

# Omer Oralkan

## List of Publications by Year in descending order

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143  
papers

5,563  
citations

136950

32  
h-index

95266

68  
g-index

145  
all docs

145  
docs citations

145  
times ranked

4931  
citing authors

#	ARTICLE	IF	CITATIONS
1	Transcranial Neuromodulation Array With Imaging Aperture for Simultaneous Multifocus Stimulation in Nonhuman Primates. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 261-272.	3.0	9
2	A Handheld Imaging Probe for Acoustic Angiography With an Ultrawideband Capacitive Micromachined Ultrasonic Transducer (CMUT) Array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 2318-2330.	3.0	8
3	An Ultrasonic Energy Harvesting IC Providing Adjustable Bias Voltage for Pre-Charged CMUT. IEEE Transactions on Biomedical Circuits and Systems, 2022, 16, 842-851.	4.0	4
4	Fabrication of 32 Å– 32 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Arrays on a Borosilicate Glass Substrate With Silicon-Through-Wafer Interconnects Using Sacrificial Release Process. Journal of Microelectromechanical Systems, 2021, 30, 968-979.	2.5	3
5	A Row-Column (RC) Addressed 2-D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array on a Glass Substrate. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 767-776.	3.0	8
6	Entrainment of cerebellar Purkinje cell spiking activity using pulsed ultrasound stimulation. Brain Stimulation, 2021, 14, 598-606.	1.6	17
7	A Wearable Ultrasonic Neurostimulator - Part I: A 1D CMUT Phased Array System for Chronic Implantation in Small Animals. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 692-704.	4.0	12
8	Design and Fabrication of Wideband Air-Coupled Capacitive Micromachined Ultrasonic Transducers With Varying Width Annular-Ring and Spiral Cell Structures. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2749-2759.	3.0	10
9	A Wearable Ultrasonic Neurostimulator Part II: A 2D CMUT Phased Array System With a Flip-Chip Bonded ASIC. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 705-718.	4.0	20
10	Electronic nose system based on a functionalized capacitive micromachined ultrasonic transducer (CMUT) array for selective detection of plant volatiles. Sensors and Actuators B: Chemical, 2021, 341, 130001.	7.8	7
11	A Low-Power Wearable E-Nose System Based on a Capacitive Micromachined Ultrasonic Transducer (CMUT) Array for Indoor VOC Monitoring. IEEE Sensors Journal, 2021, 21, 19684-19696.	4.7	11
12	Soybean Cyst Nematodes Influence Aboveground Plant Volatile Signals Prior to Symptom Development. Frontiers in Plant Science, 2021, 12, 749014.	3.6	3
13	Design and Fabrication of 1D CMUT Arrays for Dual-Mode Acoustic Angiography Applications - Preliminary Results. , 2021, , .		3
14	Design and Fabrication of Single-Element CMUTs for Forming a Transcranial Array for Focused Beam Applications. , 2021, , .		0
15	Design of Pre-Charged CMUTs with a Metal Floating Gate. , 2021, , .		2
16	Guest Editorial Special Issue on Selected Papers From the IEEE Sensors Conference 2018. IEEE Sensors Journal, 2020, 20, 6792-6793.	4.7	0
17	An Improved CMUT Structure Enabling Release and Collapse of the Plate in the Same Tx/Rx Cycle for Dual-Frequency Acoustic Angiography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 2291-2302.	3.0	16
18	Implementing a 32 x 32 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array Incorporating Silicon-Through-Glass-Via (Si-TGV) Interconnects. , 2020, , .		1

#	ARTICLE	IF	CITATIONS
19	Fabrication of 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Arrays on Insulating Substrates With Through-Wafer Interconnects Using Sacrificial Release Process. Journal of Microelectromechanical Systems, 2020, 29, 553-561.	2.5	18
20	Editorsâ€™ Choiceâ€™Critical Reviewâ€™A Critical Review of Solid State Gas Sensors. Journal of the Electrochemical Society, 2020, 167, 037570.	2.9	112
21	An Ultra-Wideband Capacitive Micromachined Ultrasonic Transducer (CMUT) Array for Acoustic Angiography: Preliminary Results. , 2020, , .		2
22	Forming an Annular Array from 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array Elements by Using a Metal Redistribution Layer. , 2020, , .		1
23	A 2D Ultrasonic Transmit Phased Array Based on a 32x32 CMUT Array Flip-Chip Bonded to an ASIC for Neural Stimulation. , 2020, , .		3
24	A Low-Power Wireless Multichannel Gas Sensing System Based on a Capacitive Micromachined Ultrasonic Transducer (CMUT) Array. IEEE Internet of Things Journal, 2019, 6, 831-843.	8.7	39
25	Ultrasound Transmission through a Flexible Printed Circuit Board Bonded to the Front Side of a Capacitive Micromachined Ultrasonic Transducer Array: Feasibility Study. , 2019, , .		0
26	Ultrasound Transmission through a Flexible Printed Circuit Board Bonded to the Front Side of a Capacitive Micromachined Ultrasonic Transducer Array: Feasibility Study. , 2019, , .		0
27	A Sub-Millimeter Lateral Resolution Ultrasonic Beamforming System for Brain Stimulation in Behaving Animals. , 2019, 2019, 6462-6465.		8
28	Ultrasound-Based Post-Endovascular Aneurysm Repair (EVAR) Monitoring Device. , 2019, , .		1
29	A 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array with Through-Glass-Via Interconnects Fabricated Using Sacrificial Etching Process. , 2019, , .		1
30	Optimizing the energy balance to achieve autonomous self-powering for vigilant health and IoT applications. Journal of Physics: Conference Series, 2019, 1407, 012001.	0.4	5
31	Anodically Bonded CMUT with a Two-Layer Bottom Electrode for Increased Reliability and Reduced Parasitic Capacitance. , 2019, , .		0
32	Ultrasound-Based Post-Endovascular Aneurysm Repair (EVAR) Monitoring Device. , 2019, , .		0
33	An FPGA-Based Backend System for Intravascular Photoacoustic and Ultrasound Imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 45-56.	3.0	10
34	A Fast-Switching (1.35- $\mu\text{s}$ ) Low-Control-Voltage (2.5-V) MEMS T/R Switch Monolithically Integrated With a Capacitive Micromachined Ultrasonic Transducer. Journal of Microelectromechanical Systems, 2018, 27, 190-200.	2.5	6
35	Backward-Mode Photoacoustic Imaging Using Illumination Through a CMUT With Improved Transparency. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 85-94.	3.0	25
36	Design and Fabrication of High-Frequency Ultra-Wideband 1D CMUT Arrays for Acoustic Angiography Applications - Preliminary Results. , 2018, , .		5

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37	A Row-Column (RC) Addressed 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array on a Glass Substrate: Preliminary Results. , 2018, 2018, 1-4.		2
38	Towards an Untethered Ultrasound Beamforming System for Brain Stimulation in Behaving Animals. , 2018, 2018, 1596-1599.		6
39	Design and Implementation of Wideband CMUTs for Airborne Applications - Preliminary Results. , 2018, , .		2
40	Multi-wavelength photoacoustic imaging for monitoring lesion formation during high-intensity focused ultrasound therapy. Proceedings of SPIE, 2017, , .	0.8	1
41	Fabrication of Vacuum-Sealed Capacitive Micromachined Ultrasonic Transducers With Through-Glass-Via Interconnects Using Anodic Bonding. Journal of Microelectromechanical Systems, 2017, 26, 226-234.	2.5	26
42	A high-frequency and high-frame-rate ultrasound imaging system design on an FPGA evaluation board for capacitive micromachined ultrasonic transducer arrays. , 2017, , .		1
43	Improved CMUT structure and method of operation for dual-frequency acoustic angiography. , 2017, , .		2
44	Integration of a dual-mode catheter for ultrasound image guidance and HIFU ablation using a 2-D CMUT array. , 2017, , .		7
45	A high-frequency and high-frame-rate ultrasound imaging system design for capacitive micromachined ultrasonic transducer arrays on an FPGA evaluation board. , 2017, , .		1
46	Notice of Removal: Integration of percutaneous cardiac catheter for HIFU ablation and image guidance. , 2017, , .		0
47	Notice of Removal: Adaptation of the acoustic angiography technique for use with a capacitive micromachined ultrasound transducer (CMUT). , 2017, , .		0
48	A handheld 1D transparent CMUT array probe for photoacoustic imaging. , 2017, , .		1
49	A front-end integrated circuit for a 2D capacitive micromachined ultrasound transducer (CMUT) array for a noninvasive neural interface to the retina. , 2017, , .		0
50	An optically transparent air-coupled capacitive micromachined ultrasonic transducer (CMUT) fabricated using adhesive bonding. , 2017, , .		1
51	Improved CMUT structure and method of operation for dual-frequency acoustic angiography. , 2017, , .		0
52	A front-end integrated circuit for a 2D capacitive micromachined ultrasound transducer (CMUT) array as a noninvasive neural stimulator. , 2017, , .		4
53	An optically transparent capacitive micromachined ultrasonic transducer (CMUT) fabricated using SU-8 or BCB adhesive wafer bonding. , 2017, , .		6
54	A handheld 1D transparent CMUT array probe for photoacoustic imaging: Preliminary results. , 2017, , .		4

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55	A MEMS T/R switch embedded in CMUT structure for ultrasound imaging frontends. , 2016, , .		4
56	2D CMUT array based ultrasonic micromanipulation platform. , 2016, , .		5
57	CMUTs on glass with ITO bottom electrodes for improved transparency. , 2016, , .		2
58	Photoacoustic-imaging-based temperature monitoring for high-intensity focused ultrasound therapy. , 2016, 2016, 3235-3238.		10
59	Wideband acoustic activation and detection of droplet vaporization events using a capacitive micromachined ultrasonic transducer. Journal of the Acoustical Society of America, 2016, 139, 3193-3198.	1.1	11
60	Low-Power Wearable Systems for Continuous Monitoring of Environment and Health for Chronic Respiratory Disease. IEEE Journal of Biomedical and Health Informatics, 2016, 20, 1251-1264.	6.3	159
61	A three-mask process for fabricating vacuum-sealed capacitive micromachined ultrasonic transducers using anodic bonding. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2015, 62, 972-982.	3.0	68
62	Flexible Technologies for Self-Powered Wearable Health and Environmental Sensing. Proceedings of the IEEE, 2015, 103, 665-681.	21.3	166
63	Design of high-frequency broadband CMUT arrays. , 2015, , .		3
64	Fabrication of capacitive micromachined ultrasonic transducers with through-glass-via interconnects. , 2015, , .		5
65	Dual-mode integrated circuit for imaging and HIFU with 2-D CMUT arrays. , 2015, , .		16
66	An ultrasound-based noninvasive neural interface to the retina. , 2014, , .		2
67	Fabrication of anodically bonded capacitive micromachined ultrasonic transducers with vacuum-sealed cavities. , 2014, , .		5
68	A Multichannel Oscillator for a Resonant Chemical Sensor System. IEEE Transactions on Industrial Electronics, 2014, 61, 5632-5640.	7.9	36
69	Innovations in Ultrasound Instrumentation for Image Guidance. , 2014, , 163-171.		0
70	3D volumetric ultrasound imaging with a 32&#x00D7;32 CMUT array integrated with front-end ICs using flip-chip bonding technology. , 2013, , .		19
71	Precise Neural Stimulation in the Retina Using Focused Ultrasound. Journal of Neuroscience, 2013, 33, 4550-4560.	3.6	243
72	GPU-Based Real-Time Volumetric Ultrasound Image Reconstruction for a Ring Array. IEEE Transactions on Medical Imaging, 2013, 32, 1258-1264.	8.9	25

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73	Integrated Circuits for Volumetric Ultrasound Imaging With 2-D CMUT Arrays. IEEE Transactions on Biomedical Circuits and Systems, 2013, 7, 796-804.	4.0	82
74	A comparison between conventional and collapse-mode capacitive micromachined ultrasonic transducers in 10-MHz 1-D arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 1245-1255.	3.0	40
75	Photoacoustic Imaging of the Bladder. Journal of Ultrasound in Medicine, 2013, 32, 1245-1250.	1.7	12
76	A 32x32 integrated CMUT array for volumetric ultrasound imaging. , 2013, , .		7
77	GPU-based real-time imaging software suite for medical ultrasound. , 2013, , .		9
78	Dynamic Response of Model Lipid Membranes to Ultrasonic Radiation Force. PLoS ONE, 2013, 8, e77115.	2.5	69
79	Photoacoustic imaging using a 9F microLinear CMUT ICE catheter. , 2012, , .		9
80	First In Vivo Use of a Capacitive Micromachined Ultrasound Transducer Array-Based Imaging and Ablation Catheter. Journal of Ultrasound in Medicine, 2012, 31, 247-256.	1.7	25
81	Volumetric real-time imaging using a CMUT ring array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 1201-1211.	3.0	33
82	Ultrasound-Induced Currents in Planar Lipid Blayers: Origins and Potential Physiological Significance. Biophysical Journal, 2012, 102, 34a.	0.5	0
83	Deep Tissue Photoacoustic Imaging Using a Miniaturized 2-D Capacitive Micromachined Ultrasonic Transducer Array. IEEE Transactions on Biomedical Engineering, 2012, 59, 1199-1204.	4.2	73
84	Miniaturized, wearable, ultrasound probe for on-demand ultrasound screening. , 2011, , .		6
85	Real-time volumetric imaging system for CMUT arrays. , 2011, , .		9
86	Chemical Vapor Detection Using a Capacitive Micromachined Ultrasonic Transducer. Analytical Chemistry, 2011, 83, 9314-9320.	6.5	60
87	Capacitive micromachined ultrasonic transducers for medical imaging and therapy. Journal of Micromechanics and Microengineering, 2011, 21, 054004.	2.6	240
88	The feasibility of using thermal strain imaging to regulate energy delivery during intracardiac radio-frequency ablation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 1406-1417.	3.0	19
89	Capacitive micromachined ultrasonic transducer (CMUT) as a chemical sensor for DMMP detection. Sensors and Actuators B: Chemical, 2011, 160, 1120-1127.	7.8	59
90	Volumetric intracardiac imaging using a fully integrated CMUT ring array: Recent developments. , 2011, , .		4

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91	Regulating energy delivery during intracardiac radiofrequency ablation using thermal strain imaging. , 2011, , .		0
92	Miniaturized ultrasound imaging probes enabled by CMUT arrays with integrated frontend electronic circuits. , 2010, 2010, 5987-90.		6
93	Design optimization for a 2-D sparse transducer array for 3-D ultrasound imaging. , 2010, 2010, 1928-1931.		20
94	Simulating capacitive micromachined ultrasonic transducers (CMUTs) using field II. , 2010, , .		4
95	3-D Deep penetration photoacoustic imaging with a 2-D CMUT array. , 2010, 2010, 375-377.		8
96	Ultrasound compatible RF ablation electrode design for catheter based guidance of RF ablation &#x2014; In vivo results with thermal strain imaging. , 2010, , .		2
97	Monitoring radiofrequency catheter ablation using thermal strain imaging. , 2010, , .		2
98	Forward-looking intracardiac imaging catheters using fully integrated CMUT arrays. , 2010, , .		17
99	Zero-bias resonant sensor with an oxide-nitride layer as charge trap. , 2010, , .		8
100	Experimental Studies With a 9F Forward-Looking Intracardiac Imaging and Ablation Catheter. Journal of Ultrasound in Medicine, 2009, 28, 207-215.	1.7	21
101	Forward-looking volumetric intracardiac imaging using a fully integrated CMUT ring array. , 2009, , .		31
102	A family of intracardiac ultrasound imaging devices designed for guidance of electrophysiology ablation procedures. , 2009, 2009, 1913-7.		4
103	Enhanced sensitivity carbon nanotubes as targeted photoacoustic molecular imaging agents. Proceedings of SPIE, 2009, , .	0.8	1
104	Photoacoustic molecular imaging using single walled carbon nanotubes in living mice. , 2009, , .		4
105	Minimally Redundant 2-D Array Designs for 3-D Medical Ultrasound Imaging. IEEE Transactions on Medical Imaging, 2009, 28, 1051-1061.	8.9	131
106	Wafer-bonded 2-D CMUT arrays incorporating through-wafer trench-isolated interconnects with a supporting frame. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 182-192.	3.0	33
107	Three-dimensional photoacoustic imaging using a two-dimensional CMUT array. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 2411-2419.	3.0	87
108	An integrated circuit with transmit beamforming flip-chip bonded to a 2-D CMUT array for 3-D ultrasound imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 2145-2156.	3.0	133

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109	Next-gen ultrasound. IEEE Spectrum, 2009, 46, 44-54.	0.7	51
110	Multi-row linear cMUT array using cMUTs and multiplexing electronics. , 2009, , .		17
111	Carbon nanotubes as photoacoustic molecular imaging agents in living mice. Nature Nanotechnology, 2008, 3, 557-562.	31.5	1,215
112	Integration of 2D CMUT arrays with front-end electronics for volumetric ultrasound imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 327-342.	3.0	193
113	CMUT as a chemical sensor for DMMP detection. , 2008, , .		23
114	Fabrication of Flexible Transducer Arrays With Through-Wafer Electrical Interconnects Based on Trench Refilling With PDMS. Journal of Microelectromechanical Systems, 2008, 17, 446-452.	2.5	77
115	Forward-looking intracardiac ultrasound imaging using a 1-D CMUT array integrated with custom front-end electronics. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 2651-2660.	3.0	38
116	Capacitive micromachined ultrasonic transducer as a chemical sensor. , 2008, , .		3
117	The effect of parallelism of CMUT cells on phase noise for chem/bio sensor applications. , 2008, , .		5
118	Investigating large 2D arrays for photoacoustic and acoustic imaging using CMUT technology. , 2008, , .		2
119	Design of HIFU CMUT Arrays for Treatment of Liver and Renal Cancer. AIP Conference Proceedings, 2007, , .	0.4	14
120	Flexible transducer arrays with through-wafer electrical interconnects based on trench refilling with PDMS. , 2007, , .		5
121	Finite element modeling and experimental characterization of crosstalk in 1-D CMUT arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2007, 54, 418-430.	3.0	68
122	Integration of trench-isolated through-wafer interconnects with 2d capacitive micromachined ultrasonic transducer arrays. Sensors and Actuators A: Physical, 2007, 138, 221-229.	4.1	34
123	Experimental characterization of collapse-mode CMUT operation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2006, 53, 1513-1523.	3.0	67
124	Capacitive micromachined ultrasonic transducers (CMUTs) for photoacoustic imaging. , 2006, , .		15
125	Beamforming and hardware design for a multichannel front-end integrated circuit for real-time 3D catheter-based ultrasonic imaging. , 2006, 6147, 89.		12
126	Capacitive Micromachined Ultrasonic Transducer Arrays for Integrated Diagnostic/Therapeutic Catheters. AIP Conference Proceedings, 2006, , .	0.4	10



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127	3-D ultrasound imaging using a forward-looking CMUT ring array for intravascular/intracardiac applications. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2006, 53, 1202-1211.	3.0	109
128	Two-dimensional capacitive micromachined ultrasonic transducer (CMUT) arrays for a miniature integrated volumetric ultrasonic imaging system. , 2005, , .		13
129	Capacitive micromachined ultrasonic transducer technology for medical ultrasound imaging. , 2005, , .		2
130	High-frequency CMUT arrays for high-resolution medical imaging. , 2005, 5750, 87.		21
131	A miniature real-time volumetric ultrasound imaging system. , 2005, 5750, 26.		9
132	Coherent array imaging using phased subarrays. Part II: simulations and experimental results. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 51-64.	3.0	22
133	Capacitive micromachined ultrasonic transducers: fabrication technology. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 2242-2258.	3.0	212
134	Dynamic analysis of capacitive micromachined ultrasonic transducers. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 2270-2275.	3.0	29
135	Capacitive micromachined ultrasonic transducer design for high power transmission. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 326-339.	3.0	67
136	Volumetric ultrasound imaging using 2-D CMUT arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2003, 50, 1581-1594.	3.0	161
137	Capacitive micromachined ultrasonic transducers: next-generation arrays for acoustic imaging?. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2002, 49, 1596-1610.	3.0	413
138	Medical imaging using capacitive micromachined ultrasonic transducer arrays. Ultrasonics, 2002, 40, 471-476.	3.9	41
139	An ultrasonic volumetric scanner for image-guided surgery. International Congress Series, 2001, 1230, 190-196.	0.2	0
140	Silicon Micromachined Ultrasonic Transducers. Japanese Journal of Applied Physics, 2000, 39, 2883-2887.	1.5	54
141	Electric breakdowns and breakdown mechanisms in ultra-thin silicon oxides. Microelectronics Reliability, 1999, 39, 171-179.	1.7	12
142	Differentiation Between Electric Breakdowns and Dielectric Breakdown in Thin Silicon Oxides. Journal of the Electrochemical Society, 1998, 145, 1033-1038.	2.9	35
143	Nonuniqueness of time-dependent-dielectric-breakdown distributions. Applied Physics Letters, 1997, 71, 3682-3684.	3.3	33