Mikhail G Shapiro

List of Publications by Year
in descending order

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75	5,085	136885	106281
papers	citations	32 h-index	65 g-index

101	101	101	4988
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Infrared light excites cells by changing their electrical capacitance. Nature Communications, 2012, 3, 736.	5.8	501
2	Biogenic gas nanostructures as ultrasonic molecular reporters. Nature Nanotechnology, 2014, 9, 311-316.	15.6	260
3	Acoustic reporter genes for noninvasive imaging of microorganisms in mammalian hosts. Nature, 2018, 553, 86-90.	13.7	258
4	Ultrasonic Neuromodulation Causes Widespread Cortical Activation via an Indirect Auditory Mechanism. Neuron, 2018, 98, 1031-1041.e5.	3.8	248
5	Physical principles for scalable neural recording. Frontiers in Computational Neuroscience, 2013, 7, 137.	1.2	215
6	Tunable thermal bioswitches for in vivo control of microbial therapeutics. Nature Chemical Biology, 2017, 13, 75-80.	3.9	201
7	Genetically encoded reporters for hyperpolarized xenon magnetic resonance imaging. Nature Chemistry, 2014, 6, 629-634.	6.6	186
8	A gut-derived metabolite alters brain activity and anxiety behaviour in mice. Nature, 2022, 602, 647-653.	13.7	179
9	Focused ultrasound excites cortical neurons via mechanosensitive calcium accumulation and ion channel amplification. Nature Communications, 2022, 13, 493.	5.8	152
10	Directed evolution of a magnetic resonance imaging contrast agent for noninvasive imaging of dopamine. Nature Biotechnology, 2010, 28, 264-270.	9.4	151
11	Ultrasound imaging of gene expression in mammalian cells. Science, 2019, 365, 1469-1475.	6.0	145
12	NMR Hyperpolarization Techniques of Gases. Chemistry - A European Journal, 2017, 23, 725-751.	1.7	140
13	Biomolecular Ultrasound and Sonogenetics. Annual Review of Chemical and Biomolecular Engineering, 2018, 9, 229-252.	3.3	137
14	Molecular Engineering of Acoustic Protein Nanostructures. ACS Nano, 2016, 10, 7314-7322.	7.3	124
15	Ultrasound Technologies for Imaging and Modulating Neural Activity. Neuron, 2020, 108, 93-110.	3.8	123
16	Preparation of biogenic gas vesicle nanostructures for use as contrast agents for ultrasound and MRI. Nature Protocols, 2017, 12, 2050-2080.	5.5	116
17	Mapping the microscale origins of magnetic resonance image contrast with subcellular diamond magnetometry. Nature Communications, 2018, 9, 131.	5.8	92
18	Acoustically targeted chemogenetics for the non-invasive control of neural circuits. Nature Biomedical Engineering, 2018, 2, 475-484.	11.6	91

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19	Acoustic biosensors for ultrasound imaging of enzyme activity. Nature Chemical Biology, 2020, 16, 988-996.	3.9	89
20	Acoustically modulated magnetic resonance imaging of gas-filled protein nanostructures. Nature Materials, 2018, 17, 456-463.	13.3	88
21	Ultrasound-controllable engineered bacteria for cancer immunotherapy. Nature Communications, 2022, 13, 1585.	5.8	78
22	Nonlinear ultrasound imaging of nanoscale acoustic biomolecules. Applied Physics Letters, 2017, 110, 073704.	1.5	75
23	Acoustically triggered mechanotherapy using genetically encoded gas vesicles. Nature Nanotechnology, 2021, 16, 1403-1412.	15.6	74
24	Protein Nanoparticles Engineered to Sense Kinase Activity in MRI. Journal of the American Chemical Society, 2009, 131, 2484-2486.	6.6	73
25	InÂVivo Selection of a Computationally Designed SCHEMA AAV Library Yields a Novel Variant for Infection of Adult Neural Stem Cells in the SVZ. Molecular Therapy, 2018, 26, 304-319.	3.7	72
26	Non-invasive imaging using reporter genes altering cellular water permeability. Nature Communications, 2016, 7, 13891.	5.8	71
27	Selective ablation of cancer cells with low intensity pulsed ultrasound. Applied Physics Letters, 2020, 116, .	1.5	71
28	Dynamic imaging with MRI contrast agents: quantitative considerations. Magnetic Resonance Imaging, 2006, 24, 449-462.	1.0	67
29	Single-trial decoding of movement intentions using functional ultrasound neuroimaging. Neuron, 2021, 109, 1554-1566.e4.	3.8	51
30	Acoustic Behavior of Halobacterium salinarum Gas Vesicles in the High-Frequency Range: Experiments and Modeling. Ultrasound in Medicine and Biology, 2017, 43, 1016-1030.	0.7	50
31	Characterizing Single Polymeric and Protein Nanoparticles with Surface Plasmon Resonance Imaging Measurements. ACS Nano, 2017, 11, 7447-7456.	7.3	46
32	Going Deeper: Biomolecular Tools for Acoustic and Magnetic Imaging and Control of Cellular Function. Biochemistry, 2017, 56, 5202-5209.	1.2	45
33	Achieving Spatial and Molecular Specificity with Ultrasound-Targeted Biomolecular Nanotherapeutics. Accounts of Chemical Research, 2019, 52, 2427-2434.	7.6	40
34	Recombinantly expressed gas vesicles as nanoscale contrast agents for ultrasound and hyperpolarized MRI. AICHE Journal, 2018, 64, 2927-2933.	1.8	39
35	Biomolecular Ultrasound Imaging of Phagolysosomal Function. ACS Nano, 2020, 14, 12210-12221.	7.3	38
36	Nanoscale Heat Transfer from Magnetic Nanoparticles and Ferritin in an Alternating Magnetic Field. Biophysical Journal, 2020, 118, 1502-1510.	0.2	37

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37	Ultrasensitive ultrasound imaging of gene expression with signal unmixing. Nature Methods, 2021, 18, 945-952.	9.0	35
38	Biomolecular MRI reporters: Evolution of new mechanisms. Progress in Nuclear Magnetic Resonance Spectroscopy, 2017, 102-103, 32-42.	3.9	31
39	Genetically Encodable Contrast Agents for Optical Coherence Tomography. ACS Nano, 2020, 14, 7823-7831.	7.3	30
40	Genetically encodable materials for non-invasive biological imaging. Nature Materials, 2021, 20, 585-592.	13.3	30
41	Acoustic biomolecules enhance hemodynamic functional ultrasound imaging of neural activity. NeuroImage, 2020, 209, 116467.	2.1	29
42	Proteins, air and water: reporter genes for ultrasound and magnetic resonance imaging. Current Opinion in Chemical Biology, 2018, 45, 57-63.	2.8	28
43	Thermal Mechanisms of Millimeter Wave Stimulation of Excitable Cells. Biophysical Journal, 2013, 104, 2622-2628.	0.2	27
44	Molecular Imaging in Synthetic Biology, and Synthetic Biology in Molecular Imaging. Molecular Imaging and Biology, 2017, 19, 373-378.	1.3	27
45	Nonlinear X-Wave Ultrasound Imaging of Acoustic Biomolecules. Physical Review X, 2018, 8, .	2.8	26
46	Protein Nanostructures Produce Self-Adjusting Hyperpolarized Magnetic Resonance Imaging Contrast through Physical Gas Partitioning. ACS Nano, 2018, 12, 10939-10948.	7.3	26
47	Thermal Control of Engineered T-cells. ACS Synthetic Biology, 2020, 9, 1941-1950.	1.9	26
48	Modular Thermal Control of Protein Dimerization. ACS Synthetic Biology, 2019, 8, 2256-2262.	1.9	25
49	Transcranial focused ultrasound generates skull-conducted shear waves: Computational model and implications for neuromodulation. Applied Physics Letters, 2020, 117, 033702.	1.5	24
50	Localization of microscale devices inÂvivo using addressable transmitters operated as magnetic spins. Nature Biomedical Engineering, 2017, 1, 736-744.	11.6	23
51	Genetically Encoded Phase Contrast Agents for Digital Holographic Microscopy. Nano Letters, 2020, 20, 8127-8134.	4.5	23
52	Measuring gas vesicle dimensions by electron microscopy. Protein Science, 2021, 30, 1081-1086.	3.1	20
53	Unparalleled Control of Neural Activity Using Orthogonal Pharmacogenetics. ACS Chemical Neuroscience, 2012, 3, 619-629.	1.7	17
54	In vivo Biodistribution of Radiolabeled Acoustic Protein Nanostructures. Molecular Imaging and Biology, 2018, 20, 230-239.	1.3	17

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55	Wireless 3D Surgical Navigation and Tracking System With 100Î¼m Accuracy Using Magnetic-Field Gradient-Based Localization. IEEE Transactions on Medical Imaging, 2021, 40, 2066-2079.	5.4	17
56	Spatial Control of Probiotic Bacteria in the Gastrointestinal Tract Assisted by Magnetic Particles. Advanced Materials, 2021, 33, e2007473.	11.1	16
57	The Vibration Behavior of Subâ€Micrometer Gas Vesicles in Response to Acoustic Excitation Determined via Laser Doppler Vibrometry. Advanced Functional Materials, 2020, 30, 2000239.	7.8	15
58	Ultraparamagnetic Cells Formed through Intracellular Oxidation and Chelation of Paramagnetic Iron. Angewandte Chemie - International Edition, 2018, 57, 12385-12389.	7.2	14
59	Ultrafast amplitude modulation for molecular and hemodynamic ultrasound imaging. Applied Physics Letters, 2021, 118, 244102.	1.5	7
60	Correspondence: Reply to â€˜Revisiting the theoretical cell membrane thermal capacitance responseâ€™. Nature Communications, 2017, 8, 1432.	5.8	5
61	Tunable Temperature-Sensitive Transcriptional Activation Based on Lambda Repressor. ACS Synthetic Biology, 2022, 11, 2518-2522.	1.9	5
62	Ultraparamagnetic Cells Formed through Intracellular Oxidation and Chelation of Paramagnetic Iron. Angewandte Chemie, 2018, 130, 12565-12569.	1.6	4
63	20.4 3D Surgical Alignment with 100Âµm Resolution Using Magnetic-Field Gradient-Based Localization. , 2020, , .		4
64	Directed Evolution of Protein-Based Neurotransmitter Sensors for MRI. Methods in Molecular Biology, 2013, 995, 193-205.	0.4	3
65	Mechanics of ultrasonic neuromodulation in a mouse subject. Extreme Mechanics Letters, 2022, 50, 101539.	2.0	3
66	Frontispiece: NMR Hyperpolarization Techniques of Gases. Chemistry - A European Journal, 2017, 23, .	1.7	2
67	Self-assembly of protein superstructures by physical interactions under cytoplasm-like conditions. Biophysical Journal, 2021, 120, 2701-2709.	0.2	2
68	NMR Hyperpolarization Techniques of Gases. Chemistry - A European Journal, 2017, 23, 724-724.	1.7	1
69	Acoustically Targeted Chemogenetics for Noninvasive Control of Neural Circuits. Biological Psychiatry, 2020, 87, S95.	0.7	1
70	Reporter Genes for Ultrasound and MRI. , 2021, , 967-981.		1
71	Biomagnetic Materials: Spatial Control of Probiotic Bacteria in the Gastrointestinal Tract Assisted by Magnetic Particles (Adv. Mater. 17/2021). Advanced Materials, 2021, 33, 2170134.	11.1	1
72	Infrared Light Excites Cells via Transient Changes in Membrane Electrical Capacitance. Biophysical Journal, 2012, 102, 719a.	0.2	0

#	Article	IF	Citations
73	Notice of Removal: Engineering acoustic biomolecules as dynamic molecular sensors for ultrasound. , 2017, , .		0
74	Notice of Removal: Elucidating the biophysical mechanisms of ultrasonic neuromodulation. , 2017, , .		0
75	Biomolecular Engineering of Reporters and Sensors for Noninvasive Imaging of Cellular Function. , 2017, , .		0