

# Margaret Lucas

## List of Publications by Year in descending order

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112  
papers

1,593  
citations

331670

21  
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361022

35  
g-index

112  
all docs

112  
docs citations

112  
times ranked

875  
citing authors

#	ARTICLE	IF	CITATIONS
1	A longitudinal-torsional mode ultrasonic needle for deep penetration into bone. Ultrasonics, 2022, , 106756.	3.9	8
2	Limits and Opportunities for Miniaturizing Ultrasonic Surgical Devices Based on a Langevin Transducer. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2543-2553.	3.0	13
3	Incorporating direct metal laser sintered complex shaped Ti-6Al-4V components in ultrasonic surgical devices. Journal of the Acoustical Society of America, 2021, 150, 2163-2173.	1.1	3
4	Ultrasonic surgical devices driven by piezoelectric tubes. , 2021, , .		1
5	Comparison of performance of ultrasonic surgical cutting devices incorporating PZT piezoceramic and Mn:PIN-PMN-PT piezocrystal. , 2021, , .		1
6	Progress Towards the Miniaturization of an Ultrasonic Scalpel for Robotic Endoscopic Surgery Using Mn:PIN-PMN-PT High Performance Piezocrystals. , 2020, , .		1
7	A controlled in vitro study of optimal low intensity pulsed ultrasound fields for stimulation of proliferation in murine osteoblasts. , 2019, , .		0
8	Design of Miniature Ultrasonic Surgical Devices. , 2019, , .		2
9	A Comparison of Two Configurations for a Dual-Resonance Cymbal Transducer. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 489-496.	3.0	8
10	Comparison of Longitudinal-Mode and Longitudinal- Torsional Mode Ultrasonic Bone Biopsy Devices. , 2018, , .		3
11	Full and Half-Wavelength Ultrasonic Percussive Drills. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 2150-2159.	3.0	7
12	Ultrasonic compaction of granular geological materials. Ultrasonics, 2017, 76, 136-144.	3.9	7
13	A Parametric Study for the Design of an Optimized Ultrasonic Percussive Planetary Drill Tool. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 577-589.	3.0	28
14	Ultrasonic Needles for Bone Biopsy. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 433-440.	3.0	14
15	Vibration response of a high-power compact large-area ultrasonic resonator. , 2017, , .		0
16	Ultrasonically assisted cutting blades for large bone surgeries. Proceedings of Meetings on Acoustics, 2017, , .	0.3	0
17	The effect of driving conditions on the performance of an ultrasonic bone biopsy needle. Proceedings of Meetings on Acoustics, 2017, , .	0.3	0
18	The effect of Ti-6Al-4V microstructure on the performance of ultrasonic soft tissue cutting tips. Proceedings of Meetings on Acoustics, 2017, , .	0.3	6

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19	Dynamics Characterisation of Cymbal Transducers for Power Ultrasonics Applications. Physics Procedia, 2016, 87, 29-34.	1.2	3
20	A Miniaturized Class IV Flextensional Ultrasonic Transducer. Physics Procedia, 2016, 87, 10-15.	1.2	3
21	An ultrasonic orthopaedic surgical device based on a cymbal transducer. Ultrasonics, 2016, 72, 24-33.	3.9	28
22	Differential scanning calorimetry of superelastic Nitinol for tunable cymbal transducers. Journal of Intelligent Material Systems and Structures, 2016, 27, 1376-1387.	2.5	5
23	Ultrasonic biopsy needle based on the class IV flextensional configuration. , 2015, , .		1
24	Design of a Slender Tuned Ultrasonic Needle for Bone Penetration. Physics Procedia, 2015, 70, 10-13.	1.2	2
25	A Motion Control System Design for an Ultrasonic Percussive Coring/Drilling Unit. , 2015, , .		3
26	The Development of the European Ultrasonic Planetary Core Drill (UPCD). , 2015, , .		7
27	An ultrasonically assisted sagittal saw for large bone surgeries. , 2015, , .		3
28	Assessment of the performance of a novel power ultrasonic biopsy needle. , 2015, , .		0
29	Understanding nonlinear vibration behaviours in high-power ultrasonic surgical devices. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20140906.	2.1	21
30	A Comparison of Past, Present and Future Bone Surgery Tools. International Journal of Orthopaedics (Hong Kong), 2015, 2, 266-269.	0.1	8
31	Smart cymbal transducers with nitinol end caps tunable to multiple operating frequencies. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2014, 61, 1709-1719.	3.0	10
32	Characterization of a Langevin transducer incorporating Mn-doped piezocrystal material. , 2014, , .		0
33	A cymbal transducer for power ultrasonics applications. Sensors and Actuators A: Physical, 2014, 210, 182-189.	4.1	31
34	A Rock-coring Campaign in an Analogue Environment:Performance, Lessons and Development. , 2014, , .		0
35	The influence of piezoceramic stack location on nonlinear behavior of langevin transducers. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 1126-1133.	3.0	36
36	A design approach for longitudinalâ€”torsional ultrasonic transducers. Sensors and Actuators A: Physical, 2013, 198, 99-106.	4.1	106

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37	Smart cymbal transducers with Nitinol end-caps for power ultrasonics applications. , 2013, , .		0
38	Characterising the Strain and Temperature Fields in a Surrogate Bone Material Subject to Power Ultrasonic Excitation. Strain, 2013, 49, 409-419.	2.4	6
39	Characterising the acoustoplastic effect in an ultrasonically assisted metal forming process. IOP Conference Series: Materials Science and Engineering, 2012, 42, 012017.	0.6	5
40	A study of weld quality in ultrasonic spot welding of similar and dissimilar metals. Journal of Physics: Conference Series, 2012, 382, 012013.	0.4	14
41	An analytical model of a longitudinal-torsional ultrasonic transducer. Journal of Physics: Conference Series, 2012, 382, 012061.	0.4	4
42	Vibration characterisation of cymbal transducers for power ultrasonic applications. Journal of Physics: Conference Series, 2012, 382, 012063.	0.4	2
43	Study of an ultrasonic bone cutting blade for orthopaedic surgery. , 2012, , .		2
44	The effects of ultrasonics in fragmentation of saturated porous rock samples. , 2012, , .		3
45	A numerical and experimental study of ultrasonic metal welding. IOP Conference Series: Materials Science and Engineering, 2012, 42, 012015.	0.6	4
46	Inspiration from Victorian times in Ultrasonic Surgical Tool Design. Journal of Physics: Conference Series, 2012, 382, 012044.	0.4	0
47	Coupling and degenerating modes in longitudinal-torsional step horns. Ultrasonics, 2012, 52, 980-988.	3.9	26
48	A brief overview of space applications for ultrasonics. Ultrasonics, 2012, 52, 975-979.	3.9	18
49	Maximization of the effective impulse delivered by a high-frequency/low-frequency planetary drill tool. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 2387-2396.	3.0	21
50	Optimization of Ultrasonic Horns for Momentum Transfer and Survivability in High-Frequency/Low Frequency Planetary Drill Tools. , 2011, , .		1
51	Architectures for ultrasonic planetary sample retrieval tools. Ultrasonics, 2011, 51, 1026-1035.	3.9	14
52	A Study Of An Ultrasonically Assisted Metal Forming Test. AIP Conference Proceedings, 2011, , .	0.4	3
53	Ultrasonics in enhanced recovery of oil from porous rock. , 2011, , .		0
54	Finite element modeling and design of cymbal transducers for power ultrasonics applications. , 2011, , .		0

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55	An analytical model of cymbal transducer dynamics. Radial vibration of a piezoelectric disc. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2011, 225, 1077-1086.	2.1	3
56	Ultrasonic rock sampling using longitudinal-torsional vibrations. Ultrasonics, 2010, 50, 447-452.	3.9	56
57	Ultrasonic rock sampling using longitudinal-torsional vibrations. Physics Procedia, 2010, 3, 125-134.	1.2	17
58	Optimization of the Horn, Free-Mass, and Support Architecture of a Solid Ultrasonic Rock Coring System. , 2010, , .		3
59	Characterisation of nonlinear behaviour of power ultrasonic drilling horns. , 2009, , .		3
60	Ultrasonic rock drilling devices using longitudinal-torsional compound vibration. , 2009, , .		7
61	Research applications and opportunities in power ultrasonics. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2009, 223, 2949-2965.	2.1	25
62	A finite element model of ultrasonic extrusion. Journal of Physics: Conference Series, 2009, 181, 012027.	0.4	6
63	A Simple, Lightweight And Low-Reaction Deployable Architecture for Subsurface Sample Retrieval. , 2009, , .		2
64	An ultrasonic corer for planetary rock sample retrieval. Journal of Physics: Conference Series, 2009, 181, 012048.	0.4	4
65	A radial mode ultrasonic horn for the inactivation of Escherichia coli K12. Ultrasonics Sonochemistry, 2008, 15, 101-109.	8.2	33
66	Applications of Power Ultrasonics in Engineering. Applied Mechanics and Materials, 2008, 13-14, 11-20.	0.2	3
67	Modelling the effects of superimposed ultrasonic vibrations on tension and compression tests of aluminium. Journal of Materials Processing Technology, 2007, 186, 179-190.	6.3	173
68	Methods for reducing cutting temperature in ultrasonic cutting of bone. Ultrasonics, 2006, 44, e37-e42.	3.9	53
69	A finite element model for ultrasonic cutting. Ultrasonics, 2006, 44, e503-e509.	3.9	38
70	Superimposed ultrasonic oscillations in compression tests of aluminium. Ultrasonics, 2006, 44, e511-e515.	3.9	70
71	Design of an Ultrasonic Blade for Cutting Bone. Applied Mechanics and Materials, 2006, 3-4, 79-84.	0.2	1
72	Ultrasonic Compression Tests on Aluminium. Applied Mechanics and Materials, 2006, 3-4, 99-104.	0.2	9

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73	A Finite Element Model for Ultrasonic Cutting of Toffee. Applied Mechanics and Materials, 2006, 5-6, 519-526.	0.2	4
74	P2G-7 Effect of Ultrasonic Cutting Blade Orientation on Cutting Temperature. , 2006, , .		0
75	Temperature Effects in Ultrasonic Cutting of Natural Materials. CIRP Annals - Manufacturing Technology, 2005, 54, 195-198.	3.6	20
76	Strategies for Reducing Stress in Ultrasonic Cutting Systems. Strain, 2005, 41, 11-18.	2.4	9
77	Automatic wheeze detection based on auditory modelling. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2005, 219, 219-227.	1.8	25
78	Optimisation of the vibrational response of ultrasonic cutting systems. IMA Journal of Applied Mathematics, 2005, 70, 645-656.	1.6	7
79	Ultrasonic Cutting with High-Gain Blades. Applied Mechanics and Materials, 2004, 1-2, 45-50.	0.2	1
80	A novel multiple blade ultrasonic cutting device. Ultrasonics, 2004, 42, 69-74.	3.9	22
81	A preliminary investigation into optimising the response of vibrating systems used for ultrasonic cutting. Journal of Sound and Vibration, 2004, 272, 1047-1069.	3.9	24
82	Effects of Modal Interactions on Vibration Performance in Ultrasonic Cutting. CIRP Annals - Manufacturing Technology, 2003, 52, 193-196.	3.6	5
83	Nonlinear and Parametric Vibrations in Ultrasonic Cutting Systems. Materials Science Forum, 2003, 440-441, 397-406.	0.3	5
84	Study of Ultrasonic Upsetting under Radial and Longitudinal Die Vibration. Materials Science Forum, 2003, 440-441, 389-396.	0.3	6
85	A numerical and experimental study of the indentation mechanics of plasticine. Journal of Strain Analysis for Engineering Design, 2002, 37, 141-150.	1.8	15
86	<title>Wedge indentation of an elastoviscoplastic material</title>. , 2002, , .		0
87	<title>Effect of ultrasonic vibration on wedge indentation of a model elastoviscoplastic material</title>. , 2002, , .		4
88	Enhanced vibration performance of ultrasonic block horns. Ultrasonics, 2002, 40, 365-369.	3.9	63
89	Influence of ultrasonics on upsetting of a model paste. Ultrasonics, 2002, 40, 43-48.	3.9	66
90	Segmental mandibular reconstruction by microincremental automatic distraction osteogenesis: an animal study. British Journal of Oral and Maxillofacial Surgery, 2001, 39, 356-364.	0.8	32

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91	Breath sounds, asthma, and the mobile phone. <i>Lancet, The</i> , 2001, 358, 1343-1344.	13.7	30
92	Design and Characterisation of Ultrasonic Cutting Tools. <i>CIRP Annals - Manufacturing Technology</i> , 2001, 50, 149-152.	3.6	27
93	Modelling wall boundary conditions in an elasto-viscoplastic material forming process. <i>Journal of Materials Processing Technology</i> , 2000, 107, 267-275.	6.3	17
94	Limitations in the use of median frequency for lung sound analysis. <i>Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine</i> , 2000, 214, 265-275.	1.8	4
95	Modal analysis of ultrasonic block horns by ESPI. <i>Ultrasonics</i> , 1999, 37, 149-157.	3.9	13
96	Extracting modal parameters of ultrasonic bar horns from ESPI FRF data. <i>Ultrasonics</i> , 1999, 37, 231-238.	3.9	3
97	Quantitative modal analysis using electronic speckle pattern interferometry. <i>Optics and Lasers in Engineering</i> , 1999, 31, 147-161.	3.8	9
98	TORSIONAL AND BENDING VIBRATION MEASUREMENT ON ROTORS USING LASER TECHNOLOGY. <i>Journal of Sound and Vibration</i> , 1999, 226, 441-467.	3.9	45
99	A study of the natural vibratory response of stator structures to improve condition monitoring strategies for induction motors. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 1998, 212, 57-68.	2.1	3
100	Redesign of Ultrasonic Block Horns for Improved Vibration Performance. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 1997, 119, 410-414.	1.6	12
101	Bending vibration measurement on rotors by laser vibrometry. <i>Optics Letters</i> , 1996, 21, 296.	3.3	8
102	<title>Whole-field modal analysis using electronic speckle pattern interferometry</title>. , 1996, 2868, 352.		4
103	Enhanced vibration control of an ultrasonic cutting process. <i>Ultrasonics</i> , 1996, 34, 205-211.	3.9	14
104	Vibration sensitivity in the design of ultrasonic forming dies. <i>Ultrasonics</i> , 1996, 34, 35-41.	3.9	20
105	Ultrasonic cutting â€” a fracture mechanics model. <i>Ultrasonics</i> , 1996, 34, 197-203.	3.9	20
106	An electronic speckle pattern interferometer for two-dimensional strain measurement. <i>Measurement Science and Technology</i> , 1996, 7, 1740-1747.	2.6	5
107	Frequency analysis of an ultrasonically excited thick cylinder. <i>International Journal of Mechanical Sciences</i> , 1990, 32, 205-214.	6.7	9
108	Designing a Hollow Langevin Transducer for Ultrasonic Coring. <i>Applied Mechanics and Materials</i> , 0, 24-25, 65-70.	0.2	9

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109	The Effect of Ultrasonic Excitation in Metal Forming Tests. Applied Mechanics and Materials, 0, 24-25, 311-316.	0.2	17
110	A Strategy for Delivering High Torsionality in Longitudinal-Torsional Ultrasonic Devices. Applied Mechanics and Materials, 0, 70, 339-344.	0.2	15
111	Finite Element Modelling in Ultrasonic Sheet Metal Forming. Advanced Materials Research, 0, 445, 3-8.	0.3	2
112	A Parametric Study for the Design of an Optimized Ultrasonic Percussive Planetary Drill Tool. , 0, .		1