <i>Acoustical Physics</i> , 2011, 57, 779-786.	0.2	7
76	Standing waves in an elastic layer loaded with a finite mass. <i>Acoustical Physics</i> , 2010, 56, 168-173.	0.2	6
77	Ureteroscopic Ultrasound Technology to Size Kidney Stone Fragments: Proof of Principle Using a Miniaturized Probe in a Porcine Model. <i>Journal of Endourology</i> , 2010, 24, 939-942.	1.1	6
78	Characterization of cylindrical ultrasonic transducers using acoustic holography. <i>Acoustical Physics</i> , 2011, 57, 94-105.	0.2	6
79	Characterization of nonlinear ultrasound fields of 2D therapeutic arrays. , 2012, 2012, 1-4.		6
80	Modeling of photoelastic imaging of mechanical stresses in transparent solids mimicking kidney stones. <i>Journal of the Acoustical Society of America</i> , 2020, 147, 3819-3829.	0.5	6
81	Ultrastructural Analysis of Volumetric Histotripsy Bio-effects in Large Human Hematomas. <i>Ultrasound in Medicine and Biology</i> , 2021, 47, 2608-2621.	0.7	6
82	Bilayer aberration-inducing gel phantom for high intensity focused ultrasound applications. <i>Journal of the Acoustical Society of America</i> , 2020, 148, 3569-3580.	0.5	6
83	Improved hydrophone calibration by combining acoustic holography with the radiation force balance measurements. <i>Proceedings of Meetings on Acoustics</i> , 2013, , .	0.3	5
84	Bubbles trapped on the surface of kidney stones as a cause of the twinkling artifact in ultrasound imaging. <i>Proceedings of Meetings on Acoustics</i> , 2013, 19, .	0.3	5
85	Ultrasound-based cell sorting with microbubbles: A feasibility study. <i>Journal of the Acoustical Society of America</i> , 2018, 144, 41-52.	0.5	5
86	Undelayed self-focusing of nondispersive waves with a broad spectrum. <i>Quantum Electronics</i> , 1993, 23, 896-898.	0.3	4
87	Maximizing mechanical stress in small urinary stones during burst wave lithotripsy. <i>Journal of the Acoustical Society of America</i> , 2021, 150, 4203-4212.	0.5	4
88	Interactions of Cavitation Bubbles Observed by High-Speed Imaging in Shock Wave Lithotripsy. <i>AIP Conference Proceedings</i> , 2006, , .	0.3	3
89	Ultrasonic holography of 3D objects. , 2009, , .		3
90	Standing shear waves in rubberlike layered media. <i>Acoustical Physics</i> , 2010, 56, 605-612.	0.2	3

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91	Potential Temperature Limitations of Bubble-Enhanced Heating during HIFU. AIP Conference Proceedings, 2010, , .	0.3	3
92	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
93	Excitation of shear waves inside of rubberlike material by focused ultrasound. Journal of the Acoustical Society of America, 1996, 100, 2647-2647.	0.5	3
94	Improving Burst Wave Lithotripsy Effectiveness for Small Stones and Fragments by Increasing Frequency: Theoretical Modeling and <i>Ex Vivo</i> Study. Journal of Endourology, 2022, 36, 996-1003.	1.1	3
95	Detecting Fragmentation of Kidney Stones in Lithotripsy by Means of Shock Wave Scattering. AIP Conference Proceedings, 2006, , .	0.3	2
96	Tissue atomization by high intensity focused ultrasound. , 2012, 2012, 1003-1006.		2
97	An Ultrasonic Caliper Device for Measuring Acoustic Nonlinearity. Physics Procedia, 2016, 87, 93-98.	1.2	2
98	Using acoustic holography to characterize absorbing layers. Proceedings of Meetings on Acoustics, 2019, , .	0.3	2
99	Assembly of a ring-shaped construct from tissue spheroids in a magneto-acoustic field. Proceedings of Meetings on Acoustics, 2019, , .	0.3	2
100	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.	0.5	2
101	The generalized finite amplitude insert-substitution method for B/A measurement of tissues and liquids. Proceedings of Meetings on Acoustics, 2020, , .	0.3	2
102	Experimental demonstration of enhancement of heat deposition in a focused ultrasound beam with shocks. AIP Conference Proceedings, 2000, , .	0.3	1
103	Role of Shear and Longitudinal Waves in Stone Comminution by Lithotripter Shock Waves. AIP Conference Proceedings, 2006, , .	0.3	1
104	A Passive Technique to Identify Stone Comminution During Shock Wave Lithotripsy. AIP Conference Proceedings, 2007, , .	0.3	1
105	A PASSIVE TECHNIQUE TO MONITOR STONE COMMUNITION DURING SHOCK WAVE LITHOTRIPSY. Journal of Urology, 2008, 179, 434-435.	0.2	1
106	The dynamics of histotripsy bubbles. AIP Conference Proceedings, 2011, , .	0.3	1
107	2022 EVIDENCE FOR TRAPPED SURFACE MICRO-BUBBLES AS THE ETIOLOGY OF THE TWINKLING ARTIFACT OBSERVED FROM ULTRASOUND IMAGING OF KIDNEY STONES. Journal of Urology, 2013, 189, .	0.2	1
108	PD42-02 A PRECLINICAL IMAGE-GUIDED THERAPY SYSTEM FOR BURST WAVE LITHOTRIPSY. Journal of Urology, 2015, 193, .	0.2	1

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109	Experimental verification of phased receiving waveguide array for ultrasonic imaging in aggressive liquids. Proceedings of Meetings on Acoustics, 2017, , .	0.3	1
110	Localized detection of cavitation generated by lithotripsy shock waves. Journal of the Acoustical Society of America, 1997, 101, 3139-3139.	0.5	1
111	Excitation of shear waves in gelatin by a focused sawtooth wave. AIP Conference Proceedings, 2000, , .	0.3	0
112	Assessing the Mechanism of Kidney Stone Comminution by a Lithotripter Shock Pulse. AIP Conference Proceedings, 2005, , .	0.3	0
113	New Devices and Old Pitfalls in Shock Wave Therapy. AIP Conference Proceedings, 2006, , .	0.3	0
114	Advantage of a Broad Focal Zone in SWL: Synergism Between Squeezing and Shear. AIP Conference Proceedings, 2007, , .	0.3	0
115	Simulated and experimental analysis of PVDF membrane hydrophone low-frequency response for accurate measurements of lithotripsy shockwaves. , 2008, , .		0
116	Laser ultrasonic investigation of laminate disbonding. Journal of Physics: Conference Series, 2011, 278, 012010.	0.3	0
117	Shear waves in a cubic nonlinear inhomogeneous resonator. , 2012, , .		0
118	Ultrasonic atomization: A mechanism of tissue fractionation. Proceedings of Meetings on Acoustics, 2013, , .	0.3	0
119	Experimental study of acoustic radiation force of an ultrasound beam on absorbing and scattering objects. AIP Conference Proceedings, 2015, 1685, .	0.3	0
120	Acoustic nonlinearity as a mechanism for liquid drop explosions in drop-chain fountains generated by a focused ultrasound beam. , 2016, 2016, .		0
121	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
122	The effect of shear waves in an elastic sphere on the radiation force from a quasi-Gaussian beam. Proceedings of Meetings on Acoustics, 2017, 32, .	0.3	0
123	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
124	Notice of Removal: Imaging in situ human kidney stones with the color Doppler ultrasound twinkling artifact. , 2017, , .		0
125	Design and characterization of a research phantom for shock-wave enhanced irradiations in high intensity focused ultrasound therapy. , 2017, , .		0
126	Design and characterization of a research phantom for shock-wave enhanced irradiations in high intensity focused ultrasound therapy. , 2017, , .		0

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127	Notice of Removal: Stress waves in model kidney stones exposed to burst wave lithotripsy. , 2017, , .		0
128	Design of a Fully Populated Phased Array for Transcranial HIFU Therapies Based on Shock-Wave Exposures with Aberration Correction. , 2018, , .		0
129	Group analysis of the Khokhlovâ€Zabolotskaya type equations.. Journal of the Acoustical Society of America, 2009, 126, 2200.	0.5	0
130	Ultrasonic atomization: A mechanism of tissue fractionation. Journal of the Acoustical Society of America, 2013, 133, 3316-3316.	0.5	0
131	B/A Measurement of Clear Cell Renal Cell Carcinoma versus Healthy Kidney Tissue. Ultrasound in Medicine and Biology, 2022, , .	0.7	0