F Levent Degertekin

List of Publications by Year
in descending order

89 papers	1,167 citations	471509 17 h-index	454955 30 g-index
89 all docs	89 docs citations	89 times ranked	924 citing authors

#	Article	IF	Citations
1	Single-chip CMUT-on-CMOS front-end system for real-time volumetric IVUS and ICE imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2014, 61, 239-250.	3.0	146
2	Annular-ring CMUT arrays for forward-looking IVUS: transducer characterization and imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2006, 53, 474-482.	3.0	121
3	Integrated optical interferometric detection method for micromachined capacitive acoustic transducers. Applied Physics Letters, 2002, 80, 3859-3861.	3.3	71
4	Monolithic CMUT-on-CMOS Integration for Intravascular Ultrasound Applications. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 2659-2667.	3.0	68
5	Towards controlled drug delivery in brain tumors with microbubble-enhanced focused ultrasound. Advanced Drug Delivery Reviews, 2022, 180, 114043.	13.7	41
6	A large-signal model for CMUT arrays with arbitrary membrane geometry operating in non-collapsed mode. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 2426-2439.	3.0	39
7	Integrated Optical Displacement Detection and Electrostatic Actuation for Directional Optical Microphones With Micromachined Biomimetic Diaphragms. IEEE Sensors Journal, 2009, 9, 1933-1941.	4.7	37
8	An Analog Integrated Circuit Beamformer for High-Frequency Medical Ultrasound Imaging. IEEE Transactions on Biomedical Circuits and Systems, 2012, 6, 454-467.	4.0	37
9	Harmonic reduction in capacitive micromachined ultrasonic transducers by gap feedback linearization. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 50-59.	3.0	36
10	Enhanced intracellular delivery via coordinated acoustically driven shear mechanoporation and electrophoretic insertion. Scientific Reports, 2018, 8, 3727.	3.3	32
11	What controls dynamics of droplet shape evolution upon impingement on a solid surface?. AICHE Journal, 2013, 59, 3071-3082.	3.6	29
12	Direct Digital Demultiplexing of Analog TDM Signals for Cable Reduction in Ultrasound Imaging Catheters. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2016, 63, 1078-1085.	3.0	25
13	Lattice Boltzmann simulations of multiple-droplet interaction dynamics. Physical Review E, 2014, 89, 033311.	2.1	24
14	A Reduced-Wire ICE Catheter ASIC With Tx Beamforming and Rx Time-Division Multiplexing. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1246-1255.	4.0	24
15	Thermal-mechanical-noise-based CMUT characterization and sensing. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 1267-1275.	3.0	18
16	A nonlinear lumped model for ultrasound systems using CMUT arrays. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2015, 62, 1865-1879.	3.0	17
17	A capacitive ultrasonic transducer based on parametric resonance. Applied Physics Letters, 2017, 111, 043503.	3.3	17
18	A resonant CMUT sensor for fluid applications. , 2009, , .		16

#	Article	IF	Citations
19	Real-time imaging system using a 12-MHz forward-looking catheter with single chip CMUT-on-CMOS array. , 2015, , .		16
20	Highly Integrated Guidewire Ultrasound Imaging System-on-a-Chip. IEEE Journal of Solid-State Circuits, 2020, 55, 1310-1323.	5.4	15
21	Single chip CMUT arrays with integrated CMOS electronics: Fabrication process development and experimental results. , 2008, , .		14
22	A 1.5-mm diameter single-chip CMOS front-end system with transmit-receive capability for CMUT-on-CMOS forward-looking IVUS. , 2011, , .		14
23	Modal and transient analysis of membrane acoustic metasurfaces. Journal of Applied Physics, 2015, 117, .	2.5	14
24	Analysis and Design of Capacitive Parametric Ultrasonic Transducers for Efficient Ultrasonic Power Transfer Based on a 1-D Lumped Model. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 2103-2112.	3.0	14
25	Front-end CMOS electronics for monolithic integration with CMUT arrays: Circuit design and initial experimental results. , 2008, , .		13
26	Supply-Doubled Pulse-Shaping High Voltage Pulser for CMUT Arrays. IEEE Transactions on Circuits and Systems II: Express Briefs, 2018, 65, 306-310.	3.0	13
27	Acousto-Optic Catheter Tracking Sensor for Interventional MRI Procedures. IEEE Transactions on Biomedical Engineering, 2019, 66, 1148-1154.	4.2	13
28	Capacitive micromachined ultrasonic transducer arrays as tunable acoustic metamaterials. Applied Physics Letters, 2014, 104, 051914.	3.3	12
29	A Power-Efficient Bridge Readout Circuit for Implantable, Wearable, and IoT Applications. IEEE Sensors Journal, 2020, 20, 9955-9962.	4.7	12
30	A tunable analog delay element for high-frequency dynamic beamforming. , 2009, , .		11
31	Low temperature CMUT fabrication process with dielectric lift-off membrane support for improved reliability. Journal of Micromechanics and Microengineering, 2018, 28, 085006.	2.6	11
32	Realâ€time device tracking under MRI using an acoustoâ€optic active marker. Magnetic Resonance in Medicine, 2021, 85, 2904-2914.	3.0	11
33	Micromachined Ultrasonic Print-Head for Deposition of High-Viscosity Materials. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2010, 132, .	2.2	9
34	Design, modeling and characterization of a 35MHz 1-D CMUT phased array. , 2013, , .		9
35	Design of frequency-division multiplexing front-end receiver electronics for CMUT-on-CMOS based intracardiac echocardiography. , 2014, , .		9
36	Analysis and Design of High-Frequency 1-D CMUT Imaging Arrays in Noncollapsed Mode. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 382-393.	3.0	9

#	Article	IF	Citations
37	Sensitivity and phase response of FBG based acousto-optic sensors for real-time MRI applications. OSA Continuum, 2020, 3, 447.	1.8	9
38	Time-division multiplexing for cable reduction in ultrasound imaging catheters. , 2015, , .		8
39	Single-Chip Reduced-Wire CMUT-on-CMOS System for Intracardiac Echocardiography. , 2018, , .		8
40	Single-chip reduced-wire active catheter system with programmable transmit beamforming and receive time-division multiplexing for intracardiac echocardiography. , 2018, , .		8
41	Active Control of Microinterferometers for Low-Noise Parallel Operation. IEEE/ASME Transactions on Mechatronics, 2010, 15, 1-8.	5.8	7
42	Transmit optimization of CMUTs in non-collapse mode using a transient array model. , 2012, , .		7
43	Model based drive signal optimization of CMUTs in non-collapse operation and its experimental validation. , 2013, , .		7
44	Thermal mechanical noise based characterization of CMUTs using monolithically integrated low noise receiver electronics. , 2010, , .		6
45	Analysis of Negative Capacitance-Based Broadband Impedance Matching for CMUTs. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 3042-3052.	3.0	6
46	Co-array optimization of CMUT arrays for Forward-Looking IVUS. , 2009, , .		5
47	Droplet impingement dynamics in ink-jet deposition. Virtual and Physical Prototyping, 2012, 7, 49-64.	10.4	5
48	Analytical-Finite Element hybrid model for CMUT arrays with arbitrary membrane geometry. , 2012, , .		5
49	A biologically inspired silicon differential microphone with active Q control and optical sensing. Proceedings of Meetings on Acoustics, 2013, , .	0.3	5
50	An Analysis Method for Capacitive Micromachined Ultrasound Transducer (CMUT) Energy Conversion during Large Signal Operation. Sensors, 2019, 19, 876.	3.8	5
51	A first experimental verification of micromachined capacitive Lamb wave transducers. , 0, , .		3
52	Micromachined capacitive transducer arrays for intravascular ultrasound imaging. , 0, , .		3
53	Sensing physical fluid properties with CMUT arrays. , 2009, , .		3
54	An analog beamformer for integrated high-frequency medical ultrasound imaging. , 2011, , .		3

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55	Experimental study of dual-ring CMUT array optimization for forward-looking IVUS. , 2011, , .		3
56	Front-end electronics for cable reduction in Intracardiac Echocardiography (ICE) catheters. , 2016, , .		3
57	Microscale systems based on ultrasonic MEMS â€" CMOS integration. , 2017, , .		3
58	FBG Based Electric Field Sensor for MRI Safety. , 2020, , .		3
59	An Ultrasound Imaging Front-End System-on-a-Chip with Element-Level Impedance Matching for Acoustic Reflectivity Reduction. , 2021, , .		3
60	Novel Atomic Force Microscope Probes with Integrated Electrostatic Actuation and Optical Detection. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	2
61	Accurate modeling of capacitive micromachined ultrasonic transducers in pulse-echo operation. , 2008, , .		2
62	Scanning micro-interferometer array with sub-picometer resolution for MEMS inspection. , 2008, , .		2
63	Investigation of dual mode side and forward looking IVUS using a dual ring CMUT-on-CMOS array. , 2012, , .		2
64	3-D real-time volumetric imaging using 20 MHz 1.5-mm diameter single-chip CMUT-on-CMOS array. , 2012, , .		2
65	On-chip reduced wire transceiver for high frequency CMUT imaging system. , 2015, , .		2
66	Embedded elastic wave mirrors for enhanced energy harvesting. , 2016, , .		2
67	A feasibility study for MRI guided CMUT-based intracardiac echocardiography catheters. , 2017, , .		2
68	Toward an Energy-Efficient Bridge-to-Digital Intracranial Pressure Sensing Interface. , 2018, , .		2
69	Supply-Inverted Bipolar Pulser and Tx/Rx Switch for CMUTs Above the Process Limit for High Pressure Pulse Generation. IEEE Sensors Journal, 2019, 19, 12050-12058.	4.7	2
70	An Adaptive Element-Level Impedance-Matched ASIC With Improved Acoustic Reflectivity for Medical Ultrasound Imaging. IEEE Transactions on Biomedical Circuits and Systems, 2022, 16, 492-501.	4.0	2
71	Actuation of atomic force microscope cantilevers by acoustic radiation pressure. , 0, , .		1
72	Simulated annealing based optimization of dual-ring arrays for forward-looking IVUS and ICE imaging. , 2010, , .		1

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73	Modeling and characterization of thin film coatings for high frequency CMUT annular arrays. , 2011, , .		1
74	Passive ultrasonics using sub-Nyquist sampling of high-frequency thermal-mechanical noise. Journal of the Acoustical Society of America, 2014, 135, EL364-EL370.	1.1	1
75	Simulation of absolute backscattering coefficient in Field II. , 2014, , .		1
76	Characterization of improved Capacitive Micromachined Ultrasonic Transducers (CMUTS) using ALD high-Κ dielectric isolation. , 2014, , .		1
77	A feasibility study for MRI guided CMUT-based intracardiac echocardiography catheters. , 2017, , .		1
78	Passive Vibration Control and Tunable Damping of MEMS Resonators via Electrical Autoparametric Resonance. Journal of Microelectromechanical Systems, 2021, , 1-10.	2.5	1
79	Dual mode CMUT Array Operation for Skull Imaging and Passive Acoustic Monitoring in Transcranial Ultrasound. , 2021, , .		1
80	Optimization of High Frequency CMUT Array Geometry for Guidewire IVUS. , 2021, , .		1
81	Integrated low voltage and low power CMOS circuits for optical sensing of diffraction based micromachined microphone. , 2010, , .		0
82	An annular CMUT array beamforming system for high-frequency side looking IVUS imaging. , 2010, , .		0
83	Gap feedback linearization of capacitive micromachined ultrasonic transducers for harmonic imaging. , 2011, , .		0
84	Improved FL-IVUS imaging with low voltage single-chip CMUT-on-CMOS array using temporally coded excitation. , 2014, , .		0
85	Beyond supply-voltage bootstrapped pulser for driving CMUT arrays in ultrasound imaging. , 2017, , .		0
86	Notice of Removal: Supply-inverted bipolar pulser and Tx/Rx switch for CMUTs capable of tolerating voltage levels above process limit. , 2017, , .		0
87	Notice of Removal: A low temperature sacrificial layer based CMUT fabrication process for improved reliability. , 2017, , .		0
88	Experimental Verification and Design Guidelines for Efficient Ultrasonic Power Transfer Using Capacitive Parametric Ultrasonic Transducers. , 2020, , .		0
89	Acousto-optic Modulator Based Magnetic Field Sensor Using Ï€-Phase Shifted Fiber Bragg Grating. , 2021, , .		0