2024 IEEE Ultrasonics, Ferroelectrics, and Frequency Control Joint Symposium (UFFC-JS 2024)

Taipei, Taiwan
22-26 September 2024

Pages 1-493

IEEE Catalog Number: CFP24ISA-POD
ISBN: 979-8-3503-7191-8

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP24ISA-POD
ISBN (Print-On-Demand):	979-8-3503-7191-8
ISBN (Online):	979-8-3503-7190-1
ISSN:	1099-4734

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings .com

TABLE OF CONTENTS

Area-Efficient and Coupling Noise Suppressive Voltage-Controlled Oscillator 1
Sheng-Lyang Jang, Wei-Che Lin, Jiun-Yu Sung, Mao-Hsiu Hsu, Wen-Cheng Lai

Analytical Design Optimization of Standing Wave Ultrasonic Motors 5
Yichao Ma, Xiong Liu, Than Zaw Myint, Brendon Leong

Impact of In-Plane Diffraction in TC-SAW Resonator 9
Yiming Liu, Yiwen He, Ting Wu, Fangyi Li, Jing-Fu Bao, Ken-Ya Hashimoto

Quantitative Lung Ultrasound Spectroscopy Classification Performance in Differentiating CPE, Pneumonia, and PF, a Comparative Classifiers' Analysis 13
Federico Mento, Mattia Perpenti, Giuliana Barcellona, Tiziano Perrone, Libertario Demi

Acquisition and Processing of V-Wave Ultrasound Beams for Fast Frame Rate 17
Chuck Peng, Jun Tang

Efficient Deep Model-Based Optoacoustic Image Reconstruction 22
Christoph Dehner, Guillaume Zahnd

Shear Wave Elastography with High Precision and Relaxed Frame Rate Utilizing 2D Radial Basis Function Reconstruction 26
Sajjad Afrakhteh, Libertario Demi

A Novel High Frame Rate and High Contrast Coherent Plane Wave Compounding Approach Utilizing Euclidean Distance Transform 29
Sajjad Afrakhteh, Libertario Demi

Novel Quantitative Lung Ultrasound Spectroscopy Approach for Diseases Classification 33
Mattia Perpenti, Federico Mento, Giovanni Pierro, Alessandro Perrotta, Andrea Smargiassi, Riccardo Inchingolo, Libertario Demi

13 GHz Acoustic Resonator with Q of 600 in High-Quality Thin-Film Aluminum Nitride 37
Sinwoo Cho, Omar A. Barrera, Hrithik Agrawal, Michael Liao, Ellie Y. Wang, Vakhtang Chulukhadze, Jack Kramer, Joshua Campbell, Tzu-Hsuan Hsu, Ian Anderson, Mark S. Goorsky, Ruochen Lu

Design and Implementation of a Multifunctional FPGA-Based System for Intravascular Ultrasound Imaging and Therapy 41
Amauri A. Assef, Joaquim M. Maia, Paula L S. De Moura, Phuong Vu, Adeoye Olomodosi, Stephan Strassle Rojas, Brooks D. Lindsey

3.3-GHz Voltage-Controlled Oscillator with 2.13% Tuning Range Based on A1-Mode LiNbO3 Lamb-Wave Resonator 45
Xinhui Cui, Kai Yang, Ying Yuan, Jingsong Liu, Chengjie Zuo

Assessment of Time Synchronization Error Using Different GNSS Clock Products 49
Tzu-Pang Tseng, Pei-Jung Kuo, Yi-Hsuan Tsai, Wen-Hung Tseng, Kun-Lin Chen, Cheng-Yung Huang, Wen-Hao Yeh, Yung-Fu Tsai

Towards sub-100Hz Super-Resolution Imaging Through a Novel Bi-Directional Interpolation Technique 54
Giulia Tuccio, Sajjad Afrakhteh, Libertario Demi

Ultrasound Localization Microscopy Imaging by Monodisperse Microbubble Uncoupling: First Experimental Study 58
Giulia Tuccio, Lisa Te Winkel, Corinne Bruggeman, Wim Van Hoeve, Libertario Demi

A Deep Learning Framework for Light Propagation Modelling for Quantitative Photoacoustics 62
Mengjie Shi, Tom Vercauteren, Wenfeng Xia

Modeling and Simulation of a Piezoelectric-Capacitive Hybrid Micromachined Ultrasonic Transducer 66
Yan Wang, Ning Lv, Leming He, Weijiang Xu, Jia Zhou, Junyan Ren

Measurement of Instantaneous Velocity Vector of Scatterers by Transmitting a Dual-Chirp Plane Wave 70
Sota Ozaki, Norio Tagawa

2D Echocardiography Image Segmentation Via Patch-Based Generative Adversarial Network 74
Noreen Fatima, Sajjad Afrakhteh, Libertario Demi

Feasibility of Polyvinyl Chloride as a Breast Ultrasound Phantom 78
Wadhhah Aldehani, Sarah Savaridas, Luigi Manfredi, Zhihong Huang

Temperature Study of Standing Wave Ultrasonic Motor 81
Than Zaw Myint, Xiong Liu, Barish Chakravarty, Yichao Ma, June Christian Ang, Brendon Leong

Optimization of an Additive Manufacturing Process Using Ultrasound 85
Shafaq Zia, Johan E. Carlson, Pia Åkerfeldt

Integrated Analysis of Material Properties of Additively Manufactured 316L Steel Using Ultrasound Measurements 89
Shafaq Zia, Johan E. Carlson, Pia Åkerfeldt, Ludovic Hienne

11.6-GHz SV-SAW Resonator Based on Y128° LiNbO3/SiO2/Si Substrate 93
Kai Yang, Jie Chen, Chengjie Zuo

Super-Resolution Mapping of Wave Field Using a Receiver from a Far Distance 97
Jian-Yu Lu

Investigation of Structural, Pyroelectric and Energy Storage Properties of Lead-Free Ba0.85Sr0.15Zr0.09Sn0.01Ti0.9O3 Ceramics 101
Mehak Aggarwal, Gyaneshwar Sharma, Arun Kumar Singh, Sanjeev Kumar

Environmentally Friendly Multiferroic Properties of 0.8(Ba0.85Ca0.15Zr0.1Ti0.9O3) - 0.2(CoFe2O4) Particulate Composite 105
Pankhuri Bansal, Arun Kumar Singh, Sanjeev Kumar

Investigation of Dielectric, Ferroelectric and Piezoelectric Properties of Sm & Eu Doped Pb(Mg1/3Nb2/3)0.71Ti0.29O3 Ceramics 109
Shubham Modgil, O. P. Thakur, Sanjeev Kumar, Arun Kumar Singh

Effect of Quenching on Dielectric and Ferroelectric Properties of Sm3+ Doped BiFeO3-BaTiO3 Solid Solution 114
Mukul Kumar, Arun Kumar Singh, A R James, Sanjeev Kumar

Breast Tumor Image Synthesis Based on Diffusion Probabilistic Model 118
Seok-Hwan Oh, Guil Jung, Myeonggee Kim, Young-Min Kim, Hyeon-Jik Lee, Sang-Yun Kim, Hyuk-Sool Kwon, Hyeon-Min Bae

Cardiac Anatomy-Ware Echocardiography Wall Motion Estimation 122
Seok-Hwan Oh, Guil Jung, Sang-Yun Kim, Myeonggee Kim, Young-Min Kim, Hyeon-Jik Lee, Hyuk-Sool Kwon, Hyeon-Min Bae

A Flexible Body-Conformable Ultrasound Transducer Array for Neuromodulation Applications 126
Jiayi Zhang, Lehang Guo, Huixiong Xu, Chang Peng

Efficient Lateral Excitation of Higher-Order Harmonics in Lithium Niobate Resonators Using Periodically Poled Piezoelectric Films (P3F) 130
Natalya Naumenko

36.8-GHz Fin-Mounted Lithium Niobate Resonator with High Electromechanical Coupling Coefficient of 33.8% 134
Kai Yang, Fuhong Lin, Jiming Fang, Haoran Tao, Jie Chen, Chengjie Zuo

Drag-Based Key-Point Control for Myocardial Infarction Echocardiography Video Generation 138
Guil Jung, Seok-Hwan Oh, Myeong-Gee Kim, Young-Min Kim, Hyeonjik Lee, Sang-Yun Kim, Hyuk-Sool Kwon, Hyeon-Min Bae

Electronic Design Considerations and System Development for Structural Health Monitoring with Ultrasonic Guided Waves 142
Lorenzo Capineri

High-Temperature Stable Piezoelectricity in BiFeO3-Based Lead-Free Ceramics 147
Xiaodong Yan, Xuemu Li, Zhengbao Yang

Accuracy Vs. Privacy: A Federated Learning Approach for Lung Ultrasound Pattern Classification 153
Umair Khan, Leonardo Lucio Custode, Andrea Smargiassi, Riccardo Inchingolo, Elena Torri, Francesco Tursi, Veronica Narvena, Tiziano Perrone, Libertario Demi, Giovanni Iacca

Study of Surface Acoustic Wave Sensor Sensitivity Using Bonded Structure of Piezoelectric Crystals 157
Yudai Ota, Jun Kondoh

A High-Frequency Ring-Annular Ultrasound Array for Intravascular Ultrasound Imaging 160
Xi Liu, Yuanlong Li, Yashuo He, Chang Peng

TranSLUCEnT: Transferred Sequential Lung Ultrasound Characteristic Encodings-Based Transformer for Lung Ultrasound Pattern Classification in Premature Neonates 164
Umair Khan, Noreen Fatima, Xi Han, Camilla Rigotti, Federico Cattaneo, Giulia Dognini, Maria Luisa Ventura, Emanuella Zannin, Giovanni Iacca, Libertario Demi

Magnetic Imaging of Metallic Objects Using Eddy Current Measurements 168
In-Kui Cho, Hyun Joon Lee, Kye-Seok Yoon, Sang-Won Kim, Jung Hoon Oh

CAMDA Net: Cross Attention Multi-Modal Domain Adaptation Using B-Mode and Sinogram 170
Hyeonjik Lee, Seok-Hwan Oh, Myeong-Gee Kim, Young-Min Kim, Guil Jung, Sang-Yun Kim, Hyuk-Sool Kwon, Hyeon-Min Bae

A Memosducer Based Biquaternionic Signal Processing for Nonlinear Ultrasonics Imaging Applied to Nondestructive Testing 174
Sadataka Furui, Serge Dos Santos

Photoacoustic Characterization of Photothermal Nanoparticles Containing Metal-Bis(dithiolene) Complexes: In Vitro Validation 178
Franck Camerel, Sandrine Cammas-Marion, François Varray

An Automated and Generalizable Technique for Left Ventricle Segmentation in 2D Echocardiography Utilizing Generative Adversarial Network 182
Sajjad Afrakhteh, Noreen Fatima, Libertario Demi

Parallelization of Implicit Finite Difference Methods for Wave Propagation Simulation 186
Changting Xu, Jiezhi Yang

Thermo-Acoustic Phase Modulator Based on Y36-Cut LiNbO3 Thin Film 190
Xuankai Xu, Yushuai Liu, Lihui Jin, Peng Wu, Yitao Liao, Tao Wu

Design, Fabrication, and Characterization of Dual-Mode AlN Lamb Wave Resonators Above 2 GHz 194
Tiancheng Luo, Xiaoming Huang, Qinwen Xu, Yuanhang Qu, Huajun Liu, Qibin Zeng, Baichen Lin, Yan Liu, Chengliang Sun

Enhanced Gigahertz Acoustofluidic Chip for High-Throughput Nanoscale Bioparticle Separation 198
Qing Zhou, Haotian Sun, Shuyimg Wang, Weiwei Cui, Hao Zhang

Integration of Localized Surface Plasmon Resonance (LSPR) Sensor on SAW Device - Influence of Longitudinal Wave Radiated into Liquid by SAW on LSPR Sensor- 202
Atsuya Kida, Jun Kondoh

8 GHz Harmonic Surface Acoustic Wave Ladder Filters with Grooved Al Electrode in LiNbO3 Substrate 205
Michio Kadota, Fuyuko Yamashita, Shuji Tanaka

A Wide Electronically Tunable Cavity Filter Using Thin-Film Barium-Strontium-Titanate Varactors 209
Jie Yang, Shuwen Jiang

Experimental Studies on Power and Frequency Dependences of Nonlinear Products in Temperature Compensated SAW Devices 212
Viateur Iragire, Yuanyuan Liu, Jing-Fu Bao, Ken-Ya Hashimoto

Study on Improving the S/N Ratio for Detecting Internal Defects in Concrete from a Moving Cart Equipped with LDVs 216
Tsuneyoshi Sugimoto, Yutaka Nakagawa, Kazuko Sugimoto, Itsuki Uechi, Noriyuki Utagawa, Yasukazu Nihei

The Nonlinear P-Th Root Beamforming for Intracardiac Echocardiography Application : The Comparison Study 219
Hyunhee Kim, Seonghee Cho, Sunghun Nam, Chulhong Kim

An Autotuning Diaphragm Assessment System Based on Ultrasound Image Tracking 223
Zhen Song, Vaheh Nazari, Yu Sun, Alfred S. K. Wong, Yongping Zheng

Alveolar Geometry Estimation Through Quantitative Lung Ultrasound Spectroscopy, Phantom Study with Monodisperse Vs Polydisperse Microbubble Populations 226
Federico Mento, Marco Rosson, Lisa Te Winkel, Wim Van Hoeve, Libertario Demi

Simplified Delay-And-Sum Implementation for Plane Wave Ultrasound Imaging 230
Ninghao Wang, Zhitian Shen, Yiheng Li, Yang Jiao, Yaoyao Cui

A Novel Empirical Wavelet Transform Approach for Classification of Radiofrequency Lung Ultrasound Signals Applied to Diagnosis of Lung Diseases 234
Mattia Perpenti, Federico Mento, Sajjad Afrakhteh, Giuliana Barcellona, Tiziano Perrone, Libertario Demi

Automated Microfluidic System Enabled Continuous Separation of Nanoparticles with Gigahertz Acoustofluidic Tweezers 238
Shuying Wang, Luyao Li, Qing Zhou, Weiwei Cui, Hao Zhang

Comparison of Natural Mechanical Wave Imaging Derived Myocardial Anisotropic Indicator Between Healthy Volunteers and Hypertensive Subjects 242
Dan Ran, Yewei Lu, Xuemei Yang, Bangxin Lan, Shuangshuang Li

Optimal Driving Conditions and Angles for an Ultrasound-Actuated Needle Device 246
Youheng Zeng, Ashraf Agweder, Zhihong Huang, Graeme McLeod

ScAlN BAW Resonator Technology with Coupling Coefficients Up to 21% for High Performance Filter Design 249
Romain Gerbe, Yuefei Yang, Daniel Hou

Frequency-Differencing Method to Kickstart Waveform Inversion Without Cycle Skipping 253
Rehman Ali, Trevor Mitcham, Nebojsa Duric

Localisation and Decoding of Acoustoelectric Brain Imaging Based on Anisotropic Brain Models 257
Xue Wang, Chen Zhang, Guowei Chen, Jia He, Mingyu Li, Feng He, Hao Zhang, Minpeng Xu, Dong Ming

Long-Term Fates of Reversibly Sonoporated Cells Dependent on Degree of Intracellular Calcium Fluctuations 261
Jianmin Shi, Yuhang Ma, Ruchuan Shi, Peng Qin

Stress Analysis Based Multi-Electrode Optimization for High-Frequency PMUTs in High-Order Mode 264
Ning Lv, Yan Wang, Leming He, Junyan Ren

An Accurate Auto-Diagnosis Ultrasonic Model for Battery State-Of-Charge Estimation Through Pulse-Echo Testing Approach 268
Fan Yang, Qian Mao, Kwok-Ho Lam, Jiyan Dai

Hardware Description Language Versus High-Level Synthesis for the FPGA Implementation of Ultrasound Beamformers: A Comparative Analysis 271
Valentino Meacci, Alessandro Dallai, Stefano Ricci, Enrico Boni, Piero Tortoli, Alessandro Ramalli

Application of Tensor Completion for Reducing the Beamforming Time in Ultrafast Ultrasound Imaging: A Doppler Ultrasound Assessment 274
Sajjad Afrakhteh, Federico Mento, Libertario Demi

A Highly Integrated Ultrasound Open Platform to Develop and Test Advanced Techniques for Ultraportable Scanners 278
Valentino Meacci, Lorenzo Castrignano, Paolo Verdi, Alessandro Ramalli, Piero Tortoli, Enrico Boni

Exploring the Quality Factor of Quartz Crystal Resonator with N-M Asymmetric Electrode Structure in 3rd Overtone Mode 282
Jian-Guo Hu, Pengwen Guo, Zhen Li, Xiangshun Geng

Technology for Piezoelectric Micromachined Ultrasonic Transducers with Adaptive Channel Geometry and Chip Size 285
Chris Stoeckel, Shubham Mulay, Katja Meinel, Jörn Bankwitz, Jan Seiler, Dirk Ullmann, Danny Reuter

Shape Estimation of Flexible Probe Using Spatial-Attention FlexShapeNet 289
Xue Gao, Lihong Huang, Yuanyuan Wang, Yi Guo

3-D Ultrasound Imaging with Microbeamformer-Based FDMAS: A Preliminary Performance Assessment 293
Lorenzo Castrignano, Giulia Matrone, Piero Tortoli, Alessandro Ramalli

SAW Resonators Based on High-Crystalline AlScN Film Grown by a Two-Step Method of MOCVD and PVD 297
Kai Yang, Jie Chen, Fuhong Lin, Han Qiu, Jiming Fang, Chengjie Zuo

Insole Ballistocardiography for Unobtrusive Respiratory and Heart Rate Monitoring Using 3D-Printed Piezoelectric Sensors 301
Bastian Latsch, Alexander A. Altmann, Omar Ben Dali, Romol Chadda, Niklas Schäfer, Kilian Schäfer, Muhammad Bilal Khan, Jan Helge Dörsam, Felix Herbst, Sven Suppelt, Oliver Gutfleisch, Mario Kupnik

Gait Phase Detection Using 3D-Printed Piezoelectric Force Myography Sensors 305
Bastian Latsch, Niklas Schäfer, Stephan Schaumann, Steffen Graffe, Asghar Mahmoudi, Martin Grimmer, Alexander A. Altmann, Omar Ben Dali, Julian Seiler, Stephan Rinderknecht, Philipp Beckerle, Mario Kupnik

Magnetic Field Control of Lithium Niobate Thin Film Acoustic Delay Lines 309
Mingye Du, Yuxi Wang, Tao Wu

PET Labeling Allows Investigation of Microbubble and Nanodroplet Contrast Agent Drainage Kinetics in Mouse Models 313
Georgia Adam, Islay Cranston, Carlos Alcaide-Coral, Timaeus E F Morgan, Paveekorn Supteranon, Susan M Farrington, Adriana Tavares, Carmel M Moran, Helen Mulvana

Wavelength-Scale Focusing Transducer Based on Suspended Aluminum Nitride Thin Film 317
Jiawei Li, Lihui Jin, Mingye Du, Peng Wu, Yitao Liao, Tao Wu

Microbubble Detection Using Neyman-Pearson Theory for Volumetric Ultrasound Localization Microscopy 321
Valentin Mazellier, George Chabouh, Olivier Couture, Pauline Muleki-Seya, François Varray

Frequency Tunable Bulk Acoustic Wave Resonators Based on the Acoustoelectric Effect 325
Wenxuan Li, Wei Chu, Ruchuan Shi, Chengtao Luo, Jinyi Ma, Tao Han

SAW Resonator Reflector Design for Gamma Loading Improvement 329
Yiliu Wang, Tomoya Komatsu

Characterization of AlN and AlScN Thin Films CPW Transmission on High-Resistive Substrates 333
Kang Du, Fengyu Liu, Xuankai Xu, Tao Wu

Low Loss Acoustic Waveguide Based on 128° Y-Cut Lithium Niobate 337
Wenzhen Li, Jiawei Li, Tao Wu

Two-Stage Filtered Higher Order Delay Multiply and Sum Beamformer for Ultrasound Plane Wave Imaging with Linear Complexity 341
Christian Marinus Huber, Magdalena Eschenbacher, Helen Schreiner, Helmut Ermert, Ingrid Ullmann, Stefan Lyer

A Novel Pulse Excitation Method for Single-Element Dual-Frequency Transducers 345
Jiaqi Li, Weiwei Shao, Xueru Yang, Yaoyao Cui

A New Fabrication Process for Lamb Wave Resonator with IDT-IDT Structure 349
Shitao Lv, Zexin Sun, Wenhao Ye, Jicong Zhao, Haiyan Sun

Serially Connected Strip-Type Bulk Acoustic Resonator Using X40°Y-LiNbO3 (XSAR) with Bandwidth of 33% 352
Yong Guo, Michio Kadota, Shuji Tanaka

Optimized Acoustic Mirror Stack for Layered LLSAW Devices Using Thin LiNbO3 Plates 356
Sho Nagatomo, Hiromu Okunaga, Masakazu Mimura, Tetsuya Kimura

Development of a 40/100 MHz Dual-Frequency Miniature Ultrasound Probe for Intravascular Ultrasound Imaging 360
Yashuo He, Xi Liu, Jiayi Zhang, Chang Peng

The Optimization of Inverted-Mesa Type Quartz Crystal Resonators with the Consideration of Effects of Structural Parameters 364
Shih-Yung Pao, Baochen Meng, Ji Wang, Zong-De Lin, Tzu-Hsiu Peng

A Novel Approach for Automated Segmentation of Left Ventricle Based on Bidirectional Myocardium to Endocardium Translation Using Generative Adversarial Network 368
Noreen Fatima, Sajjad Afrakhteh, Libertario Demi

A Comparative Study on Insertion Loss Spectrum of Acoustic Delay Lines 372
Yang Li, Tao Wu

Unsupervised Ultrafast Ultrasound Imaging Based on Decoupled Contrastive Learning 376
Jingfeng Lu, Aohua Wang, Wenzhuo Liang, Hua Zhuang, Yi Zhang

High-Q, Spurious Free Lamb Wave Resonator with Acoustic Speeder Structure 380
Wenhao Ye, Shitao Lv, Zexin Sun, Haiyan Sun, Jicong Zhao

Low Loss Acoustic Waveguide Based on Aluminum Nitride Thin Film 383
Yang Li, Jiawei Li, Tao Wu

5-GHz Wideband Acoustic Filter with FBW of 20% Based on Z-Cut Lithium Niobate 387
Jiming Fang, Kai Yang, Fuhong Lin, Jie Chen, Haoran Tao, Chengjie Zuo

12-GHz Spurious-Free Fin-Mounted Lamb Wave Resonator with Half-Electrode Reflectors 391
Kai Yang, Jiming Fang, Fuhong Lin, Yiming Wang, Jie Chen, Meijuan Li, Haoran Tao, Chengjie Zuo

Periodic Structure of Narrow FBARs Operating on SH1 Mode in LN Membrane Solidly Mounted on SiC Substrate 395
Victor Plessky, Naiqing Zhang, Nan Xu, Seniz Esra Küçük, Luis Guillermo Villanueva

Industrial Validation of the PMUT Ultrasonic Flowmeter Based on CSOI 399
Shaokun Wang, Haochen Lyu, Ahmad Safari, Songsong Zhang

A Force Feedback Controlled Piezoelectric Micromachined Ultrasonic Transducers (PMUT) with Tunable Dynamic Performance 403
Tingzhong Xu, Rodrigo Tumolin Rocha, Damiano Caponi, Javad Abbaszadeh, Claire Bourquard

Lightweight Lung Ultrasound Video Analysis Model 407
Wenyu Xing, Zhibin Zhu, Yiwen Liu, Chao He, Yifang Li, Dean Ta

Machine Learning Strategies for Freeform PMUTs Design 410
Jiapeng Xu, Gabriele Schrag, Zongru Doris Shao, Rodrigo Tumolin Rocha, Tingzhong Xu

Ultra-Sensitive Cascaded Integrated Photonic Ultrasound Transducers (IPUTs) 414
P. L. M. J. Van Neer, P. J. Harmsma, A. M. Gerritsma, R. K. Altmann, S. V. Valappil, M. P. Oderwald, D. Piras, B. A. J. Quesson, S. Bhat, M. Harjanne, S. Ylinen, Y. Marin, P. Heimala, T. H. Jansen, M. D. Verweij, M. S. Van Der Heiden

Domain Knowledge-Enhanced Integrated Model for LUS Video Scoring 418
Yiwen Liu, Wenyu Xing, Chao He, Mingbo Zhao

Influence of Tween 20 on the Formation and Acoustic Properties of Monodisperse Microbubbles Produced by Flow-Focusing 421
Chunjie Tan, Chang Lu, Ruchuan Shi, Peng Qin

High-Speed Observations of Acoustic Droplet Ejection of a Shear-Thinning Polymer Solution in an External High-Voltage Electric Field 425
Joni Mäkinen, Nobuki Kudo, Jere Hyvönen, Mamoru Hashimoto, Edward Hæggström, Ari Salmi

Ultrasound System for Real-Time Multi-Probe Applications with CMUTs 429
Daniele Mazierli, Alessandro S. Savoia, Claudio Giangrossi, Enrico Boni, Alessandro Ramalli, Muhammad Usman Khan, Monica La Mura, Alvise Bagolini, Piero Tortoli

Towards Wearable Ultrafast Ultrasound: A FPGA Solution 433
Zhengchang Kou, Michael L. Oelze

Enhancement of Ultrafast Ultrasound Images: A Performance Comparison Between CNN Trained with RF Or IQ Images 436
Roser Viñals, Paolo Motta, Jean-Philippe Thiran

Non-Invasive Gene Delivery to Brain Lymphatic System Using an Imaging Phased Array and Ultra-Short Focused Ultrasound Pulses 440
Fotios Tsitsos, Alec Batts, Daniella Jimenez, Nancy Kwon, Samantha Gorman, Rashell Ramirez, Hadrien Padilla, Konstantina Kaplani, Maria Kanellopoulou, Stavros Taraviras, Elisa Konofagou

Transcutaneous Super-Resolution Ultrasound Imaging Using Erythrocytes Versus Microbubbles in a Rabbit Kidney 444
Mostafa Amin Naji, Matthieu Toulemonde, Jipeng Yan, Kai Riemer, Peter D Weinberg, Meng-Xing Tang, Jørgen Arendt Jensen

Ultrasound Over Ethernet: Pathway to Enormous Channel Count Ultrasound System 448
Zhengchang Kou, Marcia Yu, Qinglin Ge, Wesley Pang, Michael L. Oelze

Fast Spline Interpolation Using GPU Acceleration 451
Sebastian Kazmarek Præsius, Jørgen Arendt Jensen

Quantifying Elevational Vs. Azimuthal Transducer Motion for Novice User Guidance 456
Sean Flannery, Shyam Bharat, Jonathan Sutton

Deep Learning Based Gestational Age Estimation with Outlier Elimination in Blind Sweep Fetal Ultrasound 459
Priyam Patel, Leila Kalantari, Shyam Bharat, Soheil Borhani, Stephen Schmidt, Melanie Jutras, Jonathan Sutton

Intraocular Pressure Measurement Using Surface Acoustic Wave Optical Coherence Elastography (SAW-OCE) 464
Yilong Zhang, Zhengshuyi Feng, Robert Scott, Ying Yang, Chunhui Li, Zhihong Huang

Optical Attenuation Coefficient-Based Automatic Segmentation of Limbal Epithelium and Age-Related Differences 467
Yilong Zhang, Ryan Dimmock, Ying Yang, Zhihong Huang

Automated Assessment of Uterine Coverage in Blind Sweep Obstetric Imaging Protocol 471
Elizabeth Herbst, Sean Flannery, Shyam Bharat, Jonathan Sutton

Enhancing Contrast in Circular-View Photoacoustic Computed Tomography Systems 475
Soheil Hakakzadeh, Zahra Kavehvash, Mohammad Mehrmohammadi

Toward Interdigital Transducer-Based mmWave Acoustic: Mitigating Self-Resonances 479
Xingyu Liu, Junyan Zheng, Zijun Ren, Fangsheng Qian, Jiashuai Xu, Yansong Yang

Ultrafast Multiplexed Electrostatic Printing of Lead Zirconate Titanate Films 483
Xuemu Li, Zhuomin Zhang, Xiaodong Yan, Zhengbao Yang

AI Enabled High Frame Rate Portable Ultrasound Imaging Pipeline: Prototype Implementation with GPU Acceleration* 486
Arun Kumar V, Madhavanunni A. N, Mahesh Raveendranatha Panicker

Technological Advantages of Photolithographic Crystal BK for Automotive 491
Kenichiro Murata, Naohiro Wakisaka, Koichi Moriya, Kenichi Ueki

Incorporating a Cesium Fountain Frequency Standard into a Real-Time Time Scale UTC(k) 494
Shuhong Zhao, Shaowu Dong, Shanshan Bai, Jihai Zhang, Sufang Liu, Shouxiang Lu

Towards Automated Image Quality Assessment in Ultrasound Imaging 497
Mahesh Raveendranatha Panicker, Madhavanunni A. N., Gayathri M

Low Insertion Loss Band 1+3+7 Hexaplexer Using Spurious-Suppressed I.H.P. SAW Filter 501
Motoki Ozasa, Yoshida Naoto, Yasuaki Shin, Noriyoshi Ota

The Influence of PSC on SAW Devices Based on SiC Substrates 505
Ming Li, Kai Huang, Zhongyang Liu, Xin Xia, Kunpeng Li, Gongbin Tang

Adaptive-Subtraction Electromagnetic Interference Noise Reduction in Photoacoustic Imaging in Vivo 508
Ruinxi Sun, Zihao Huang, Fan Zhang, Feng Gao, Fei Gao

Error Reduction in Left Carotid Artery Measurements Using High Frame Rate Ultrasound Vector Flow Imaging 511
Yigang Du, Haiyan Ding, Linsong Deng, Le He, Shuangshuang Li, Lei Zhu

Unsupervised Neural Representation for Limited-View Photoacoustic Imaging Reconstruction 515
Youshen Xiao, Yuting Shen, Bowei Yao, Xiran Cai, Fei Gao

Longitudinal Photoacoustic Monitoring of Collagen Evolution Modulated by Cancer-Associated Fibroblasts: Simulation and Experiment Studies 518
Jiayan Li, Lu Bai, Junmei Cao, Wenxiang Zhi, Qian Cheng

Photoacoustic Digital Eye and Image Reconstruction in 3D 522
Sheng Liao, Fan Zhang, Yuwei Zheng, Shangqing Tong, Yuting Shen, Feng Gao, Hulin Zhao, Fei Gao

Residual-Fusion Network for Multi-Modality Breast Cancer Image Analysis 525
Yoonjae Cho, Sampa Misra, Ravi Managuli, Richard G. Barr, Jeongmin Lee, Chulhong Kim

A Lorentz Force Magnetometer Based on a TPoS Resonator Operating in Close-Loop Configuration 529
Xu-Heng Ou-Yang, Yi-Ming Pan, Cheng Tu, Xiao-Sheng Zhang

Study of Longitudinal Modes Suppression of Resonators on LiNbO3/SiO2/SiC Substrate 533
Xiaoli Fang, Shibin Zhang, Pengcheng Zheng, Jinbo Wu, Liping Zhang, Xinjian Ke, Juxing He, Kai Huang, Xin Ou

Spontaneous Polarization and Transverse Current in TGS 537
Toshio Kikuta, Boguslaw Fugiel

Enhancement Effects of Underwater Acoustic Streaming by a Cylinder with a Cavity 540
Yimeng Wang, Manabu Aoyagi

High-Quality Plane-Wave Image Reconstruction Using the U2-Net Deep Learning Model 544
Jiajin Li, Wenwen Sun, Jinhua Zhou, Hu Peng, Yadan Wang

Atomic Clock Frequency Steering Method Based on Optimal Control Theory 548
Shanshan Bai, Shuhong Zhao, Shaowu Dong, Zhe Gao

PyMUST: An open-Source Python Library for the Simulation and Analysis of Ultrasound 552
Gabriel Bernardino, Damien Garcia

Using Windowed Radon Transform to Measure Local Coherence Independently of Speed-Of-Sound Variations in Plane-Wave Imaging 556
Samuel Beuret, Jean-Philippe Thiran

Transcranial Ultrasound Focusing with Flexible Array Transducer 560
Yifan Wang, Yiming Chen, Ya Gao, Mengjiao Zhang, Qian Cheng

Non-Newtonian Acoustic Gel for Wearable Ultrasound Monitoring System 564
Pisharody Harikrishnan Gopalakrishnan, Mahesh Raveendranatha Panicker

Multiplying the Repetition Frequency of Optical Frequency Comb Signals Based on the Talbot Effect 568
Bing Xu, Xing Chen, Xinxin Wang, Bin Luo, Song Yu

Frame Interpolation of Ultrasound IQ Data Using Dictionary Learning and SFA Method 572
Tengfei Wang, Teng Ma, Chongchong Guo, Lei Li

Design and Control of a Magnetically-Actuated Ultrasound Capsule Endoscope 576
Zhengxin Yang, Lihao Liu, Xinze Li, Jiaqi Li, Yang Jiao, Yaoyao Cui

A Imaging Method for Delamination Damage Based on Energy Mapping and Data-Driven Reconstruction 580
Yitian Yan, Yaxun Gou, Lei Qi, Zhifeng Tang, Fuzai Lv, Yang Liu

Enhancement of Needle Localization Using Semi-Supervised Deep Learning 584
Yousef Metwally, Mariam Fouad, Georg Schmitz, Stefanie Dencks

Strategy for Overhead Redirection of Exhaled Infectious Aerosols Using Upward Upright Acoustic Streaming by Floor-Reflected Ultrasonic Beam 588
Hiromu Hashimoto, Masaya Takasaki, Keisuke Hasegawa

Effective Apodization in Synthetic Aperture Ultrasound Computed Tomography 592
Soheil Hakakzadeh, Zahra Kavehvash, Mohammad Mehrmohammadi

Novel Wireless Elastic Ultrasonic Technology for Continuous Bladder Surveillance 596
Yu-Tzu Liu, Qifa Zhou, Cheng-Hsin Chuang, Jian-Xing Wu

Novel Tri-Frequency Probe Development for Advanced Photo Acoustic Gastrointestinal Imaging 599
Chun-Yen Huang, Hsiao Chuan Liu, Jian-Xing Wu

Piezoelectrical Micro-Tapper Based Three-Dimensional Optical Coherence Elastography for in Vivo Dermatology Applications 601
Tianyu Zhang, Zhengshuyi Feng, Yilong Zhang, Chunhui Li, Zhihong Huang

Accurate Synthesis of Acoustic Holograms Using Field Matching 605
N. Jiménez, D. Andrés, A. Eroles-Simó, V. Vegas-Luque, R. P. Calpe-Fortea, J. J. Rodriguez-García, F. Camarena

Development of an Easily Fabricated, Highly Flexible PMUT Array Based on Titanium Foil for Enhancing Ultrasound Manipulation 608
Chi-Chun Wang, Guo-Hua Feng

Fast Ultrasound Palmprint and Palm Veins Acquisition for Biometric Recognition 612
Monica Micucci, Alesssandr Ramalli, Antonio Iula

Enhancing Diverging-Wave Ultrasound Imaging with the Iterative Adaptive Approach 616
Mahsa Sotoodeh Ziksari, Sven Peter Näsholm, Andreas Austeng, Are Charles Jensen

An Autocorrelation-Based Approach for Estimating Shear Wave Speed Using 2D Velocity Vector 619
Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm, Elsa Cecconello, Sverre Holm, Yücel Karabiyik

High-Power Testing System and Method for Piezoelectric Material Parameters 622
Xiaobo Wang, Wenchao Xue, Yuliang Zhu, Tao Han, Chengtao Luo

Development of Measurement System for Reflected Surface Acoustic Wave Sensors 626
Shibata Keiichiro, Jun Kondoh

Study of Monolithic Multiband SAW Filters for S-Band 629
Mijing Sun, Liping Zhang, Shibin Zhang, Pengcheng Zheng, Juxing He, Xinjian Ke, Kai Huang, Xin Ou

Tumor Characterization Using the Backscatter Coefficient at Low and High-Frequency 632
Cyril Malinet, Celia Mansilla, Iveta Fajnorovà, Adrien Rohfritsch, David Melodelima, Aurélie Dutour, Pauline Muleki-Seya

Phased-Array Compounding for Reflection Ultrasound Computed Tomography Systems 636
Soheil Hakakzadeh, Zahra Kavehvash, Mohammad Mehrmohammadi

Small-Window Entropy Based on Fast Multivariate Empirical Mode Decomposition for Characterization of Human Skin Aging 640
Yuzhen Li, Bingbing He, Xun Lang, Yufeng Zhang, Ying Wang, Ningtao Zhang

A 220 kHz Air-Coupled Spiral Ultrasonic Phased Array Using Waveguides 644
Christoph Haugwitz, Fabian Krauß, Gianni Allevato, Matthias Rutsch, Jan-Helge Dörsam, Sonja Wismath, Sören Soennecken, Anne Harth, C. M. Heyl, Cherif Othmani, Sebastian Merchel, M. Ercan Altinsoy, Thomas Hahn-Jose, Mario Kupnik

Super-Resolution Ultrasound Imaging Using Erythrocytes on an Axillary Human Lymph Node 648
Mostafa Amin Naji, Nathalie Sarup Panduro, Seyed Mohammad Mahdi Tabatabaei Majd, Ali Salari, Michael Bachmann Nielsen, Charlotte Mehlin Sørensen, Jørgen Arendt Jensen

10.5-GHz Coupled Longitudinal and Shear SAW Resonator with High Electromechanical Coupling Coefficient of 18% 652
Zhongbin Dai, Liyan Li, Jiaxin Dong, Chengjie Zuo

6.5 GHz BAW Resonators and Filters Fabricated on Single Crystal AlN Template 656
Wentong Dou, Xuanqi Huang, Shaojie Zhou, Jiangmei Zhang, Yang Gao, Chao Yuan, Zhiqiang Mu, Wenjie Yu

Thin LiNbO3 Shear Horizontal Acoustic Plate Mode Biosensor 660
C. Veras, P. Perreau, J. Delprato, D. Rolland, E. Soulat, M. Bousquet, P. Mailley, T. Alava, A. Reinhardt, S. Queste, T. Ricart

Implicit Neural Representations for Speed-Of-Sound Estimation in Ultrasound 663
Michal Byra, Piotr Jarosik, Piotr Karwat, Ziemowit Klimonda, Marcin Lewandowski

Optimization of Beamforming Strategy Applied to a Dual Core Probe for US-Guided Sonoporation 667
Juline Cloet, Remi Rouffaud, Mathieu Legros, Jean-Michel Escoffre, Damien Fouan, Marie Roy, Franck Levassort, Dominique Certon

Compensation Function for Enhanced Bandwidth and Improved SNR Through Programmable Spectral Shape Signals 671
Muhammad Tayyib, Linas Svilainis

Sub-Wavelength Energy Focusing Through a Fabry-Pérot Based MHz Elastic Extraordinary Acoustic Transmission System 676
Jiacheng Chen, Thibaut Devaux, Rémi Rouffaud, Eun Bok, Marc Lethiecq, Oliver. B. Wright, Lionel Haumesser

Advancing Transcranial Focused Ultrasound for Neuromodulation: Integration of Pseudo-Brain Model into Simulations 679
Han Li, Xinyao Liu, Yue Zhao, Zhiqiong Wang, Zhihong Huang

Automatic Grading of Nucleus Pulposus Degeneration for Spinal Endoscopic Surgery Based on Ultrasound Signal Analysis by an Enhanced ViT 682
Yiwei Xiang, Jiaqi Yao, Chang Jiang, Nixi Xu, Zixian Chen, Rui Zheng

Simulation Study on Decoding with Correlation and Convolution for Hadamard and Golay-Coded Ultrasound Array Transmission 686
Chikayoshi Sumi, Bowen Deng

Analysis of Mechanical and Electrical Cross-Talk Effects in Advanced Single Crystal and Standard Piezocomposite Transducers Using B-Scan Measurements 690
Sean Toffessi Siewe, Nicolas Felix, David Voisin, Matt Spigelmyer, Wyatt Stoup, Mathieu Legros

Enhancing Transcranial Focused Ultrasound Simulation Accuracy: The Impact of Transducer Geometry and Skull Modelling 694
Han Li, Isla Barnard, Tyler Halliwell, Tom Gilbertson, Zhihong Huang

Development and Characterization of PMUTs Using Enchanced C-SOI Wafers 698
Cyril Baby Karuthedath, Abhilash Thanniyil Sebastian, Teuvo Sillanpää, Juha Larismaa, Katja Parkkinen

Wideband and High-Sensitivity 1D PMUT Array Transducers 702
Kenji Suzuki, Naoki Shimizu, Hikaru Yagi, Yuta Nakayama, Takashi Mizuno

Investigation of Bragg Reflectors for Polarity-Inverted AlN BAW Resonators Operating at Super High Frequency 706
Ruidong Qin, Chongyang Huo, Xuanqi Huang, Zhiqiang Mu, Wenjie Yu

Estimation of Compound Layer Thickness and Porosity in Nitrocarburized Hardening 710
Johan E. Carlson, Payal Gupta, Narendra Kumar

Global Constraint for Temperature Compensation for Dynamic Time Warping of Guided Wave Ultrasound Signals 714
Narendra Kumar, Payal Gupta, Johan E. Carlson

Quantitative Ultrasound Analysis for Rib Bones 719
Felix Sundblad, Cristina Herrera, Clark Dickerson, Ari Salmi, Kay Raum

Significant Improvement in SNR of PMUTs by Using Transimpedance Amplifier: A Promising Architecture Towards Canonical Ultrasound Medical Imaging 723
Sina Sadeghpour, Behnam Madadnia, Rui Amendoeira, Javier Collado Ruiz, Michael Kraft

Continuous Bernoulli Distribution for More Realistic Ultrasound Reconstruction with NeRF 727
Yimeng Dou, Tomy Varghese

Longitudinal Vascular Monitoring of Acute and Diabetic Kidney Diseases with 3D Renal Ultrafast Ultrasound Doppler Imaging 731
Donghyeon Oh, Donghyun Lee, Jinseok Heo, Jooyoung Kweon, Uijung Yong, Jinah Jang, Yong Joo Ahn, Chulhong Kim

Machine Learning Assisted AlN Resonator Optimization Achieving 7.8% Coupling Coefficient with 70% Reduction in Time Expenditure 735
Xi He, Chen Ma, Feixuan Huang, Lihang Liao, Jianlin Chen, Qinghua Ren, Fengyuan Yang, Yiming Ma, Xing Haw Marvin Tan, Nan Wang

High-Order Lamb Wave Mode of 128°Y-Cut LiNbO3/SiO2 Resonator Covered with AlN Film Exhibiting Higher Electromechanical Coupling 739
Feixuan Huang, Guojie Chang, Mingye Du, Chen Ma, Xi He, Lihang Liao, Jianlin Chen, Qinghua Ren, Fengyuan Yang, Yiming Ma, Nan Wang

Automatic Filter Design Algorithm Based on Machine Learning and Synthesis 742
Lihang Liao, Xiangyu Zou, Zhiyuan Wang, Chen Ma, Feixuan Huang, Xi He, Qinghua Ren, Fengyuan Yang, Yiming Ma, Jianlin Chen, Nan Wang

An Ultra-Thin and Low-Power Wearable Bladder Volume Monitor Based on PMUT 746
Huimin Li, Wanli Yang, Xingli Xu, Yongquan Ma, Wei Wei, Zhuochen Wang, Wei Pang, Pengfei Niu

A Framework for Real-Time Visualization of Experimental and Simulated Ultrasound Images in Augmented Reality 749
François Gaits, Gauthier Bouyjou, Fabien Vidal, Enrico Boni, Alessandro Ramalli, Piero Tortoli, Adrian Basarab, Nicolas Mellado

Conformal Prediction for Explainable AI and Lesion Detection in 3D Cranial Ultrasound 753
Flora Estermann, Valérie Kaftandjian, Philippe Guy, Philippe Quetin, Philippe Delachartre

Self-Powered Ferroelectric Film-Based Ultraviolet Photodetector with Strong Thermoelectric Effect for Wearable Medical Application 757
Rohit Raj Padhi, Guo-Hua Feng

Ultrathin Wearable Patch for Skincare Assessment with High-Frequency MEMS Ultrasound 761
Wei Wei, Xingli Xu, Liang Zhang, Yongquan Ma, Zhuochen Wang, Wei Pang, Huimin Li, Wanli Yang, Pengfei Niu

Enhancement of Barium Titanate Based Ultraviolet Photodetector by Incorporating Reduced Graphene Oxide of Superior Optical Properties 764
Rohit Raj Padhi, Guo-Hua Feng

Comparison of Transmitting Different Frequencies for Fiber-Based Radio Frequency Transmission 768
Yunlan Luo, Zhuoze Zhao, Song Yu

Acoustic Metamaterial Optimization for Megahertz Frequencies 770
Rachel Stoakes, Roger Domingo-Roca, Andrew Feeney, James F. C. Windmill

Ultrasonic Backscatter Communication: A Feasibility Study 775
Asra Ashraf, Johan E. Carlson, Jaap Van De Beek, Johan Borg

Onboard Low Phase Noise Microwave Frequency Synthesizers with High Speed DAC and High Frequency Local Oscillators 779
Jean-Marc Lesage, Klervi Masseron, Jean-François Penn

An 878 MHz Low Noise LiNbO3/SiO2/Sapphire Acoustic Delay Line Oscillator 783
Chin-Yu Chang, Ya-Ching Yu, Chia-Hsien Tsai, Zhi-Qiang Lee, Ming-Huang Li

Helical Guided Wave Imaging Through Multi-Task Deep Learning Optimization 787
Zhao Wang, Xiao Ying, Haichao Liu, Zhifeng Tang, Fuzai Lv, Yang Liu

Propagation Characteristics of Lamb Waves in Periodically Stiffened Structures 791
Xiao Ying, Jian Li, Zhao Wang, Yantao Liu, Haibo Li, Yang Liu

Monolithic Wideband Air-Coupled Ultrasonic Transducer Based on Additively Manufactured Ferroelectrets 794
Alexander A. Altmann, Sven Suppelt, Max Ruhl, Stephan Schaumann, Bastian Latsch, Omar Ben Dali, Sergey Zhukov, Dennis Flachs, Xiaoqing Zhang, Christiane Thielemann, Heinz Von Seggern, Mario Kupnik

A 3.6 GHz Radio Frequency Circulator Based on AlN FBAR Filters 798
Chin-Yu Chang, Ya-Ching Yu, Yu-Chi Hung, Yung-Hsiang Chen, Yelehanka Ramachandramurthy Pradeep, Rakesh Chand, Yens Ho, Weileun Fang, Sheng-Shian Li, Ming-Huang Li

Improved Curvelet Transform-Based Sparsity Promoting Algorithm for Fast Ultrasound Localization Microscopy 802
U-Wai Lok, Joshua D. Trzasko, Chengwu Huang, Jingke Zhang, Ryan M. Deruiter, Shigao Chen

Automatic Blind Sweep Laterality Detection 805
Sean Flannery, Navaneetha Krishnan, Manikanda Krishnan, Leili Salehi, Shyam Bharat, Jonathan Sutton

Miniaturized 6 MHz Phased-Array Ultrasound Probe Based on Lead-Free Doped BaTiO3 Piezoceramics 808
Claire Bantignies, Loïck Bonnet, Rémi Rouffaud, Monique Pouille-Favre, Ana Borta-Boyon, Franck Levassort

Acoustic Streaming in Solutions with Acousto-Responsive Particles Using Finite Element Analysis 812
Sonja Wismath, Atieh Razavi, Matthias Rutsch, Marius Finder, Christoph Haugwitz, Jan Helge Dörsam, Nils Demuth, Sören Soennecken, Regine Von Klitzing, Amin Rahimzadeh, Mario Kupnik

GPU-Based Blockwise Non-Local Means Filtering with Microbubble Separation for 3D Ultrasound Localization Microscopy 816
U-Wai Lok, Joshua D. Trzasko, Chengwu Huang, Jingke Zhang, Ryan M. Deruiter, Shigao Chen

Optimizing Ultrasound Dosimetry for Bone Fracture Healing: Unveiling Cellular Response Mechanisms 820
Andrea Orthodoxou, Margaret Lucas, Helen Mulvana

Non-Invasive 3D Electromechanical Cycle Length Mapping for Atrial Fibrillation Mapping and PVI Ablation Response Prediction 824
Melina Tourni, Seungyeon Julia Han, Mary Kucinski, Hannah Kim, Angelo Biviano, Elisa Konofagou

Fast Image Reconstruction in the Frequency Domain for Row-Column-Arrays 828
Paul Hagemeyer, Thomas Lisson, Stefanie Dencks, Georg Schmitz

Effective Imaging Window Analysis for Wearable Ultrasound Device Using Fetal MRI 832
Baichuan Jiang, Keshuai Xu, Yunpu Zhang, Ernest Graham, Russell H. Taylor, Mathias Unberath, Jeeun Kang, Emad M. Boctor

Towards Monitoring Water Content in Membrane Electrode Assembly of Low Temperature Fuel Cells Using Ultrasound 836
Zehua Dou, Yuezhen Xu, Zhiying Wei, Hannes Emmerich, Juergen Czarske, David Weik

Measurement of Temperature, Dynamic Strain Amplitude and Spectra Using a Single SAWR 840
Shane Winters, Mauricio Pereira Da Cunha

Impact of Elevational Aperture Blockage on Ultrasound Attenuation Imaging for Liver Fat Quantification 844
Man Nguyen, Gary Ng, Hua Xie

An Open-Source GPU-Based Acoustic Simulator for Fast and Accurate Modeling of Acoustic Scattering 848
Zixuan Tian, Yun Jing, Aiguo Han

Waveguide Based Acoustic Levitation Device for Moving Objects in a Large Volume 852
Sören Soennecken, Jan Helge Dörsam, Christoph Haugwitz, Axel Jäger, Sonja Wismath, Nils Demuth, Mario Kupnik

Filter Performances for 5G Bands Based on SCAW Design on POI 856
Sylvain Ballandras, Eric Michoulier, Emilie Courjon, Tony Makdissy, Alexandre Clairet, Thierry Laroche, Florent Bernard, Gabrielle Aspar, Cédrick Chappaz, Christophe Didier, Saly Ndiaye, Alexandre Raveski, Roland Guerre, Aziz Alami-Idrissi

Model-Based Speed-Of-Sound Reconstruction Via Interpretable Pruned Priors 860
Can Deniz Bezek, Orcun Goksel

A Simulation Study on the Characteristics of Spatial Coherence to a Scattering Medium in Ultrasound 864
Zhiyuan Li, Hervé Liebgott, Yue Zhao, François Varray

Ultrasonic Flaw Classification with Self-Supervised Learning Using a DINO Framework 868
Victoria Heekyung Kim, Muyu Yang, Kushal Virupakshappa, Erdal Oruklu

Multiple Pregnancy Detection from Ultrasound Blind Sweeps 871
Leila Kalantari, Subhendu Seth, Manikanda Krishnan, Jonathan Sutton, Melanie Jutras, Anuradha Rao

Detection of Tumor Stiffness and Vasculature Changes Using Harmonic Motion Imaging and Ultrasound Localization Microscopy Following contrast-Enhanced-Power-Doppler-Guided Sonoporation 875
Yangpei Liu, Sua Bae, Shiqi Hu, Elisa E. Konofagou

Tolerances Effect on Laser Structured Silicon-Based Multi Fourier-Horn Ultrasonic Nebulizer 879
Wail Al-Mogahed, Sebastian Voigt, Philipp J. Mehner, Georgi Paschew, Andreas Richter, Jan Mehner

PEtra: A Flexible and Open-Source PE Loop Tracer for Polymer Thin-Film Transducers 884
Marc-Andre Wessner, Federico Villani, Sofia Papa, Kirill Keller, Laura Ferrari, Francesco Greco, Luca Benini, Christoph Leitner

On Tuning the Sensitivity of Thermal Piezoresistive Resonators by a DC Thermal Pumping Scheme 888
Chengxin Li, Chen Wang, Aojie Quan, Linlin Wang, Michael Kraft, Hemin Zhang, Mustafa Mert Torunbalci

Compact Implicit Neural Representations for Plane Wave Images 892
Mathilde Monvoisin, Yuxin Zhang, Diana Mateus

Analysis of Nanoscale Ferroelectric Domain Dynamics Based on Image Processing of Local C-V Maps 896
Yohiomi Hiranaga, Takanori Mimura, Takao Shimizu, Hiroshi Funakubo, Yasuo Cho

Characterization of Acoustic Losses in Interdigitated VHF to mmWave Piezoelectric M/NEMS Resonators 899
Luca Colombo, Gabriel Giribaldi, Ryan Tetro, Jack Guida, Walter Gubinelli, Luca Spagnuolo, Nicol Maietta, Siddhartha Ghosh, Matteo Rinaldi

Low Intensity Pulsed Ultrasound Stimulation to Modulate Fat Cells and T Cell 903
Sydney Turner, Musarrat Amin, Adree Bhattacharjee, Sangpil Yoon

3D Deep Adaptively Efficient Attention Model to Segment Automated Breast Ultrasound 909
Hyunsu Jeong, Chiho Yoon, Hyunseok Lim, Jongjun Won, Gongning Luo, Mingwang Xu, Kiduk Kim, Namkug Kim, Chulhong Kim

Envelope Statistics Analysis of M-Mode Signals in Lung Ultrasound for Distinguishing Stratosphere from Seashore Signs: A Preliminary Study 913
Shohei Mori, Yuu Ono, Mototaka Arakawa, Sreeraman Rajan, Robert Arntfield, Shin Yoshizawa

Ultrasound-Assisted Targeted Delivery of Drug-Loaded Nanoparticles for Retinoblastoma Treatment 916
Jun Hon Park, Sourabh Madhav Mehta, Ramasamy Paulmurugan, Jeremy J. Dahl

Feasibility of Wearable and At-Home Applications of Pulse Wave Imaging: Evaluation of Central Arterial Mechanics Using a Rigid PMUT Array in Vivo 919
Parth Gami, Jessica Xie, Tuhin Roy, Pengcheng Liang, Paul Kemper, Chunqi Li, Marco Travagliati, Leonardo Baldasarre, Stephen Bart, Elisa E. Konofagou

Mechanical Displacement Correlates with Motor Response and Vascular Hemodynamic Changes Induced by Focused Ultrasound (FUS) Neuromodulation in Craniotomized Mice 923
Seongyeon Kim, Jonas Bendig, Elisa E. Konofagou

Quality Factor Improvement of 30° Y-Cut Lithium Niobate SH-SAW Resonators Using Double Busbar Structure 927
Wei Guo, Shuxian Wu, Yedi Zhou, Xin Xu, Qiaozhen Zhang, Feihong Bao, Xianqi Lin, Jie Zou

Adaptation Multimode COM for Low-Cut TC-SAW Device 931
Aleksei Shimko, Haekwan Oh, Takahiro Sato

Non-Contact Mode-Selective Excitation of Liquid Motion in a Container Using Acoustic Radiation Force of Airborne Convergent Ultrasound 935
Shunsuke Hijikata, Mayasa Takasaki, Kesisuke Hasegawa

In Vivo Pulsatility and Resistivity Measurement of Rat Spinal Cord Using Ultrafast Doppler Imaging: A Preliminary Study 939
Junjin Yu, Qiwen Hu, Kailiang Xu

Explore the Auxiliary Effect of Ultrasound Penetration Promotion on Anti-Inflammatory Effects of Natural Ingredients 942
Qing Yue, Yufeng Zhang, Bingbing He, Ningtao Zhang

Study on Attenuation Tomography Using Low-Frequency Ultrasound Differential Imaging with Variational Autoencoder for Human Thorax 946
Tong Zhang, Haokang Shi, Rui Guo, Maokun Li, Fan Yang, Shenheng Xu

Demonstration of Spurious-Free and Low-Loss X-Band SAW Filter 950
Liping Zhang, Shibin Zhang, Mijing Sun, Jinbo Wu, Pengcheng Zheng, Xiaoli Fang, Dongchen Sui, Xin Ou

A Digital Control for the Ultra-Stable Laser System 954
Danyang Zhu, Qi Shen, Can Xia, Shaomao Wang, Lei Hou, Jianyu Guan, Haifeng Jiang

Error of Uncertainty Propagation for Material Properties of MEMs Resonator Extracted by AI-Assisted Technique 957
Yinuo Enoch Zhao, Chen Liu, You Qian, Rahul Singaram Senthilkumar, Zibo Juan, Wai Siang Yeoh, Wei-Bin Ewe, Viet Phuong Bui, Xing Haw Marvin Tan

Spatio-Temporal Evolution of an Encapsulated Microbubble Dynamics During a Low Intensity Focused Acoustic Vortex Excitation 960
Qingqin Zou, Shifang Guo, Yujin Zong, Mingxi Wan

A Novel Transmission Sequence and Motion Compensation for Improving Coherent Plane Wave Compounding of Rapidly Moving Targets 964
Jiyuan Du, Bingbing He, Xun Lang, Yufeng Zhang, Guang Shi

Low-Intensity Pulsed Ultrasound Improved the obesity-Associated Cardiac Dysfunction in Mice 968
Min He, Jingsong Dong, Dean Ta

Crack Defect Characterization Using Raw Channel Data and DNN-Based Classifier 971
Yixiang Jia, Daler Rakhmatov

Automated Tumor and FUS Lesion Quantification on Multi-Frequency Harmonic Motion and B-Mode Imaging Using a Multi-Modality Neural Network 975
Shiqi Hu, Yangpei Liu, Xiaoyue Li, Elisa E. Konofagou

An Improved Setup for the Realisation of UTC(SCL) in the Standards and Calibration Laboratory 979
C. F. Au Yeung, S. L. Yang

Experimental Study of Nonlinearity Using Tungsten Bottom Electrode on SAW Device 981
Yoshikazu Kihara, Sanghoon Myeong, Kijung Lee, Takahiro Sato

3D Ultrafast Ultrasound Image Quality Enhancement Using 3D Deep Convolutional Neural Networks 988
Hao Huang, Yue Zhao, Zhiyu Zhou, Dong Zhu, François Varray, Hervé Liebgott

TCUP-Fusion: Transformer and Convolutional Neural Network Based Ultrasound and Photoacoustic Image Fusion 992
Boheng Zhang, Zelin Zheng, Haorui Huang, Lingyu Ma, Yi Shen, Mingjian Sun

Ultra-Wideband SH-SAW Filters Using 30° Y-Cut LiNbO3/SiO2/Poly-Si/Si Multilayered Substrates 997
Yang Chang, Shuxian Wu, Luyao Liu, Qiaozhen Zhang, Feihong Bao, Jie Zou

Vision Transformer Network Based on Ultrasonic Radiofrequency Data for Red Blood Cell Aggregation Classification 1001
Jinsong Guo, Yufeng Zhang, Bingbing He, Xun Lang, Jinyuan Li

YOLO-UND: YOLO and Transformer-Based Ultrasound-Guided Puncture Needle Detection and Localization 1005
Boheng Zhang, Yanqi Zhao, Haorui Huang, Yi Shen, Naizhang Feng, Mingjian Sun

Constant False Alarm Rate Processing Based on Multi-Rayleigh Model for Extraction of Fibrotic Signals in Liver Fibrosis: A Preliminary Study 1011
Shohei Mori, Shinnosuke Hirata, Tadashi Yamaguchi, Shin Yoshizawa, Hiroyuki Hachiya

Estimation of a Light Shift Using Various Atomic Resonances in Ramsey-Coherent Population Trapping Sequence 1014
Masahiro Fukuoka, Sigeyoshi Goka

Wafer Level Integration of Film Bulk Acoustic Resonator on 8 Inch LNOI Substrate 1018
Xinghua Wang, Chen Liu, Li Chen, Zhonghua Gu, Ying Zhang, Srinivas Merugu, Hock Koon Lee, Qingxin Zhang, Huamao Lin, Yao Zhu

A Row Column Addressed Handheld USB Ultrasound Probe for Real Time Biplane Imaging 1021
Damien Joguet, Mahé Bulot, Armand Moullart, Agnès Lejeune, Paul-Armand Dujardin, Emmanuel Montauban, Tony Matéo, Guillaume Boino, Olivier Gérard, Maxime Benchemoul, Clara Prud'Homme, Martin Flesch, Guillaume Ferin

Time Reversal and Inverse Filter for Blind Deconvolution of Ultrasonic Communication Through Solid Channel 1027
Jafar Saniie, Xin Huang

Priori Model and Image Feedback-Based Automatic Ultrasound Scanning Probe Position Control Method 1031
Haorui Huang, Zhe Zhang, Naizhang Feng, Yi Shen, Boheng Zhang, Zhi Xu, Mingjian Sun

Automatic Detection of Concrete Defects Using Laser Ultrasonic Visualization Technique Based on Deep Learning 1036
Sohichi Hirose, Takahiro Saitoh

Deep Learning for 3D Ultrasound Tomography Denoising 1039
James Wiskin, Bilal Malik

In Vivo Dual-Channel Widefield GCaMP Imaging Using Transparent Ultrasound Transducer 1044
Young Hun Kim, Martin Loynaz Prieto, Chunfu Lin, Yichi Zhang, Kamyar Firouzi, Merritt Maduke, Kim Butts Pauly, Pierre Khuri-Yakub

Investigating the Influence of Ore Mineralogical Composition on Ultrasonic Attenuation and Speed Measurement Techniques 1048
S. M. Mabandla, T. T. Phadi, D. T. Maiga, M. Safari, M. Dlame, P. W. Loveday, C. Gomes

Improved Transducer Performance for 3D USCT 1054
Patrick Pfistner, Michael Zapf, Nicole V. Ruiter

Implementation of a Robust Chirplet Signal Decomposition Algorithm on FPGA-SoC Platform for Ultrasonic Flaw Detection 1057
Tianyang Fang, Austin Fite, Jafar Saniie

A Physics-Informed Neural Network Approach for Determining Spatially Varying Arterial Stiffness Using Ultrasound Imaging: Finite Difference Simulation and Experimental Plaque Phantom Validation 1060
Tuhin Roy, Paul Kemper, Nima Mobadersany, Elisa E. Konofagou

A Microwave Frequency Comb with Measurement Capability Up to 100 GHz 1064
Po-Cheng Chang, Tien-Kuan Tseng

Evolution of Phononic Frequency Combs in Curved Piezoelectric Micromachined Ultrasonic Transducers (PMUTs) Under Single-Tone Actuation 1067
Praveen Kumar, Linet Thomas C, Sahana D, Chandrashekar L N, Antony Jeyaseelan, Gayathri Pillai

Determining the Linear Response of BAW Resonators Within a Filter 1070
Renfeng Jin, David Molinero, Xiangnan Pang, Dave Feld

Simulation Analysis of a Frequency Transfer System Based on Optical Frequency Combs 1074
Xinbo Li, Ziyang Chen, Ganbin Lu, Dongrui Yu, Kai Wu, Bin Luo, Hong Guo

Multi-View 3D Parametric Modeling for Cervical Ultrasound Imaging – a Validation Study 1077
Wei Zhang, Yuchong Gao, Songhan Ge, Jianhao Zhao, Haoyuan Tian, Rui Zheng

Position- And Posture-Estimation Method in Bathroom Using Spatial Ultrasound 1081
M. Shahrul Amir Kamarulzaman, Shun Sato, Ryotaro Ohara, Yuto Yasuda, Izumi Shitaro, Hiroshi Kawaguchi

Convex Bimorph PMUT for High Transmission Efficiency 1085
Shin-Ichiro Umemura, Yoshitaka Tadaki

Ultrafast Ultrasound Vector Doppler for Pulsatility Measurement in Rat Spinal Cord Small Vasculature 1087
Shaoyuan Yan, Junjin Yu, Kailiang Xu

Advanced Classification of Sand Particle Size Distribution with Acoustic Sensing and Convolutional Neural Networks 1091
Yeongho Sung, Jang Keon Kim, Daehun Kim, Taeyang Kwon, Jongmuk Won, Hae Gyun Lim

Experiment of Asia-Europe TWSTFT Link Using New Satellite Express-80 1095
Zhe Gao, Weixiong Wang, Wenjun Wu, Xiang Wang, Dong Guo, Shaowu Dong

Towards Real Time GPU Decoding of Complete Complementary Coded Synthetic Transmit Aperture 1099
Mohamed Tamraoui, Emmanuel Roux, Hervé Liebgott

Screen-Printed Stretchable AgNWs Flexible Transducer for Large Curvature Skin Imaging 1103
Jianzhong Chen, Dawei Wu

Direct Diffusion Bridge for High MB-Count Image Generation in Ultrasound Localization Microscopy 1106
Shaoze Zhang, Henrong Lan, Rui Wang, Xingyue Wei, Zhe Chen, Yiwei Liu, Zuo-Xiang He, Jianwen Luo

Development of Machine Learning Based Classification Method for Carotid Plaques Using Portable 3D Ultrasound 1110
Duo Xu, Haibin Zhang, Yunqian Huang, Man Chen, Rui Zheng

Multi-Task Learning Approach for Automatic Diagnosis and Segmentation of Carotid Atherosclerosis Using Portable 3D Ultrasound 1114
Haibin Zhang, Jiawen Li, Duo Xu, Yunqian Huang, Man Chen, Rui Zheng

A Dual-Phase Annular Array CMUT 1118
Young Jin Cho, Min Chul Kim, Min Seok Kim, Jin Hyuk Kim, Hyeong Geun Jo, Chang Hoon Lee, Kwan Kyu Park

Acoustical Sensitivity and Linearity of an Air-Coupled 3D-Printed Ferroelectret Ultrasonic Receiver 1122
Sven Suppelt, Alexander A. Altmann, Stephan Schaumann, Nils Demuth, Marc Müller, Luise E. Jazdzewski, Tomás E. Gómez Álvarez-Arenas, Christian Bretthauer, Achim Bittner, Mario Kupnik

SmartDAQ: Intelligent Data Acquisition System Enables Low-Latency Photoacoustic Imaging System 1126
Yuwei Zheng, Ruixi Sun, Yuting Shen, Daohuai Jiang, Fengyu Liu, Feng Gao, Fei Gao

Complementary Coded Multiplane Wave Sequence for SNR Increase in 3D Ultrafast Power Doppler Ultrasound Imaging 1129
Mohamed Tamraoui, Emmanuel Roux, Hervé Liebgott

Suppressing Bifurcation in Bolt-Clamped Langevin Ultrasonic Transducers Through AC Current-Driven Control 1133
Sven Suppelt, Jan Helge Dörsam, Carsten Kleber, Alexander A. Altmann, Toni Schmitt, Harald Gietler, Stefan Hess, Mario Kupnik

Development of Integrated Measurement System for Local C-V Mapping and Piezoresponse Force Microscopy 1137
Yuki Noguchi, Takanori Mimura, Takao Shimizu, Hiroshi Funakubo, Yohiomi Hiranaga

Study on Non-Contact Rotation Mechanism Using Single Ultrasonic Transducer : 2nd Report : Installation of Reflector 1141
Toshikazu Hagio, Keisuke Hasegawa, Yuji Lshino, Takeshi Mizuno, Masaya Takasaki

Inspection and Classification of Redistribution Layer Based on Principal Component Analysis of High Dimensional Ultrasound Signal 1144
Min Seok Kim, Hyun Su Kim, Dong Young Kim, Min Chul Kim, Hyeong Geun Jo, Kwan Kyu Park

Vector Measurement of Nonlinear Responses Generated by SAW/BAW RF Devices Using Lock-In Amplifiers 1148
Temma Doi, Tatsuya Omori

Acoustic Field Measurement by Midair Scanning of an Acoustically Levitated Microphone 1152
Tasuku Mizuno, Keisuke Hasegawa

Ultrafast Ultrasound Imaging with a Matrix Array and Sparse Random Aperture for Single Motor Unit Activation Analysis 1156
Marco Carbonaro, Silvia Seoni, Melania Nardella, Alberto Botter, Kristen M. Meiburger

Exploring Clamping Mechanisms for Air-Coupled High-Power Ultrasound Transducers 1160
Jan Helge Dörsam, Christian Kayser, Alexander A. Altmann, Sven Suppelt, Claas Hartmann, Christoph Haugwitz, Sonja Wismath, Sören Soennecken, Mario Kupnik

Max-Divergence Tri-Angle GAN: Optimizing Ultrasound Plane Wave Image Quality with Strategic Angle Selection and Attention Mechanism 1164
Yijia Liu, Shaolun Wang, Na Jiang, Miaomiao Zhang, Zhifei Dai

Towards Natural Multi-DoF Prosthetic Control with Distributed Ultrasound 1168
Bruno Grandi Sgambato, Halla Hakami, Xingchen Yang, Deren Y. Barsakcioglu, Anette Jakob, Marc Fournelle, Alison H. McGregor, Meng-Xing Tang, Dario Farina

High Frequency Hetero Acoustic Layer SAW Resonator Using Quartz Thin Plate on Sapphire 1174
Shota Tanakura, Michio Kadota, Shuji Tanaka

Model-Based Image Reconstruction for Linear Array Optoacoustic Imaging 1178
Roberto M. Scardigno, Silvia Seoni, Christoph Dehner, Antonio Brunetti, Domenico Buongiorno, Guillaume Zahnd, Kristen M. Meiburger

Precise Resonance Frequency Tracking Based on a DSP-Implemented Virtual Vector Voltmeter 1182
Jan Helge Dörsam, Sven Suppelt, Tobias Bossert, Alexander A. Altmann, Claas Hartmann, Christoph Haugwitz, Yannick Schroedel, Tino Lang, Anne Harth, Christoph Heyl, Mario Kupnik

In Quest of Temperature-Dependent Ferroelectric Switching in 50 nm Al0.7Sc0.3N Thin Film 1186
Subhranu Samanta, Chen Liu, Lee Hock Koon, Minghua Li, Binni Varghese, Huamao Lin, Li Chen, Yao Zhu

Biocompatible Hermetic Encapsulation of PMUTs for Usage in Implantable Medical Devices 1189
Esmaeil Afshari, Samer Houri, Rik Verplancke, Veronique Rochus, Maarten Cauwe, Pieter Gijsenbergh, Xavier Rottenberg, Maaike Op De Beeck

High-Frequency Temperature-Stable SAW Filters Based on a Heterogeneous Integrated Multilayered Structure 1193
Yuhan Xiang, Sicong Guo, Xiaomin Chen, Qidong Zhong, Xiuyin Zhang, Changjian Zhou

Structure, Functional, Contrast-Enhanced Photoacoustic Imaging of Metastatic Liver Tumor in Vivo 1196
Jiwoong Kim, Seongwook Choi, Jinge Yang, Hyunseo Jeon, Minsik Sung, Chulhong Kim, Jihye Lee, Hyori Lee, Wonjon Kim

Investigation of AC Poling for PZT/PZT Sol-Gel Composite 1199
Ryota Ono, Makiko Kobayashi

Low-Vacuum Sensing with Silicon-On-Nothing Resonating Membrane 1202
Daniel Ssu-Han Chen, Jihang Liu, David Sze Wai Choong, Duan Jian Goh, Sagnik Ghosh, Jaibir Sharma, Yul Koh

Novel Piezoelectric Ultrasonic Transducer for Die-Casting Process 1206
Mako Nakamura, Yoshihito Kawamura, Shinobu Satonaka, Makiko Kobayashi

High Performance and Low SWaP Oxygen Sensors Based on Piezoelectric Micromachined Ultrasonic Transducers 1209
Miaojie Liu, Yi Gong, Boyun Zhang, Wei Pang, Xuejiao Chen, Menglun Zhang

Non-Invasive HIV Viral Load Prediction Based on Liver Quantitative Ultrasound 1213
Yuzhan Huang, Fei Ji, Xingyue Wei, Hengrong Lan, Qiong He, Wei Lyu, Meng Yang, Jianwen Luo

High-Sensitive Vector Visualization of Nonlinear Harmonic Responses Generated in RF-SAW Devices 1217
Yasuhiro Kawaguchi, Hiroki Gai, Tatsuya Omori

Residual Stress Analysis in ScAlN Micro-Diaphragm for High Sensitivity and Wide Range Pressure Sensing 1221
Jihang Liu, Daniel Ssu-Han Chen, Goh Duan Jian, David Choong Sze Wai, Merugu Srinivas, Lin Huamao, Zhang Qing Xin, Peter Chang Hyun Kee, Domenico Giusti, Alberto Leotti, Filippo D'Ercoli, Carla Lazzari, Riccardo Tacchini, Yul Koh

Vortex-Encoded Waveform Inversion for Fast Musculoskeletal Tomography 1225
Chenchen Zhou, Guoao Ma, Ying Li, Kailiang Xu, Dean Ta

Transformer-Based Knowledge Distillation for Echocardiography Image Segmentation 1229
Sang-Yun Kim, Seok-Hwan Oh, Guil Jung, Youngmin Kim, Hyeon-Jik Lee, Myeong-Gee Kim, Hyuk-Sool Kwon, Hyeon-Min Bae

Innovative Electro-Structural Integration Approach Defining Large-Area PMUT on TFT Backplane for Ultrasound Imaging Systems 1233
Pieter Gijsenbergh, Antonia Malainou, Dominika Wysocka, Robert Ukropec, Alessandro Stoppato, Zhiyuan Shen, Florian De Roose, Raf Appeltans, Veronique Rochus, Xavier Rottenberg

A Matrix Array for Volumetric Imaging Using a Micro-Beamforming ASIC 1237
Benjamin Guérif, Victor Finel, David Savéry, Philippe Vince, Claire Bantignies, Sophana Kok, Marie-Coline Dumoux, Emmanuel Montauban, Maxime Benchemoul, Martin Flesch, Guillaume Férin

Ultrasound Tactile Stimulation Based on Pattern Interference Radiation Force 1241
Min Seok Kim, Young Jin Cho, Min Chul Kim, Chang Hoon Lee, Kwan Kyu Park

The Suppression of Transverse Modes in POI SAW Resonators with Selective Thinning of Silicon Substrate 1246
Menghui Li, Mengke Qi, Yuanhang Chen, Yimin Cheng, Liang Cao, Xiaojing Mu

Velocity Model-Based Aberration Correction and Transcranial Ultrasound Localization Microscopy in the Rat Brain 1250
Yuanyang Guo, Dean Ta, Kailiang Xu

2D Surface Reconstruction Using an air-Coupled pMUT-Based Synthetic Aperture Array 1254
Mantalena Sarafianou, David Sze Wai Choong, Duan Jian Goh, Srinivas Merugu, Qing Xin Zhang, Peter H. K. Chang, Domenico Giusti, Alberto Leotti, Luca Barabani, Adriyan Hidayat Mohamed Hamsah, Yul Koh

Inverse Problem of Ultrasound Plane Wave Imaging with a Low-Rank and Sparse Model 1258
Shaolun Wang, Yijia Liu, Jiajie Zhang, Na Jiang, Miaomiao Zhang

Broadband Spurious Mitigation of LLSAW Devices on Rotated Y-Cut LiNbO3/SiO2/SiC 1263
Peisen Liu, Sulei Fu, Huiping Xu, Boyuan Xiao, Qiufeng Xu, Xinchen Zhou, Shuai Zhang, Qiaozhen Zhang, Rui Wang, Cheng Song, Fei Zeng, Weibiao Wang, Feng Pan

A Designing Method of Multi-Channel Ultrasound Source Signals for Presenting Private Sound Field with Parametric Mixing in Air..... 1267
Tatsuya Ito, Mayasa Takasaki, Kesisuke Hasegawa

Real-Time, High-Frame-Rate, Vector Doppler Ultrasound Imaging by a Hybrid Open Platform 1271
Giulio Bonciani, Alessandro Ramalli, Adeline Bernard, Francesco Guidi, Piero Tortoli, Enrico Boni, Damien Garcia, François Varray

Short-Range Small-Form-Factor 2D Source Localization Using pMUT-Based Delay-Multiply-And-Sum Imaging Towards Catheter Coordination 1274
Mantalena Sarafianou, David Sze Wai Choong, Duan Jian Goh, Srinivas Merugu, Qing Xin Zhang, Peter H. K. Chang, Domenico Giusti, Alberto Leotti, Ravi Shankar, Goutham Koppisetti, Yul Koh

Towards Unparallelled CMOS-Compatible Air-Coupled pMUT Performance with 30% Sc-Doped AlN Through an Analysis of Residual Stress Effects 1278
Jihang Liu, Goh Duan Jian, Daniel Ssu-Han Chen, David Choong Sze Wai, Trivedi Shyam, Prakasha Chigahalli Ramegowda, Merugu Srinivas, Lin Huamao, Zhang Qing Xin, Peter Chang Hyun Kee, Amal Das, Alessandra Sciarrone, Alberto Leotti, Domenico Giusti, Joshua E.-Y. Lee, Yul Koh

Imaging with a Row-Column (RC) Addressed PMUT Array..... 1282
Sanjog Vilas Joshi, Sina Sadeghpour, Rui Amendoeira Esteves, Chen Wang, Michael Kraft

Application of Continuous Wavelet Transform for Time-Of-Flight Ranging Applications Using air-Coupled pMUTs 1286
Mantalena Sarafianou, David Sze Wai Choong, Duan Jian Goh, Srinivas Merugu, Qing Xin Zhang, Peter H. K. Chang, Domenico Giusti, Alberto Leotti, Rossana Scaldaferri, Madan Kunnavakkam, Yul Koh

Nondestructive Ultrasound Molecular Imaging Based on a Neural Network Approach Utilizing Post-Processed Ultrasound Images..... 1290
Jihye Baek, Dongwoon Hyun, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy J. Dahl

Three-Dimensional Consecutive Observation for the Reaction of Brain Immune Cells, Microglia, Using Scanning Acoustic Microscopy..... 1293
Maki Shibata, Daiki Yamanaka, Naohiro Hozumi, Yuki Kawaguchi, Kazuto Kobayashi, Sachiko Yoshida

Trained Compounding Operator to Improve Ultrasound Imaging Frame Rate 1298
Sushanth G. Sathyanarayana, Gurunath Reddy Madhumani, Chandan Kumar Aladahalli

Ultrasound Radiofrequency Image Improves the Tissue Segmentation Performance of Deep Learning Models 1302
Zhun Xie, Nan Ji, Lijun Xu, Jianguo Ma

Fast Full Waveform Inversion Using Reflection Image and Anatomical Prior for Dual-Linear-Array Ultrasound Computed Tomography 1305
Zeyu Zhuang, Hongxiang Lin

Impedance Compensation Method for Ultrasound Sensors 1310
Zewei Lu, Michael Zapf, Wei Hong, Birgit Burger, Simon Kraft, Nicole V. Ruiter

A Novel & OEM Handheld Ultrasound Platform: From Research Innovation to Extended Portable Application Development 1314
Tony Matéo, Damien Joguet, Olivier Gérard, Guillaume Bloino, David Savéry, Nicolas Félix, Martin Flesch, Guillaume Férin

Ultrasonic Imaging and PROFILOMETRY Using Synthetic Aperture with MHz PMUTs in Air 1320
David Sze Wai Choong, Mantalena Sarafianou, Duan Jian Goh, Sagnik Ghosh, Yul Koh

Compensation of Thermal Effects in PZT and Sc0.2Al0.8N PMUTs Through DC Bias Tuning 1324
Duan Jian Goh, Jihang Liu, David Sze Wai Choong, Sagnik Ghosh, Daniel Ssu-Han Chen, Ravi Shankar, Carlo Luigi Prelini, Alberto Leotti, Domenico Giusti, Yul Koh

Hybrid AIR-Coupled Rangefinder with Sputtered PVD PZT and SC0.2AL0.8N PMUTs for Pulse-Echo Applications 1328
David Sze Wai Choong, Daniel Ssu-Han Chen, Mantalena Sarafianou, Duan Jian Goh, Jihang Liu, Sagnik Ghosh, Prakasha Ramegowda, Srinivas Merugu, Qing Xin Zhang, Peter Chang, Amal Das, Alberto Leotti, Carla Lazzari, Domenico Giusti, Yul Koh

A Precise Disciplined Boîtier à Vieillissement Amélioré Oven Controlled Crystal Oscillator for a Radio Telescope Observatory 1332
Geomarr Van Tonder, Johan Burger, Ole Petter Rønningen, Renier Siebrits

3D Ultrafast ICE Image-Based In-Vivo Ablation Catheter Tip Detection 1335
Sebastian Herz, Martina Casagrande, Raja Bandaru, Christoph Hennersperger, Stefan Wörz

A Study on PVD PZT and Sc0.2Al0.8N PMUTS in Series and Parallel Connection for Optimizing Acoustic Performance 1339
David Sze Wai Choong, Daniel Ssu-Han Chen, Mantalena Sarafianou, Duan Jian Goh, Jihang Liu, Srinivas Merugu, Sagnik Ghosh, Prakasha Ramegowda, Qing Xin Zhang, Peter Chang, Joshua En-Yuan Lee, Jason Jia, Alberto Leotti, Luigi Baretta, Domenico Giusti, Alessandro Savoia, Yul Koh

Wearable Ferroelectret Sensors for Muscle Activity Measurements 1343
Niklas Schäfer, Bastian Latsch, Stephan Schaumann, Steffen Graffe, Omid Mohseni, Julian Seiler, Alexander A. Altmann, Omar Ben Dali, Martin Grimmer, André Seyfarth, Mario Kupnik, Philipp Beckerle

Progress on Time Keeping 87Rb Fountain Clock 1347
Hui Zhang, Jun Ruan, Dandan Liu, Sichen Fan, Yang Bai, Yong Guan, Pengyue Lei, Shougang Zhang

A Miniatured and Wearable Photoacoustic Sensing System for Blood Pressure Monitoring 1350
Yexing Fang, Lei Zhao, Haixia Zhang, Yipeng Lu

Towards Efficient Microwave to Optical Signal Transduction Using Confocal High Overtone Lateral Bulk Acoustic Wave Resonators (cXBARs)..... 1354
Elnaz Shokati, Krishna Coimbatore Balram

Feasibility of Detecting and Imaging Deeply Buried Voids Using GHz Half Wavelength Contact Acoustic Microscopy..... 1361
B. A. J. Quesson, D. M. Van Willigen, L. Hörchens, A. M. Gerritsma, J. Bogdanowicz, C. Chen, P. L. M. J. Van Neer

Nonlinear Difference-Frequency Ultrasound Via Dual-Annular Capacitive Micromachined Ultrasonic Transducer Array..... 1364
Keun Young Huh, Dong-Hun Kim, Dong-Hyun Kang, So-Yun Shin, Byung Chul Lee

Characterization of Two-Photon Polymerization 3D Printing Materials for Acoustic Matching Layer and Lens Fabrication..... 1368
Tönnis Trittler, Anna Luisa Recknagel, Susan Walter, Severin Schweiger, Robert Kirchner, Sören Köble, Julian Kober, Jochen Hampe, Gerhard Fettweis, Henning Heuer, Moritz Herzog

Temperature Coefficients of Transverse Elastic Properties of Scandium-Doped Aluminum Nitride (ScAlN) Thin Film Grown on Preformed Cavities..... 1372
Sagnik Ghosh, Prakasha Chigahalli Ramegowda, Duan Jian Goh, Jaibir Sharma, Yul Koh, Joshua Lee

Increasing Microbubble Concentrations in Microvascular Imaging Via Microbubble Separation by Means of Orthogonal Frequency Division Multiplexing..... 1376
Giulia Tuccio, Lisa Te Winkel, Corinne Bruggeman, Wim Van Hoeve, Libertario Demi

Delay Multiply and Sum Beamforming in 3D Coherent Multi-Transducer Ultrasound for Contrast Enhancement in the Presence of Acoustic Clutter..... 1380
Paul Dryburgh, Daniele Mazierli, Joseph V Hajnal, Piero Tortoli, Alessandro Ramalli, Laura Peralta

Developing a Novel High-Fidelity Model to Investigate the Feasibility of Ultrasound-Targeted Nanodroplets Opening the Blood-Brain Barrier..... 1384
Tianyu Guo, Yuantong Zhong, Xinnan Wang, Feihong Dong, Xianhua Wang, Heping Cheng, Jue Zhang

Wafer Level Demonstration and Characterization of c-Axis Oriented Sc0.3Al0.7N Bilayer Stacks..... 1388
Huamao Lin, Peng Liu, Daniel Ssu-Han Chen, Binni Varghese, Veronica Wong, Minghua Li, Yan Hong, Yat Fung Tsang, Qing Xin Zhang, Peter Hyun Kee Chang, Naadaa Zakiyyan, Goutham Koppisetti, Amal Das, Dao Hao Sim, Yee Lung Lee, Alberto Leotti, Yao Zhu

Picosecond Acoustic Interferometry for Characterizing Properties of SiO2 Layer in POI Materials..... 1392
Pingxu Chen, Xianrui Shi, Siyi Tian, Longyue Liang, Wen Hu, Tao Han

Advancing 3D ICE: Challenges and Deep Learning Strategies in Atrium Segmentation..... 1396
Martina Casagrande, Quan Nguyen, Ivan Dudurych, Christoph Hennersperger, Stefan Wörz

Effect of Surface Charge Modification on the Imaging Performance of Targeted Microbubbles..... 1399
Yuantong Zhong, Tianyu Guo, Feihong Dong, Jue Zhang

Acoustic Cavitation Enhanced Delamination of Technology Critical Metals from Electronic Waste Using Green Solvents..... 1402
Shida Li, Ben Jacobson, Andrew Feeney, Christopher E Elgar, Andrew P Abbott, Paul Prentice

Innovative Glass-Encapsulation for Double-Side-Processed BAW Filters 1406
Ji Liang, Xiaoru Wang, Jie Zou, Duan Feng

Electrical Properties and Stability Study on Lead-Free Homo- And Heterovalent Substituted Bi0.5Na0.5TiO3 Thin Films for Energy Storage..... 1410
Herbert Kobald, Alexander M. Kobald, Ivana Panzic, Marco Deluca

Energy Detector Based on MEMS-CMOS Co-Design for Wake-Up Receivers 1417
Jingsong Liu, Maoyang Qiu, Fuhong Lin, Qinghua Huang, Shumin Liu, Chengjie Zuo

Intelligent Diagnosis of Prostate Tumors Based on Depth-Wise Separable Convolutional Neural Network Using Transrectal Ultrasound B-Mode Images..... 1421
Yuzhan Huang, Min Lu, Hengrong Lan, Qiong He, Shuai Fu, Jianwen Luo

Acoustic Waveform Optimization for Improved Mild Hyperthermia in Cancer Therapy..... 1425
David Bustamante, Yan Yan, Nebojsa Duric, Mohammad Mehrmohammadi

Monte Carlo Algorithm Accelerated Distance-Weighted Spatiotemporal Non-Local Means Filtering in Ultrafast Power Doppler Imaging 1429
Zhe Chen, Lijie Huang, Yinran Chen, Rui Wang, Hengrong Lan, Xingyue Wei, Shaoze Zhang, Qiong He, Jianwen Luo

Ultrasound Tomography with a Ring Array Ultrasound Transducer for Image-Guided Activation of Phase-Change Nanodroplets..... 1433
Yan Yan, David Bustamante, Gaofei Jin, Catalina Spatarelu, Geoffrey Luke, Mohammad Mehrmohammadi

A1-Mode Lamb Wave Resonator in 128° Y-Cut Lithium Niobate with Electromechanical Coupling Coefficient of 57% 1437
Meijuan Li, Kai Yang, Jiming Fang, Fuhong Lin, Chengjie Zuo

In-Situ Performance Evaluation of silicon-Based Ultrasonic Transducer Under Extreme Thermal Conditions 1441
Seonghun Cho, Dong-Hyun Kang, Jungmin Lee, Woosung Park, Jae-Woong Jeong, Arif Sanli Ergun, Butrus T. Khuri-Yakub, Byung Chul Lee

A Dual-Modal Sensor Fusion System for Bladder Volume Monitoring..... 1445
Jun Wang, Zeyang Dai, Minghao Li, Dasong Zhuang, Xiao Liu

Structural and Dielectric Characterization of AgNbO3-Based Thin Films from Chemical Solution Deposition 1449
Alexander M. Kobald, Herbert Kobald, Ivana Panzic, Marco Deluca

Transformation of Heat Conductivities for Accurate Thermal Modelling of SAW Resonators 1455
Hulin Yao, Shibin Zhang, Pengcheng Zheng, Xiaoli Fang, Dongchen Sui, Mijing Sun, Xin Ou

Differentially Driven Dual-Electrode Air-Coupled AlN PMUTs with Enhanced Transmission Efficiency 1459
Chun-Yu Chou, Sheng-Shian Li

Three-Port Piezoelectric Microphone with Stiffness Modification Based on DC Bias..... 1462
Zhiwei You, Chong Yang, Lei Zhao, Yipeng Lu

An Ultrasound and Photoacoustic Dual-Mode Temperature Imaging Method and System Based on EM-UNet Deep Learning Network 1466
Yiming Ma, Lingyu Ma, Yuelin Han, Leixi Zhang, Zezheng Qin, Mingjian Sun

Polarization-Inverted Growth of ScAlN Thin Film by Si Doping 1472
Ayaka Hanai, Yohkoh Shimano, Takahiko Yanagitani

The 1529 nm Laser Stabilization Based on Dual-Wavelength Modulation Transfer Spectroscopy 1475
Jie Miao, Jingming Chen, Jiqing Lian, Qiaohui Yang, Zhendong Chen, Duo Pan, Jingbiao Chen

Compact 780 nm Rb Optical Frequency Standard on "Optical Cubes" 1477
Qiaohui Yang, Tianyu Liu, Jiqing Lian, Chuanwen Zhu, Jie Miao, Zhendong Chen, Jingmin Chen, Duo Pan, Jingbiao Chen

Design and Implementation of a FPGA-Based Airborne Ultrasound Sensing and Radiation Phased Array Device 1480
Cheng-Fong Li, Man-Yung Yang, Guo-Wei Hong, Hao-Li Liu

Linear Optical Sampling Detection Electronics with Low Group-Delay Distortion 1484
Shen Zhang, Qi Shen, Min Li, Meng-Zhe Lian, Lei Hou, Jian-Yu Guan, Shengkai Liao, Hai-Feng Jiang

A Multi-Frequency-Based Broadband ScAlN PMUT Array 1487
Jingqi Chen, Hanzhang Liu, Yinjie Ma, Zhenyu Li, Xiaoxiang Gao, Chuan Chen, Zunliang Wang, Xiaoduo Zhang, Hui Li, Feng Yin

Improving ESD Robustness in DBAW Filters Via Optimized Release Hole Clearance Design 1492
Ji Liang, Xiaoru Wang, Duan Feng, Jie Zou

Stability Analysis of Monodisperse Microbubbles Composed of Different Lipid Formulations 1495
Chang Lu, Hongyi Zhang, Ruchuan Shi, Peng Qin

Development of Optical System Utilizing Mirror and Reflector 1498
Doogyu Lee, Hyoung Won Baac

High Spatiotemporal Resolution Ultrasound Imaging Based on Single Plane Wave 1501
Yaoting Yue, Yijun Xu, Chen Jiang, Xin Liu, Dean Ta

D-Baw Uniformity Improvement by Resonator Thickness Compensation 1505
Jian Wang, Duan Feng, Jie Zou

High Frequency LLSAW Filters with Higher Order Modes Elimination Based on LiNbO3/SiO2/Sapphire Substrate 1508
Boyuan Xiao, Sulei Fu, Huiping Xu, Peisen Liu, Qiufeng Xu, Xinchen Zhou, Qiaozhen Zhang, Rui Wang, Cheng Song, Fei Zeng, Weibiao Wang, Feng Pan

An Algorithm Optimization Method for Time-Interval Measurement with Linear Optical Sampling 1512
Ganbin Lu, Ziyang Chen, Dongrui Yu, Xinbo Li, Bin Luo, Hong Guo

Photoacoustic 3D Brain Phantom and Multi Speed of Sound Reconstruction 1515
Fan Zhang, Shangqing Tong, Ruixi Sun, Sheng Liao, Yuwei Zheng, Feng Gao, Hulin Zhao, Fei Gao

Battery Status Monitoring Based on Advanced Ultrasonic Technology 1519
Jiao Xia, Ting Xie, Yiwei Guo, Junhao Wang, Yipeng Lu

Fast Prediction for Dispersion Curves in Pipes Based on Neural Network 1523
Han Yang, Siqi Zhang, Haichao Liu, Xiaobin Jiang, Zhoumo Zeng, Yang Liu

Device Design for the Rapid Ultrasonic Rewarming of Alginate Beads and Cryoprotectant Solution to Improve Cryopreservation Recovery 1527
Rui Xu, Thomas Brookshaw, Eloy Erro, Morgan Roberts, Clare Selden, Eleanor Martin

Tandem Pulse Sequence: Immediate Appearance of Hypoechoic Liquefaction Region and Increased Lesion Size After Boiling Histotripsy 1533
Baicheng Xing, Yufeng Zhou

3D Ultrasound Imaging with Active Instrumented Needle Tip Tracking: An Ex Vivo Study 1537
Javad Rostami, Christian Baker, Weidong Liang, Simeon West, Tom Vercauteren, Sunish Mathews, Adrien Desjardins, Edward Zhang, Paul Beard, Sebastien Ourselin, Laura Peralta, Wenfeng Xia

Towards GHz Low Phase Noise Oscillators with Electro-Optomechanical Resonators 1541
Thomas Furcatte, Joan Barceló, Wioletta Trzpil, Mathis Lefebvre, Marc Gely, Munique Kazar Mendes, Guillaume Jourdan, Sébastien Hentz, Marc Sansa

Fibre-Optic Photoacoustic Beacon and 2D Sparse Sensor Array for 3D Tracking of Needles..... 1545
Christian Baker, Weidong Liang, Richard Colchester, Peng Lei, Francois Joubert, Sebastien Ourselin, Simeon West, Athanasios Diamantopoulos, Adrien Desjardins, Wenfeng Xia

Rectangular PMUT Phased Array with High Fill-Factor and High Sound Pressure Level 1549
Lei Zhao, Chong Yang, Yiwei Guo, Yipeng Lu

Selectively Tuning the In-Plane Orientation of Resonators in SAW Filters for Flatter Out-Of-Band Characteristics 1553
Jinbo Wu, Shibin Zhang, Liping Zhang, Pengcheng Zheng, Xiaoli Fang, Xuedi Tian, Xinjian Ke, Kai Huang, Xin Ou

A Compact Rubidium Optical Clock Based on Modulation Transfer Spectrum 1557
Zhendong Chen, Ruoao Yang, Yang Qiaohui, Tianyu Liu, Ya Wang, Jie Miao, Duo Pan, Jianjun Wu, Zhigang Zhang, Jingbiao Chen

Low-G Sensitivity Design and Implementation for Commercial Quartz Crystal Oscillators..... 1560
Chien-Cheng Yang, Yi-Chia Chen, Chin-Yu Chang, Sheng-Shian Li

A Comprehensive Thermal Stability Analysis of D-BAW Structures Employing Dry Film Bonding Materials..... 1563
Weiwei Hu, Youliang Wang, Jiayi Tang, Jian Wang, Duan Feng, Jie Zou

Detection of a Notch Type Defect at 0°, 45° and 90° Orientations by a Network of Interdigitated Piezopolymer Transducers for Structural Health Monitoring..... 1567
Lorenzo Taddei, Lorenzo Capineri

A Simplified and Wafer-Level Thin Film Characterization of Transverse Piezoelectric Coefficient 1570
Chong Yang, Jingwei He, Lei Zhao, Zhiwei You, Aocheng Bao, Isaku Kanno, Yipeng Lu

Attention USR-Net: An End-To-End Mapped Ultrasound Localization Microscopy 1574
Huaying Li, Baohui Fang, Zelin Ye, Fengling Meng, Yinran Chen

Improved Photoacoustic Beamforming Utilizing Apodization Windows..... 1578
Yu Weng, Filip Bodera, Elizabeth Berndl, Eno Hysi, Shrishti Singh, Remi Veneziano, Parag V. Chitnis, Mark McVey, Michael Kolios

High-K2eff High Frequency BAW Resonators Based on Single-Crystal Polarity-Inverted AlxSc1-XN Piezoelectric Films 1583
Pengcheng Zhu, Chongyang Huo, Xuanqi Huang, Wanchun Ren, Yang Gao, Zhiqiang Mu, Wenjie Yu

Effects of Acoustic Parameters of Low-Intensity Ultrasound on Breast Cancer Cells and Applications in Neoadjuvant Chemotherapy 1586
Yan Chen, Kepeng Zhu, Wenzhi Chen, Alfred C H Yu, Xinxing Duan

8-25 GHz Broadband Experimental Quality Factor Extraction of 30% ScAlN with Acoustic Delay Lines 1590
Gabriel Giribaldi, Luca Colombo, Jack Guida, Kapil Saha, Siddhartha Ghosh, Matteo Rinaldi

A PMUT-Based Wearable Ultrasound System for Central Blood Pressure Monitoring 1594
Hang Yang, Hanzhang Liu, Jingqi Chen, Xiaoxiang Gao, Chuan Chen, Zunliang Wang, Xiaoduo Zhang, Hui Li, Feng Yin

Curved Cantilever Actuated ScAlN PMUT for Enhanced Linearity and Transmit Sensitivity 1600
Shyam Trivedi, Duan Jian Goh, Prakasha Chigahalli Ramegowda, David Sze Wai Choong, Jihang Liu, Daniel Ssu-Han Chen, Yong Shun Teo, Srinivas Merugu, Hong Yan, Qing Xin Zhang, Yul Koh, Alberto Leotti, Ravi Shankar, Naadaa Ghulaam Zakiyyan, Amal Das, Carla Lazzari

Exploring Parkinson's Disease Classification Through Muscular Ultrasound: A Preliminary Study 1604
Bin Zha, Yongsheng Lin, Yixi Zhou, Zili Wang, Yongjin Zhou, Lijuan Du

A Multi-Bandwidth Photoacoustic Tomography Imaging System Suitable for Small Animals 1608
Zezheng Qin, Zhigang Lei, Lingyu Ma, Yiming Ma, Mingjian Sun

Impact of a Trap-Rich Layer on the Performance of D-BAW Resonators 1613
Weiwei Hu, Youliang Wang, Duan Feng, Jie Zou

A Ku-Band 2nd Order Mode FBAR Based on Bilayer Polarity-Inverted Single Crystal AlN Films 1617
Jinghong Lu, Chongyang Huo, Jiaqi Fu, Ruidong Qin, Zhiqiang Mu, Wenjie Yu

Ring-Shaped Transparent and Broadband Ultrasonic Transducer for Photoacoustic Systems 1621
Yexing Fang, Ting Xie, Mengyue Zhang, Changhui Li, Haixia Zhang, Yipeng Lu

Developing a Phased PMUT Array Patch for Cardiac Health Monitoring 1625
Milind Pandit, Jo Aerts, Daniel Barbosa, Marco Forlin, Peter Deruytere, Epimitheas Georgitzikis, Tomoatsu Kinoshita, Veronique Rochus, Xavier Rottenberg, Erwin Hijzen

ScAlN Thick Film Concave Lens Transducer in the 20-90 MHz 1629
Zhanyu Lai, Yohkoh Shimano, Itsuki Endo, Junjun Jia, Takahiko Yanagitani

Underwater Ultrasound Communication Based on PMUTs with DC Bias Voltage 1633
Yiwei Guo, Chenyuan Zhang, Chong Yang, Jiao Xia, Wei Wang, Yipeng Lu

Enhanced Coupling Coefficient of Surface Acoustic Wave on AlN Film/High-Velocity Substrates with Periodic Trough Structure 1637
Huiling Liu, Qiaozhen Zhang, Hao Sun, Xiuli Gao, Nan Wang, Yuandong Gu

A High Fill-Factor High Density Large PMUT Phased Array 1641
Hanzhang Liu, Jingqi Chen, Yinjie Ma, Zhengyu Li, Xiaoxiang Gao, Chuan Chen, Zunliang Wang, Xiaoduo Zhang, Hui Li, Feng Yin

High-Frame-Rate Tri-Plane Echocardiography Using a Dense 512-Element Matrix Array 1647
Fatemeh Shahbazi, Marcus Ingram, Sophie V. Heymans, Alessandro Ramalli, Jan D'Hooge

2D Phased Array Driving Scheme Optimization for Ultrasound Neuromodulation 1651
Masoumeh Aqamolaei, Tiago L. Costa

CMOS Integrated Optically Driven Sonic Fourier Transforms 1655
Luis Amaro, Yutong Liu, Justin Kuo, Amit Lal

Detection of Surface Icing Based on Piezoelectric Micromachined Ultrasonic Transducers (PMUTs) 1659
Ting Xie, Junhao Wang, Chong Yang, Jiao Xia, Wei Wang, Yipeng Lu

Comparison of Radio Frequency Vs Beamformed Ultrasound Data for Infarct Classification with CNNs 1663
Paulo Tostes, Anca E Balinisteanu, Sara Moura Ferreira, Helena Williams, Jens-Uwe Voigt, Jan D'Hooge

Preclinical Vibrational Shear Wave Elastography: Effect of Anaesthesia and Tumour Alignment on Repeatability 1667
John Civale, Vaideesh Parasaram, Jeff Bamber, Emma Harris

A Robust Wearable Pre-Voiding Alarm System with High Tolerance to Sensor Placement Errors 1671
Jun Wang, Zeyang Dai, Minghao Li, Dasong Zhuang, Xiao Liu

Total Variational Robust PCA for Ultrasound Microvascular Clutter Filtering 1675
Baohui Fang, Huaying Li, Yinran Chen

Near-Field High-Pressure for Tactile Stimulation Based on Under-Glass Capacitive Micromachined Ultrasonic Transducer (CMUT) 1679
Min Chul Kim, Young Jin Cho, Min Seok Kim, Jin Hyuk Kim, Hyeong Geun Jo, Chang Hoon Lee, Kwan Kyu Park

5.8-GHz Coupled Shear SAW Resonator Based on Z-Cut LiNbO3/SiO2/Si Substrate 1683
Jie Chen, Kai Yang, Fuhong Lin, Haoran Tao, Jiming Fang, Chengjie Zuo

Scattering-Based Defect Characterisation Using Laser Ultrasound Arrays 1687
Peter Lukacs, Geo Davis, Don Pieris, Jie Zhang, Katy Tant, Theodosia Stratoudaki

Cauchy-Norm-Based Sparse-SVD Method for Ultrafast Ultrasound Small Blood Flow Clutter Filtering 1691
Haotian Wu, Shaoyuan Yan, Dean Ta, Jean-Gabriel Minonzio, Kailiang Xu

Properties of Textured Piezoceramics Measured with Miniature Samples 1695
Anna Alexandrou, Yijia Hao, Zhen Zhang, Sakineh Fotouhi, Bo Liu, Sandy Cochran, Richard L. O'Leary

Open-Source Fully-Programmable Flow Phantom for Doppler Ultrasound 1699
Sergei Vostrikov, Josquin Tille, Ilia Nazemtsev, Luca Benini, Andrea Cossettini

Mapping Testicular Tumor Microvasculature with Super-Resolution Ultrasound Imaging 1703
Daniel Lock, Jaime Parra Raad, Dean Y. Huang, Cheng Fang, Paul S. Sidhu, Mengxing Tang, Kirsten Christensen-Jeffries

Non-Contact Rotation by Acoustic Streaming Generated by a Cylinder with Multiple Small Through-Holes 1707
Manabu Aoyagi, Naoki Karakizawa, Yimeng Wang, Kohei Aono

Concurrent Pulse-Echo and Through-Transmission Ultrasound Tracking with Multi-Frequency PMUTs 1710
Teng Zhang, Shenglin Hou, Ashwin A. Seshia

Flow Angle Determination for a Heart Phantom Using Transverse Oscillation 1714
Evangelos Vouros, Billy Y. S. Yiu, Jørgen Arendt Jensen

Study on Passive Intermodulation in I.H.P. SAW Utilizing a Nonlinear FEM Model 1718
Luyang Liu, Wenxuan Li, Jinyi Ma, Ruchuan Shi, Tao Han

A Flexible Row-Column Array for Deep Tissue Microvascular Imaging 1722
Huaiyu Wu, Sunho Moon, Benjamin C. Kreager, Qi You, Pengfei Song, Xiaoning Jiang

Study on Noncontact Driving of Disk by Piezoelectric Transducer Under Cryogenic Condition 1726
Takefumi Kanda, Koa Yasuda, Takumi Nishida, Kazuki Kubo, Daisuke Yamaguchi, Shuichi Wakimoto

Low-Loss Higher-Order Cross-Sectional Lamé Mode SAW Devices in 10-20 GHz Range 1729
Ian Anderson, Tzu-Hsuan Hsu, Vakhtang Chulukhadze, Jack Kramer, Sinwoo Cho, Omar A. Barrera, Joshua Campbell, Ming-Huang Li, Ruochen Lu

High Temperature Liquid Level Monitoring Using Capacitive Micromachined Ultrasound Transducer (CMUT) 1733
Nooshin Saeidi, Karman Selvam, Meghana Vishwanatha, Maik Wiemer, Harald Kuhn

Underwater Sensing Applications Using Capacitive Micromachined Ultrasonic Transducers (CMUTs) 1736
Meghana Vishwanatha, Karman Selvam, Nooshin Saeidi, Maik Wiemer, Harald Kuhn

Acoustic Confinement in XBARs 1740
John P. Koulakis, Azarin Zarassi, Sean McHugh

Toward Achieving Critical Coupling in Phononic Integrated Circuits 1745
Mahmut Bicer, Krishna C. Balram

Synthesizing Ultrasound Datasets Using Mask Conditional Diffusion Models 1749
Harsh Suthar, Naveen Paluru, Prasad Sudhakar, Avinash Gopal, Pavan Annangi

High Frequency Ultrasound Transducers for Imaging of Arterial Structures with Increased Blood-Tissue Contrast 1754
Benjamin C. Kreager, Huaiyu Wu, Wei-Yi Chang, Jian Tian, Xiaoning Jiang

Size-Selected Microbubbles for Superharmonic Contrast Imaging 1758
Jing Yang, Amin Jafari Sojahrood, David G. Goertz, F. Stuart Foster, Christine E. M. Demore

Reconstruction of Plane-Wave Imaging Using Dual-Domain Hybrid Neural Network 1764
Tianli Wang, Yu Qiang, Weibao Qiu, Xinyu Zhang, Yuanyuan Shen, Minhua Lu, Xin Chen, Yanyan Yu

Nonlinearity Analysis of Dual-Electrode Piezoelectric Micromachined Ultrasonic Transducer 1768
Junxiang Cai, Mingye Du, Tao Wu

Anti-Reflective Microengineered Substrate for in Vitro Ultrasound Neuromodulation 1772
Gandhika K. Wardhana, Tiago L. Costa, Massimo Mastrangeli

Frequency Estimator to Improve H-Scan Tissue Characterization 1776
Jihye Baek, Thurston Brevett, Dongwoon Hyun, Ahmed El Kaffas, Kevin J. Parker, Jeremy Dahl

A Graph-Based Realistic 3D Microvascular Flow Simulation for Ultrasound 1779
Andre Ráth, Lotte De Winter, Lauge Naur Hansen, Mikkel Schou, Sofie Bech Andersen, Stinne Byrholdt Søgaard, Nathalie Sarup Panduro, Charlotte Mehlin Sørensen, Hans Martin Kjer, Anders Bjorholm Dahl, Jørgen Arendt Jensen

Lithium Niobate Resonators for Power Conversion : Spurious Mode Suppression Via an Active Ring 1782
Vakhtang Chulukhadze, Eric Allen Stolt, Clarissa Daniel, Juan Rivas-Davila, Ruochen Lu

Ferroelectric Properties and Fatigue Behavior of {100} Textured 1-µm Thick PZT Films by Chemical Solution Deposition 1786
M. Ugalde-Reygadas, M A. Badillo-ávila, M. Acuautla

3D Ultrasound Microbubbles Localization Using Object Detection Model 1793
Xilun Liu, Mohamed Almekkawy

A Multi-Parametric Model for Progression of Metabolic Dysfunction-Associated Steatohepatitis (MASH) in Humans 1797
Jihye Baek, Sergio Sanabria, Ignacio Oyarzabal, Jose J Echevarria-Uraga, Carlos Quesada, Jeremy Dahl, Kevin J. Parker

A Novel Nonlinear Frequency Compounding Method for B-Mode Imaging 1800
Yuling Chen, Ching-Hua Chou, Ting-Lan Ji, Albert Gee, Zhao Ling Lu, Dave Napolitano, Donald Liu, Xiaowen Hu, Alejandro Garcia-Uribe, Satchi Panda, Wenli Bai

Comparative Analysis of Mismatched Filtering Techniques: Cyclic Vs. Non-Cyclic Approach 1804
Cornelius Kühnöl, Edgar Dorausch, Tönnis Trittler, Julian Kober, Omid Chaghaneh, Alessandro Ramalli, Enrico Boni, Gerhard Fettweis, Jochen Hampe, Moritz Herzog

Characterization of Anisotropic Lattice Structured Phantoms Using 3D-Rotational Shear Wave Elasticity Imaging (3D-RSWEI) 1808
Shruthi Srinivasan, Daniel Yoon, Margrethe Ruding, Kevin Eckstein, Ned C. Rouze, Wren E. Wightman, Mark L. Palmeri, David P. Bradway, Derek Y. Chan, Kaden D. Bock, Philip V. Bayly, Kathryn R. Nightingale

The Glow Discharge Plasma Polarization Effect on PVDF Film Properties 1812
Basov B. A., Makarova K. T., Buryanskaya E. L., Moiseev K. M., Osipkov A. S., Maltsev A.

Application of Transfer Learning for Breast Cancer Diagnosis Based on Three-Dimensional Ultrasound Images 1818
Xinyi Wen, Yang Xiao, Sijie Chen, Weibao Qiu, Minhua Lu, Xin Chen, Yanyan Yu

Multispectral Photoacoustic Imaging of Breast Cancer Tissue 1822
Junhao Zhang, Junior Arroyo, Muyinatu A. Lediju Bell

A Generalized SNR to Quantify Lesion Detectability for Modern Adaptive Beamformers 1826
Siegfried Schlunk, Brett Byram

Simplified Ultrasonic Imaging Sensor Based on Distributed Electrode Activation Control 1830
Mohammad Syaryadhi, Eiko Nakazawa, Norio Tagawa, Ming Yang

Growth of 33°Y-LiNbO3 Films on High-Temperature Stable Bragg Mirrors for High-Frequency BAW Resonators 1834
S. Boujnah, L. Arapan, J. M. Carmona Cejas, M. Clement, Q. Micard, M. Ivan, V. Astié, P. De Visme, M. Micolle, F. Sthal, J. M. Decams, S. Margueron, A. Bartasyte

Obstacle-Crossing Self Focused Acoustic Transducer Based on Bessel Beams..... 1837
Jiaqi Li, Zhenhuan Sun, Hai Liu, Song Liu

Design of an Array Transducer for Localizing Microbubble Activity Through the Skull 1841
Malachy Newman, Jiro Kusunose, M. Anthony Phipps, Allison Dockum, Ainsley McDonald-Boyer, Charles Caskey

Experimental Demonstration of a Plasmonically-Enhanced Vacuum-Packaged LVR-Based Gas Sensor 1846
Aurelio Venditti, Farah Ben Ayed, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi

Multifrequency Encoding in PINNs for Precision Wave Equation Modeling in Inhomogeneous Media..... 1852
Shaikhah Alkhadhr, Mohamed Almekkawy

Phononic Frequency Combs in Beam Structures 1856
Yook-Kong Yong

Vendor-Independent Non-Intrusive Synchronization Signals Capture from Clinical Ultrasound Machines 1860
Keshuai Xu, Jintan Zhang, Laeben Lester, Jeeun Kang, Emad Boctor

A Millimeter Wave Ferroelectric Hafnium Zirconium Oxide-Based Programmable Antenna..... 1863
Samuel Quaresima, Nicolas Casilli, Vitaly Petrov, Josep Miquel Jornet, Luca Colombo, Benyamin Davaji, Cristian Cassella

FPGA-Accelerated Hybrid Lossless and Lossy Compression for Next-Generation Portable Optoacoustic Platforms 1868
Federico Villani, Sevrin Mathys, Çagla Özsoy, Xosé Luís Deán-Ben, Andrea Cossettini, Michele Magno, Daniel Razansky, Luca Benini

Genetic Algorithm-Based Sparse Matrix Beamforming..... 1873
Rui Amendoeira Esteves, Sina Sadeghpour, Chen Wang, Michael Kraft

Time-Reversing Ultrasonic Transducer for Guided Wave Inspections..... 1877
Masoud Mohammadgholiha, Luca De Marchi

A Novel Method for Ultrasound Attenuation Imaging Based on Mechanical Reciprocity and Acoustic Radiation Force 1881
Fan Feng, Siladitya Khan, Stephen McAleavey

Physical Properties of LiNbO3 Films with Controlled Stoichiometry Grown by DLI-CVD..... 1885
Q. Micard, V. Astié, L. La Spina, S. Oliveri, P. Boulet, S. Margueron, J. M. Decams, A. Bartasyte

21.4 GHz Surface Acoustic Wave Resonator with 11,400 M/s Phase Velocity in Thin-Film Lithium Niobate on Silicon Carbide 1888
Joshua Campbell, Ian Anderson, Tzu-Hsuan Hsu, Omar A. Barrera, Jack Kramer, Sinwoo Cho, Vakhtang Chulukhadze, Gavin Latham, Ming-Huang Li, Ruochen Lu

Shear-Wave Pulse-Compression Elastography Using a Modulated Acoustic Radiation Force Excitation 1892
Enrique González-Mateo, Josep Rodríguez-Sendra, Francisco Camarena, Noé Jiménez

Digital Phantoms for Quantitative Ultrasound and Photoacoustic Characterization of Thrombosis 1895
Momina Masood, Sullivan Lauderdale, Alycen Wiacek

Design and Fabrication of 128+128 Element Row-Column Addressed CMUT Arrays for Monitoring Murine Cardiac Flow Patterns 1899
Nairit Das, Eda Begum Erdogan, Muhammetgeldi Annayev, Feysel Yalcin Yamaner, Jeffrey Ketterling, Ömer Oralkan

Highly Efficient T-Shaped Piezoelectric Micromachined Transducer 1903
Mohammadreza Kolahdouz Moghaddam, Amirhossein Moshrefi, Seyedfakhreddin Nabavi, Frederic Nabki

Ultrasound Attenuation Coefficient Estimation: Comparison Among Different Beamforming and Data Acquisition Methods 1907
Hamid Moradi, Farah Deeba, Robert Rohling

Aberrating Murine Skull Microvascular Phantom for Super-Resolution Ultrasound Imaging 1910
Jaime Parra Raad, Mark Solomon, Daniel Lock, Kirsten Christensen-Jeffries

GCNR Regularization Improves Deep Neural Network Beamformers 1914
Ying-Chun Pan, Christopher Khan, Ryan Lefevre, Susan Eagle, Brett Byram

A MEMS Phase Comparator Using Three Air Coupled Triangular MEMS Resonators 1918
Seyedfakhreddin Nabavi, Mathieu Gratuze, Frederic Nabki

Ultrasound Characterization of Oral Soft Tissues in Vivo Using the Burr Speckle Model 1922
Daria Poul, Ankita Samal, Amanda Rodriguez Betancourt, Carole Quesada, Hsun-Liang Chan, Oliver D. Kripfgans

Wideband Air-Coupled Piezoelectric MEMS Ultrasonic Transceiver 1926
Seyedfakhreddin Nabavi, Mathieu Gratuze, Frederic Nabki

A Differentiable Physics Approach for Unsupervised Ultrasound Computed Tomography 1929
Mohammad Wasih, Mohamed Almekkawy

Ultrasound Image Enhancement with the Variance of Diffusion Models 1932
Yuxin Zhang, Clément Huneau, Jérôme Idier, Diana Mateus

Automatic Segmentation of Placenta for Quantitative Ultrasound Analysis 1937
William Hempstead, Robert Rohling, Farah Deeba

Guiding Light Through Absorbing Structures Using a Linear Transducer at Diagnostic Intensities 1941
Volodymyr Rohovets, Georg Schmitz, Maxim Cherkashin

Combining Gas Vesicle Acoustic Contrast Agents with Field-Deployable GHz Frequency Ultrasonic Chips to Detect Gene Expression in Sentinel Microorganisms 1945
Ishaan Dev, Anuj Baskota, Mikhail Shapiro, Amit Lal

Sparse EWI: Towards an Automated and Real-Time Arrhythmia Mapping Technique 1949
Christina Proestaki, Melina Tourni, Yik Tt Ling, Elisa E. Konofagou

Harsh Environment SAW Resonators on Thin Film Lithium Niobate Substrate for RF Wireless Sensing Applications 1952
Amr O. Ghoname, Ahmed E. Hassanien, Edmond Chow, Songbin Gong

A Meta Matching Layer to Image Behind Calcified Plaques 1956
Ashkan Ghanbarzadeh-Dagheyan, Erqian Dong, Nicholas Xuanlai Fang

Advancing Muscle Monitoring and Intervention: Wearable Ultrasound for Tremor Frequency Measurement and Real-Time Tissue Displacement Analysis 1962
Xiangming Xue, Sunho Moon, Vidisha Ganesh, Qianqian Cai, Akshar Patel, Nitin Sharma, Xiaoning Jiang

Automated Segmentation of M-Mode Lung Ultrasound Images Obtained from a Single-Element Wearable Ultrasonic Sensor 1966
Khoa Tran, Yuu Ono, Sreeraman Rajan, Robert Arntfield

3D Multi-Plane Multi-Resolution Shear Wave Elastography 1971
Abdelrahman Elmeliegy, Matthew W. Urban, Lynn B. Munday, Murthy N. Guddati

Feasibility of Early Myocardial Infarction Detection in the Emergency Department Using Maximum Principal Strain 1973
Hannah Schleifer, Di Coneybeare, Jad El Harake, Yik Tung Tracy Ling, Elisa E. Konofagou

Precision Self Sensing and Compensation Applications of Crystal Oscillators 1977
Wei Zhou, Jiale Peng, Zhiqi Li

Portable Fungi Growth Detection of Botrytis Cinerea Enabled by Swept Frequency GHz Ultrasonic Imaging 1983
Daria Shkel, Justine Vanden Heuvel, Kerik Cox, Kirstin Petersen, Amit Lal

Spatial Calibration for Swept Synthetic Aperture Imaging Using Differentiable Beamforming 1988
Anet Sanchez Perez, Jacob Spainhour, Isaac Martinez, Nick Bottenus

Encoded Multi-Line Transmissions for the Removal of Crosstalk Artifacts 1992
Nazli Javadi Eshkalak, Nick Bottenus

A Comparative Study of Contrast Enhanced Ultrasound Imaging Using Deep Learning Vs. Amplitude Modulation: An in-Vivo Investigation 1996
Thomas Lisson, Mariam Fouad, Jasmin Baier, Anne Rix, Fabian Kiessling, Georg Schmitz

Modeling and Imaging of GHz Ultrasonic Impedance of C. Elegans 2000
Anuj Baskota, Hsin-Yun Chang, Amaresh Chaturbedi, Justin Kuo, Serhan Ardanuc, Siu Sylvia Lee, Amit Lal

Ultrasonic Characterization of Material Properties in Metal Components Additively Manufactured by Powder Bed Fusion 2004
Kenneth Walton, Mikhail Skliar

Fast and Accurate Estimation of Collapse and Snapback Voltages of CMUTs 2008
Muhammad Usman Khan, Monica La Mura, Marta Saccher, Rob Van Schaijk, Ronald Dekker, Alessandro Stuart Savoia

Multi-Frequency Harmonic Energy Modification of Piezoelectric Micromachined Ultrasonic Transducer (PMUT) for Advanced Sensing Applications 2012
Yufeng Gao, Aocheng Bao, Chong Yang, Lei Zhao, Yipeng Lu

Frequency-Dependent F-Numbers Suppress Grating Lobes and Improve the Lateral Resolution in Line-By-Line Scanning 2016
Martin F. Schiffner

Advanced 3-D Packaging for Integrated 2-D PMUT Arrays and Front-End Circuits 2020
Alessandro S. Savoia, Monica La Mura, Mohammad Mahdi Dehghan Pir, Enrico Boni, Alessandro Ramalli, Piero Tortoli, Rahul Dutta, Vempati Srinivasa Rao, David Ho Soon, Carlo Luigi Prelini, Mark Shaw, Domenico Giusti

Ultrasonic Fiber Waveguides for Measuring Spatially Distributed Environmental and Material Properties 2024
Kenneth Walton, Mikhail Skliar

Fetal Ultrasound Standard Plane Extraction Using Orthogonal Triple-Slice Deep Reinforcement Learning Agent 2028
Baichuan Jiang, Keshuai Xu, Ernest Graham, Russell H. Taylor, Jeeun Kang, Mathias Unberath, Emad M. Boctor

Measurement of Cerebral Status Under Non-Chronic Hemodynamic Conditions 2032
Oliver D. Kripfgans, Stephen Z. Pinter, Brendan M. McCracken, Carmen I. Colmenero Mahmood, Venkatakrishna Krishna Rajajee, Hakam Tiba, Jonathan M. Rubin

A High Power-Handling Laterally-Excited Bulk Acoustic Resonator with Scattering Vias in Double-Layer Electrodes Over +35 dBm 2036
Zhiwei Wen, Wenjuan Liu, Min Zeng, Sijie Yang, Yuanhang Qu, Yao Cai, Yan Liu, Chengliang Sun

Microprotrusion Decorated Solid Coupling for Long-Term Wearable Ultrasound Monitoring 2040
Yongquan Ma, Qiutong Lin, Xingli Xu, Liang Zhang, Wei Pang, Wei Wei, Chenyang Yu, Pengfei Niu

Thermometric Profiling of Capacitive Micromachined Ultrasonic Transducer Surface Via Micro-Fabricated Fractal Resistive Thermometer 2043
Joo Young Pyun, Jungmin Lee, Woosung Park, Hyeonggeun Yu, Butrus T. Khuri-Yakub, Byung Chul Lee

Improving Intersession Reproducibility for Forearm Ultrasound Based Hand Gesture Classification Through an Incremental Learning Approach 2047
Jack Rothenberg, Keshav Bimbraw, Haichong Zhang

A Multifunctional Piezoelectric MEMS Actuator for Tweeter and Ultrasonic Range-Finding Transmitter 2051
Yale Wang, Mingchao Sun, Shaobo Gong, Wei Pang, Miaojie Liu, Menglun Zhang

Physics-Based Artificial Intelligence (PHAI) Model for Estimating the Diameter of Blood Vessels Using PhotoAcoustic PlethysmoGraphy (PAPG) 2055
Sumit Agrawal, Hrishikesh Panchawagh, Changting Xu, Emily Brooks, Evan Breloff, Kostadin Djordjev, John Schneider

An Approximate Analytical Three-Dimensional Time-Domain Green's Function for Shear Wave Attenuation with Power Law Exponent Y = 1/2 2059
Robert J. McGough

OpenMP Accelerated Nonlinear Ultrasound Simulations Via the Discontinuous Galerkin Method 2063
Jacob S. Honer, Drew A. Murray, Robert J. McGough

Abdominal Sound Speed Estimation Through Machine Learning 2067
Jun Hong Park, Ryan Wickman, Omar Yunis, Dongwoon Hyun, Chrysanthe Preza, Carl D. Herickhoff

SLSC Beamforming with Filtered Cross-Correlation-Induced Harmonics to Improve Spatial Resolution..... 2070
Manik Kakkar, Muyinatu A. Lediju Bell

In Vivo Measurement Method of the Speed of Sound in Cartilage Based on a Pseudo Point Scattered Wave Generation from Subchondral Bone Surface 2073
Naotaka Nitta, Toshikatsu Washio, Keigo Hikishima

Guiding Ultrasound Breast Tumor Classification with Human-Specified Regions of Interest: A Differentiable Class Activation Map Approach..... 2077
Haotian Chen, Zikui Wang, Aiguo Han

Hand Gesture Classification Based on Forearm Ultrasound Video Snippets Using 3D Convolutional Neural Networks..... 2081
Keshav Bimbraw, Ankit Talele, Haichong Zhang

Thin Film ST-Cut Quartz on Silicon Microelectromechanical Resonators with Ultra-Low Power on-Chip Ovenization 2085
Xinyi Fang, Bokyung Suh, Gianluca Piazza

Reliable Transcranial Functional Ultrasound in an Adult Cohort (N=13) 2088
Emelina Vienneau, Abbie Weeks, Victoria Morgan, Brett Byram

Polar-Space Frequency-Domain Filtering for Improved Pulse-Echo Speed of Sound Imaging with Convex Probes..... 2092
Haotian Chen, Jingyi Zuo, Yuanbin Zhu, M D Rizwanul Kabir, Aiguo Han

Differentiable Beamforming for Distributed Attenuation Estimation and Spatial Gain Compensation (SGC)..... 2096
Benjamin N. Frey, Dongwoon Hyun, Walter Simson, Thurston Brevett, Louise Zhuang, Jihye Baek, Sergio J. Sanabria, Jeremy J. Dahl

Demonstration of Vector Flow Imaging with Row-Column (RC) Addressed CMUT Arrays on a Rotating Disc Phantom..... 2101
Eda Begum Erdogan, Nairit Das, Ali Onder Biliroglu, Geraldi Wahyulaksana, Erdem Sennik, Jeffrey Ketterling, Feysel Yalcin Yamaner, Ömer Oralkan

Generalizable Deep Learning for Pulse-Echo Speed of Sound Imaging Via Time-Shift Maps..... 2105
Haotian Chen, Jingyi Zuo, Yuanbin Zhu, Md Rizwanul Kabir, Aiguo Han

Contrast Enhancement for Ring-Echo Image: A Probability Weighting Approach to Synthetic Aperture Reconstruction..... 2109
Tianhan Tang, Toshihide Iwahashi, Atsushi Otsubo, Takashi Azuma

Characteristics of Shear-Horizontal-Mode Circumferential Waves Propagated in ZnO Films/Silica Glass Pipe Structure Under Liquid Load.....2113
Sodai Yamaguchi, Shinji Takayanagi, Takahiko Yanagitani

Simultaneous Reverberation Noise Reduction and Aberration Correction Using Wavefield Correlation.....2117
Louise Zhuang, Thurston Brevett, Dongwoon Hyun, Jeremy Dahl

Preliminary Feature Extraction for Small Lesion Classification in Sonomammographic Images 2122
Anna Pawlowska, Norbert Zolek

A Wristband Coupling Microfluidics and MEMS Ultrasonic Transducers for Wearable Long-Term Monitoring Application 2126
Chenyang Yu, Yongquan Ma, Qitong Lin, Xingli Xu, Liang Zhang, Wei Pang, Wei Wei, Pengfei Niu

Wearable Ultrasound Blood Pressure Monitoring System for Cardiovascular Health 2129
Yu Chu, Xiangming Xue, Sipan Liu, Huaiyu Wu, Benjamin C. Kreager, Ali Onder Biliroglu, Omer Oralkan, Xiaoning Jiang

Evaluation of Harmonic SLSC Beamforming Theory 2135
Manik Kakkar, Mahban Gholijafari, Muyinatu Bell

Thickness-Dependent Switching and Device-To-Device Uniformity Analysis of Al0.7Sc0.3N-Based Ferroelectric Capacitor on 8-Inch Si Wafer 2139
Subhranu Samanta, Glen Wong, Lee Hock Koon, Minghua Li, Binni Varghese, Huamao Lin, Chen Liu, Yao Zhu

A Flexible and Wearable Sparse Ultrasound Array Integrated with a Functional Electrical Stimulation Array for Spatially Distributed Sequential Stimulation 2142
Sunho Moon, Xiangming Xue, Darpan Shukla, Vidisha Ganesh, Yong Zhu, Nitin Sharma, Xiaoning Jiang

Body-Conforming Multi-Modal Sensing with Ultrasound-Compatible Surface Electromyography Sensors and a Wearable Ultrasound Array 2146
Sunho Moon, Xiangming Xue, Vidisha Ganesh, Darpan Shukla, Yong Zhu, Nitin Sharma, Xiaoning Jiang

Analyzing Coronary Artery Deformation Based on Intravascular Ultrasound Simulation and Deep Learning 2150
Xinze Li, Peng Song, Yunbo Guo, Tiantian Lv, Yang Jiao, Jing Yang, Yaoyao Cui

A Micromechanical Frequency Comb-Based Binary Phase Shift Keying Demodulator 2154
Ting-Yi Chen, Wei-Chang Li

Study on Supercritical Fluid Technique for Application in Nonvolatile Resistive Random Access Memory (RRAM) Device Using SBT Ferroelectric Thin Films 2156
Kai-Huang Chen, Ming-Cheng Kao, Chien-Min Cheng, Yao-Chin Wang, Cheng-Che Hsieh, Guo-Jau Hung

Effect of Intervening Tissue Layers on Quantitative Ultrasound Measurement: A Phantom Study 2159
Mekdes Bezabh, Farah Deeba

Acoustic Metastructure-Lensed Multi-Focal Sonicator Designs for High-Throughput Therapeutic Ultrasound Testing in Vitro 2163
Jinwook Kim, Sandeep Kasoji, Paul A. Dayton

Experimental Study of the Acoustic-Electromagnetic Hybrid Filter at a Wide Temperature Range 2167
Zijun Ren, Fangsheng Qian, Xingyu Liu, Junyan Zheng, Jiashuai Xu, Yansong Yang

Pre-Alignment Measures for GPS Satellites Prior to All-In-View Weighting 2170
Wen-Hung Tseng

Dual-Electrode pMUT with Switch Mode Operation to Enhance Receive Sensitivity 2174
Jihang Liu, Daniel Ssu-Han Chen, David Choong Sze Wai, Goh Duan Jian, Trivedi Shyam, Teo Yong Shun, Merugu Srinivas, Hong Yan, Lin Huamao, Zhang Qing Xin, Alberto Leotti, Goutham, Jason Zhigang Jia, Huan Chin Chan, Ee Chin Lee, Yul Koh

Monitoring HIFU Thermal Damage Based on Differential Acoustic Radiation Force Pulse Imaging..... 2178
Yijing Liu, Xinwang Shi, Yao Ran, Xiaowei Zhou

Adaptive Eigen Subspace Projection for Suppressing HIFU Interference 2182
Kun Yang, Qiang Li, Xiaowei Zhou

Study on Preoperative HIFU Focus Prediction Using Harmonic Motion Imaging 2186
Yao Ran, Jiahong Xu, Xinwang Shi, Yijing Liu, Dejia Cai, Xiaowei Zhou

Enhancement of Electromechanical and Piezoelectric Charge Coefficient in Lead-Free Na0.2K0.3Bi0.5TiO3 Ceramic Through Poling Effect 2190
Ranjan Kumar Sahu, Saket Asthana

Breaking the Ladder Bandwidth Limitation: Synthesis of Acoustic Wave Ladder Filters Adding Parallel Connected Resonators 2194
Santi Cano, Carlos Caballero, Lluís Acosta, Mario Faura, Jordi Verdú, Pedro De Paco

Double-Mode SAW Resonator Filter: Synthesis and Physical Interpretation Based on Conventional Topologies 2198
Ángel Romero, Ricardo Pampliega, Jordi Verdú, Pedro De Paco

HIFU Ablation Monitoring with Weighted Ultrasound Entropy Imaging 2202
Yingying Zhou, Kun Yang, Jiahong Xu, Dejia Cai, Xiaowei Zhou

A Novel Diffusion-Based Deep Learning Model to Suppress Acoustic Interference for Real-Time Monitoring in Ultrasound-Guided HIFU Surgery 2206
Dejia Cai, Kun Yang, Xintao Liu, Jiahong Xu, Yao Ran, Yang Xu, Xiaowei Zhou

Transverse Resonance Suppression of AlN-Based Surface Acoustic Wave Resonators Using Trench Structure 2210
Yuanhang Qu, Xiyu Gu, Xiang Chen, Min Wei, Zesheng Liu, Jiaqi Ding, Yan Liu, Chengliang Sun

Pyrocatalytic Disinfection of Water Using Lead-Free Ferroelectric Ceramics..... 2213
E. Roake, Q. Liu, Q. Wang, E. Alsheim, B. L. Patenall, M. Hopkins, V. Jarkov, T. Jenkins, C. R. Bowen

Pure Premium Quartz (PPQ) Synthesis for SAW Resonators Beyond the State of the Art 2224
Delphine Pichhedda, Hugues Cabane, Thomas Contiero, Christope Jaquier, Audrey Burlon, Patricia Jeandel, Sylvain Ballandras, Emilie Courjon, Gabrielle Aspar, Florent Bernard, Saly Ndiaye, Jean-Marc Lesage

Investigation of the 3-Overtone Quality Factor of Quartz Crystal Resonator with Ring Electrodes..... 2230
Jian-Guo Hu, Alois Knoll

Ultrasound Vector Flow Imaging-Based Wall Shear Stress Measurement and Validation by Phase-Contrast Magnetic Resonance Imaging 2233
Yigang Du, Haiyan Ding, Xujin He, Le He, Linsong Deng, Shuangshuang Li, Lei Zhu

Utilising Haemodynamic Modelling in Volumetric Ultrasound Simulation..... 2237
Elliott Smith, Luzhen Nie, Thomas M. Carpenter, David M. J. Cowell, James McLaughlan, Steven Freear

Pulsed Optically Pumped Rubidium Atomic Frequency Standard (POPRAFS): A Next Generation Atomic Clock 2241
Daniel Clark, Martin Disla, Justin Lanfranchi, Huascar Ascarrunz, Christopher Presuto, Keshawn Smith, Tuvia Eiger, Jaroslaw Zacharski, Thomas McClelland

Development Status and Performance of the Timing Unit Rubidium Oscillator (TURbO) as a Compact High Performance, Low SWaP Atomic Clock 2245
Christopher Varuolo, Huascar Ascarrunz, Justin Lanfranchi, Jordan M. Jones, Thomas McClelland

Enhanced Infrared Sensing with 30% Scandium-Doped Aluminum Nitride Acoustic Delay Lines Integrated with Metamaterial Absorbers 2249
Farah Ben Ayed, Gabriel Giribaldi, Aurelio Venditti, Kapil Saha, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi

A 2.4-GHz Cryogenic CMOS Oscillator Based on FBAR Resonator for Quantum Computing Applications..... 2253
Xinhui Cui, Guosheng Lei, Yuefeng Chen, Chao Luo, Zhuozhi Zhang, Xiangxiang Song, Guoping Guo, Chengjie Zuo

Near-Zero-TCF SAW Resonator Based on Z-Cut LiNbO3/SiO2/Si Substrate 2257
Jie Chen, Kai Yang, Fuhong Lin, Haoran Tao, Jiming Fang, Chengjie Zuo

Temperature-Driven Degradations on Lithium Niobate MEMS Acoustic Filter..... 2261
Junyan Zheng, Fangsheng Qian, Zijun Ren, Jiashuai Xu, Xingyu Liu, Yansong Yang

TranSpeed: Transformer-Based Generative Adversarial Network for Speed-Of-Sound Reconstruction in Pulse-Echo Mode 2265
Haotian Chen, Yuanbin Zhu, Jingyi Zuo, Md Rizwanul Kabir, Aiguo Han

Boosting Quality Factor in 15 GHz Film Bulk Acoustic Resonators (FBAR) 2269
Chen Liu, Ying Zhang, You Qian, Xinghua Wang, Qingxin Zhang, Yao Zhu

Clamping Effect of Dielectric and Ferroelectric Properties in ScAlN..... 2272
Chen Liu, Ying Zhang, You Qian, Xinghua Wang, Li Chen, Qingxin Zhang, Yao Zhu

Ultrasonic Wireless Power Transfer Using Frequency Steerable Acoustic Transducers for Autonomous Guided Waves-Based Inspection Systems 2276
Stefano Taccetti, Federica Zonzini, Matteo Zauli, Masoud Mohammadgholiha, Aldo Romani, Luca De Marchi

Three-Dimensional Ultrasound Imaging Scanner Driven by Low Voltage Multilayer Piezoelectric Ceramics..... 2279
Xiaoxiao Liu, Boquan Wang, Liyuan He, Zhiyi Wen, Dawei Wu

Macro-Micro Modeling and Performance Analysis of Traveling Wave Ultrasonic Motors..... 2282
Yufei Liang, Huafeng Li, Shengqiang Zhou

Structural and Electrical Properties of BiFeO3 Nanocrystalline Thin Films Crystallized by Rapid Thermal Annealing Process..... 2285
Ming-Cheng Kao, Mahesh, Jun-Hong Weng, Chih-Hung Chiang, Kai-Huang Chen, Der-Yuh Lin, Tsung-Kuei Kang

Modeling of PMUTs with Non-Uniform Membrane Based on the Variational Principle..... 2288
Jinghan Gan, Zhiwei You, Chong Yang, Yipeng Lu

Stability of Fractional Vortex Ultrasound Via a Piezoelectric Transducer 2292
Jing Wang, Huaiyu Wu, Mengyue Chen, Yu Chu, Chengzhi Shi, Xiaoning Jiang

Spatial Coherence Beamforming in Lung Ultrasound Imaging from Numerical Simulations to Ex Vivo Large Animal Data 2297
Oleksii Ostras, Francisco Santibanez, Gianmarco Pinton

Characterisation of an Almost 'off the Shelf' Nanodroplet Formulation for Pre-Clinical Research 2301
Paveekorn Supteranon, Hilde Metzger, Faraz Amini Boroujeni, Carmel M Moran, Paul Prentice, Helen Mulvana

Microwave Characterization of HfO2/ZrO2 Superlattice MFM Varactors Integrated into BEoL 2304
Sukhrob Abdulazhanov, Quang Huy Le, David Lehninger, Ayse Sünbül, Thomas Kämpfe, Gerald Gerlach

Image Guidance of a Phased Array Transducer for Neuromodulation with a Small Focal Volume 2308
Allison Dockum, M. Anthony Phipps, Malachy Newman, Jiro Kusunose, Robert L. Treuting, Adam Neumann, Thilo Womelsdorf, Charles Caskey

Multidimensional SWEI Algorithms in Rotationally Sampled Media: Assessing the Accuracy of Phase Velocity Reconstruction in Transversely Isotropic Media 2313
Wren E. Wightman, Ned C. Rouze, Derek Y. Chan, Shruthi Srinivasan, Mark L. Palmeri, Kathryn R. Nightingale

Blind Extraction of Spot Weld Features for Real-Time Resistance Spot Weld Process Monitoring 2317
Aryaz Baradarani, Roman Gr. Maev

RUS-Sim: A Robotic Ultrasound Simulator Modeling Patient-Robot Interaction and Real-Time Image Acquisition 2320
Xihan Ma, Yernar Zhetpissov, Haichong K. Zhang

Cardiac Phase Recognition in 2D Echocardiography Through Integrated Transfer Learning Within Autoencoder and Recurrent Neural Networks 2324
Somayeh Akbari, Joris Guldentops, Jan D'Hooge

Deep Learning-Aided Spatially-Weighted Ultrasound Attenuation Estimation 2328
José Timaná, Sebastian Merino, Roberto Lavarello

Regularized Phase Gradient Analysis for Reverberant Shear Wave Elastography 2332
Edmundo A. Miranda, Sebastian Merino, Juvenal Ormachea, Kevin J. Parker, Roberto Lavarello

CMUT-Based Focused Ultrasound Transmit Array for Blood-Brain Barrier Opening in Small Animal Models 2336
M. Sait Kilinc, Benjamin Skowronski, Reza Pakdaman Zangabad, Jeremy Colton, Costas Arvanitis, F. Levent Degertekin

Flexural-Mode Lithium Niobate on Silicon MEMS Transformer 2341
Justin Phelps, Reza Abdolvand

Advancing Precision Timing: A Thermally Stable Lithium Tantalate MEMS Oscillator with Low Phase Noise 2346
Hamed Atashbar, Yasaman Majd, Tanvir Hasan, Hannaneh Mahdavi, Hakhamanesh Mansoorzare, Reza Abdolvand

Coherence-Based Optimization Using Cumulative Spatial Lags to Estimate Sound Speed in Plane Wave Images of Coherent and Incoherent Targets 2351
Jiaxin Zhang, Yunlong Zhu, Muyinatu A. Lediju Bell

An Underwater Transducer Made of Flexible Piezoelectric Microdome Arrays..... 2355
Rong Fu, Xinyu Zhang, Leixin Ouyang, Tauhidul Haque, Aijun Song, Mark Ming-Cheng Cheng

Passive Acoustic Synthetic-Aperture Processing Techniques for High-Resolution Cavitation Mapping: From Pre-Clinic to Clinic (BBBO) 2359
Chunqi Li, Elisa E. Konofagou

Design of Photoacoustic Modular Helmet for Neonatatal Neurocritical Care 2363
Ananya Tandri, Keshuai Xu, May W. Chen, Emad Boctor, Jeeun Kang

Characterizing Age Dependent Ultrasonic Properties of Zebrafish Embryos Using GHz Ultrasound Imaging..... 2367
Daria Shkel, Amit Lal

New Applications of Principal Component Analysis and Coherency in Ultrasound Phase Aberration Corrected Echo Imaging..... 2371
Chikayoshi Sumi

Study on Guided Wave Propagation Characteristics in Multilayered Porous Lithium Batteries Based on the Wave Finite Element Method..... 2374
Yaxun Gou, Yitian Yan, Jian Li, Shili Chen, Zhoumo Zeng, Yang Liu

Adversarial Training for Ultrasound Beamforming in Out-Of-Distribution Scenarios 2378
Itamar Salazar-Reque, Jesus Juarez, Roberto Lavarello

Deep Learning for Ultrasound Attenuation Coefficient Estimation 2382
Edu Marin, Itamar Salazar-Reque, José Timaná, Roberto Lavarello

Impact of Photoacoustic Source Location on Flexible Array Curvature Estimation with a Maximum Lag-One Spatial Coherence Metric 2386
Jiaxin Zhang, Kai Ding, Muyinatu A. Lediju Bell

Uncertainty Decomposition and Error Margin Detection of Homodyned-K Distribution in Quantitative Ultrasound..... 2390
Dorsa Ameri, Ali K. Z. Tehrani, Ivan M. Rosado-Mendez, Hassan Rivaz

Simultaneous Estimation of the Nonlinearity Parameter and Attenuation Coefficient with the Gauss-Newton Levenberg-Marquardt Algorithm..... 2394
María Luisa Montero, Roberto Lavarello, Andres Coila

Nonlinearity Parameter Imaging of Local Estimates Using Spatial Compounding..... 2398
Esteban Avilés, Roberto Lavarello, Andres Coila

Multiphysics Simulation of Acoustic Hologram-Lensed Piezoelectric Ultrasound Transducers 2402
Howuk Kim, Jinwook Kim

Evaluation of Nonlinearity Parameter Estimation in Convex Array Transducers Using the Depletion Method 2406
Rodolfo Huacasi, Andres Coila

Advanced Design of Capacitive Micromachined Ultrasonic Transducers with Ultra-Low Quality Factor 2410
Amirhossein Moshrefi, Mohammadreza Kolahdouz Moghaddam, Ilgar Jafarsadeghi Pournaki, Abid Ali, Frederic Nabki

Limited Element Diverging Wave-Based Quasi-Static Ultrasound Elastography for Prostate Cancer Application – Initial Findings 2413
Apoorv Chetan, Arun K. Thittai

Handheld Laser Diode Based Photoacoustic Imaging System 2416
Hamid Moradi, Nienke Van Helvoort, Robert Rohling, Septimiu Salcudean

Design and Implementation of Ergonomic Mid-Air Acoustic Tongs 2420
Yusei Yokoyama, Kan Okubo

High-Q Longitudinal Leaky SAW Resonators at > 4 GHz on LiNbO3/SiO2/SiC Platform 2423
Pengcheng Zheng, Shibin Zhang, Xinjian Ke, Mijing Sun, Xiaoli Fang, Juxing He, Dongchen Sui, Kai Huang, Xin Ou

Advancing Towards a Lower-Power Wearable Ultrasound Sensor for Real-Time Bladder Volume Monitoring Using CNN Optimization 2426
Rouzbeh Molaei Imenabadi, Mojtaba Hasanpour Avanji, Katherine Brown, Dinesh Bhatia

Enhancing Ultrasound Molecular Imaging: RPCA-Based Filtering to Differentiate Tumor-Bound and Free Microbubbles 2430
Hoda S. Hashemi, Dongwoon Hyun, Jihye Baek, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy J. Dahl

Mn-Doped Niobate Perovskite Ceramics and Thin Films for High Field Applications 2436
Jack D. Leber, Sreeakhil Pulipaka, Adam Wynne, Ahmad Safari

Advances in BAW Technology Enabling 5G NR and WiFi6E 2440
Andreas Tag, Milad Koohi, Michael Schaefer, Jyothi Sadhu

SAW Filter Technology on POI for Sensor Applications 2446
Sylvain Ballandras, Emilie Courjon, Gabrielle Aspar, Julien Garcia, Alexandre Raveski, Saly Ndiaye, Tony Makdissy, Thierry Laroche, Philipp Achatz, Thomas Baron, William Daniau, Roland Salut

An Image Recognition Technique for the Quantitative Analysis of Abnormally Oriented Grains in Advanced Piezoelectric Material 2452
Luca Spagnuolo, Luca Colombo, Walter Gubinelli, Kapil Saha, Pietro Simeoni, Matteo Rinaldi

Thermal Wave Detection Technique for High-Resolution XANES Spectroscopy of Lead and Platinum Metal Foils 2455
Sanjiv Kane, Manvendra Singh, Srinibas Satapathy, Prashant Mehta, Prafulla Jha, Rajashri Urkude

Ba0.5Sr0.5T iO3 Thin film-Based Switchable High Overtone Bulk Acoustic Resonator on High Resistive Silicon 2459
Shivakumar Chedurupalli, Akhil Raman T S, Sandeep K, James Raju K C

Focused Guided Surface Acoustic Waves in 30% Scandium Aluminum Nitride on Silicon Carbide 2462
Jack Guida, Siddhartha Ghosh

Design and Realization of a Fully Differential SAW Filter Architecture for Bandwidth Enhancement 2466
Supratik Bose, Raeann Jesma, Kongbrailatpam Sandeep Sharma, Gayathri Pillai

52 GHz 35% Scandium Doped Aluminum Nitride Overmoded Bulk Acoustic Resonator 2469
Juhun Baek, Stephan Barth, Tom Schreiber, Hagen Bartzsch, Gianluca Piazza

Research Progress on Precision Self-Sensing of Frequency Standards 2472
Wei Zhou, Jiale Peng, Zhiqi Li

Enhanced Real-Time Ultrasound Elastography with Phase Gradient 2478
Enrique González-Mateo, Francisco Camarena, Noé Jiménez

Guided Filtering of ARFI Displacement Data for Shear Wave Speed Estimation 2482
Haoyun Chen, Daler Rakhmatov

A Robust Pipeline Including Directional Filtering and Wave Propagation Zones for Mapping Shear Wave Velocity 2486
Ariana Cihan, Patrick Segers, Annette Caenen

Shear Wave Speed Estimation Through Multi-Angles Normalized Cross-Correlation 2490
Weiguang Zhang, Feixiao Long

L1-Norm-Regularized Particle Motion Estimation in Ultrasound Shear Wave Elastography 2494
Md Ashikuzzaman, Muyinatu A. Lediju Bell

Harmonic Elastography Through Time-Of-Flight Calculations 2498
Murthy N. Guddati

Algorithms for Mapping Elastic Modulus (aMEM) Challenge 2501
Emma Harris, John Civale, Heiko Tzschaetzsch, Jeffrey Bamber, Tom Meyer, Mark Palmeri, Matthew Urban

Application of Spatial Autocorrelation in Experimental Time-Harmonic Elastography 2504
Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm, Elsa Cecconello, Sverre Holm, Yücel Karabiyik

Author Index