

2025 IEEE SENSORS

**Vancouver, British Columbia, Canada
19-22 October 2025**

Pages 1-439



**IEEE Catalog Number: CFP25SEN-POD
ISBN: 979-8-3315-4468-3**

**Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** 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:	CFP25SEN-POD
ISBN (Print-On-Demand):	979-8-3315-4468-3
ISBN (Online):	979-8-3315-4467-6
ISSN:	1930-0395

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

Tuning Carbon Nanofiber Density for Optimized Sensing of Ethanol..... <i>Mostafa Shooshtari, Sten Vollebregt, Saeideh Pahlavan, Teresa Serrano-Gotarredona, Bernabé Linares-Barranco</i>	1
Amorphous Nb2O5 and Ta2O5 on ISFETs: An Initial Comparison for High Temperature pH Sensing <i>Christopher Beale, Götz Ringmann, Hans-Georg Dallmann, Laurence Kühne, Matthias Wambold, Falah Al-Falahi, Vladimir Kolkovsky, Eberhard Kurth, Olaf R. Hild</i>	5
In-Sensor Computing with Contactless MEMS: Binary Neurons for Harsh Environment <i>Aleksandra Markovic, Armine Karami, Nicolas Mauran, Philippe Basset, Hervé Fanet, Bernard Legrand, Gaël Pillonnet</i>	9
Low-Temperature H2S Sensing Enabled by Catalytically-Activated Au@SnO2 Core-Shell Nanospheres <i>Ying Li, Xiangyang Wei, Jingyuan Ma, Rui You</i>	13
A 120dB Dynamic Range CMOS Image Sensor with Dual Programmable Conversion Gains and Pixelwise QCG Modulation for Single-Frame Adaptive QCG-HDR Imaging..... <i>Yi Luo, Shahriar Mirabbasi</i>	17
Heterogeneous Sensor Networks: Challenges and Insights from an Industrial Scenario <i>Nicolas P. Winkler, Patrick P. Neumann, Erik Schaffernicht, Achim J. Lilienthal</i>	21
Mutual Closed-Loop Compensation of Hardening and Softening Nonlinearities in MEMS Capacitive Resonators <i>Christian Padovani, Gabriele Gattere, Paolo Frigerio, Giacomo Langfelder</i>	25
A Highly Durable MEMS Hydrogen Pressure Sensor for Fuel Cell Systems Using Atomic Layer Deposited Al2O3 / Parylene-C Hybrid Barrier Coating <i>Eiji Yoshikawa, Naoki Morinaga, Tsukasa Motoya, Sota Umetani, Hisaaki Ito</i>	29
A 32×32 120.4dB Self-Calibrated Analog Counters with Extrapolation for SPAD Imager <i>Chun-Yi Wu, Ssu-Lei Tu, Chih-Cheng Hsieh</i>	33
A 30 nW Inductor-Free Self-Powered Asynchronous Energy Extraction Circuit for Miniaturized Electromagnetic Vibration-Power Generators <i>Shiyuan Sun, Takeaki Yajima</i>	37
Embedded Temperature Sensing in Li-Ion Battery Pouch Cells - Dependence of Cell Orientation and Sensor Location on Measurement Variability <i>Sajitha Sunil, Timothy A Vincent, James Marco, Pierre Kubiak</i>	41
Piecewise-Linear Stretchable Sensors for On-Board Motion Capture Using Frenet-Serret Frames <i>Aiden Shaevitz, Callen Votzke, Joseph Karam, Alessandro Giuliani, Joseph R. Davidson, Matthew L. Johnston</i>	45
An Energy Efficient Regressive Spiking Neural Network for PPG-Based Blood Pressure Estimation..... <i>Yuxiang Cai, Yanhang Chen, Yifei Fan, Jie Yuan</i>	49

Interferometric Evaluation of MEMS-Tunable VCSEL Stability for Chip Scale Atomic Clocks	53
<i>Vivek Anand Menon, Mohammed Saad Khan, Shutaro Ishida, Keiji Isamoto, Nobuhiko Nishiyama, Hiroshi Toshiyoshi</i>	
A Mechatronic Eye Movement Emulator for Benchmarking AR/VR Eye-Tracking Sensors	57
<i>Zehao Huang, Xiaotin Duan, Ganchen Zhu, Rong Wang, Shuai Zhang, Zhiguo Wang</i>	
Time-Resolved Diffuse Optics System Based on CMOS Circuits for Perturbation Velocity Measurements in Tissue Mimicking Phantoms	61
<i>Markku Raappana, Tuomo Talala, Ilkka Nissinen, Jan Nissinen</i>	
High Performance WO ₃ Nanoneedles Decorated with InSe Nanosheets for Detection of NO ₂	65
<i>Jyayasi Sharma, Dalal Fadil, Mubdiul Islam Rizu, Eduard Llobet</i>	
Acoustic Resonance Sensing for Game Controller.....	69
<i>Kevin Xu, Anupama Sitaraman, Kuang Yuan, Yuvraj Agarwal, Mayank Goel, Justin Chan</i>	
Boronic Acid-Based Impedimetric Glucose Sensor: A Multi-Layer Molecular Imprinting Technique.....	73
<i>Koorosh Abbaspour, Somayeh Fardindoost, Mina Hoorfar</i>	
Visual Odometry Using Road Surface Motion Images from RGB-D Camera for Remote-Sensing to Inspect Outdoor Underground Infrastructure Facilities	77
<i>Masato Mizukami, Ayuki Hirabayashi, Takuya Kosakai, Yoshikazu Ebina</i>	
Dual-Sensor Approach for Monitoring Coastal Turbidity and Vertical Underwater Visibility Using In-Situ Turbidity Sensors and Satellite Optical Data.....	81
<i>Yongmyung Kim, Tae-Sung Kim, Jae-Jin Park, Kyung-Ae Park, Su-Ran Kim</i>	
Experimental Mapping of the Human Exposure to Time Varying Magnetic Fields.....	85
<i>Céline Vergne, Hugo Nicolas, Simone Hemm, Joris Pascal, Morgan Madec, Manon Lambert</i>	
A Novel Wireless, Wearable Potentiostat for On-Body Electrochemical Sensing.....	89
<i>Marco Sica, Md Rasel, Brendan O'Flynn, Hassan Hamidi, Daniela Iacopino</i>	
Raman Sensor Based on a Single-Pixel Detector for Monitoring H ₂ in Natural Gas Blends	93
<i>Jacob A. Gottfried, Scott T. Sanders, Yan Zhao</i>	
A Multi-Modal Electromyography and Force Myography Sensor for the Purpose of Upper Limb Prosthesis Integration	97
<i>Peyton R. Young, Marcus A. Battraw, Morgan E. Finley, Jonathon S. Schofield</i>	
Proposal for a Resin Type Sap Flow Velocity Sensor and its Demonstration Experiment in a Greenhouse.....	101
<i>Yusuke Sakamoto, Yuichi Maruo, Fusao Shimokawa</i>	
Simulation and Experimental Comparison of Sensing Approaches for Capacitive Eye Tracking	105
<i>Giulia Palmieri, Alberto Pettenella, Luca Merigo, Marco Carminati</i>	
An Optimized Fast Calibration Algorithm for Magnetic Sensor Arrays	109
<i>Yufei Xue, Xiaoyang Wu, Shuang Song</i>	
Edge Accelerated AI for Robotic Teleoperation	113
<i>Alphonsus Keary, Nehal Amer, Masoud Emam, Alan Dunne, Javier Torres, Kate O'Riordan, Michael Walsh, Brendan O'Flynn</i>	
Precision Temperature Sensing and Digital Control for Microheating Platforms	117
<i>Navid Yazdi, Weibin Zhu, Andrew Mason, Lucas Wolstencroft</i>	

A High-Precision Phase Error Identification and Compensation Method for Full Symmetric MEMS Rate-Integrating Gyroscope Based on Virtual Control Force Observation	121
<i>Bei Li, ZhuoNan Li, ZiHao Zhao, Bo Yang</i>	
Multi Pass Terbium-Doped Gallium Garnet Faraday Rotation Magnetometer with 90 nT/ $\sqrt{\text{Hz}}$ Sensitivity at Room Temperature	125
<i>Massood Tabib-Azar</i>	
Data Reduction for Energy-Constrained Sensors via Event-Aware Sampling	128
<i>Nursultan Daupayev, Paul Reber, Ricky Bendyk, Christian Engel, Soeren Hirsch</i>	
New Method for Evaluating the Deformability of Foods to Determine Their Choking Risk to Infants and Young Children	132
<i>Haruka Tokutomi, Kan Takagi, Mikiko Oono, Koji Kitamura, Tatsuhiko Yamanaka, Yuki Hashimoto, Yoshifumi Nishida</i>	
Fast Wafer Film Thickness Measurement Using Lambda-Capture Camera	136
<i>Masaki Iizuka, Kenta Tsuji, Kosuke Fujimori, Kota Morishima, Manabu Hashimoto</i>	
Scent Creation with an Olfactory Display Based on a Odor Generative Diffusion Algorithm.....	140
<i>Manuel Aleixandre, Hiroki Tanabe, Dani Prasetyawan, Takamichi Nakamoto</i>	
Optical Cantilever Utilizing on-Chip Pattern Laser and Sampling Moiré Method.....	144
<i>Soya Sato, Toshihiro Shiratori, Hidetoshi Takahashi</i>	
Tailoring Pd-Doped MoS ₂ Monolayers for Enhanced Hydrogen Sulfide Gas Sensing	148
<i>Vikash Kumar Verma, Chandrabhan Patel, Poonam Bajoria, Shaibal Mukherjee</i>	
Real-time Droplet Meniscus Recognition and Demonstration on an Operating EWOD Digital Microfluidics System.....	152
<i>Negar Danesh, Hyejin Moon</i>	
A Metasurface Perfect Absorber Incorporating Piezoelectric Material for Simultaneous Microwave and Vibration Sensing.....	156
<i>Mahsa Zabetiakmal, Gunes Karabulut Kurt, Elham Baladi</i>	
Micromixer-Integrated Triboelectric Microfluidic Biosensor for Blood Coagulation Monitoring.....	160
<i>Jia-Cheng Lin, I-Chang Su, Yong-Kwang Tu, Yu-Jui Fan, Horn-Jiunn Sheen, Kuang-Chong Wu</i>	
A Pressure Sensor Based on Soi Achieved Accurate Pressure Measurement Within the Range of 20 to 300° C After Temperature Compensation.....	164
<i>Yuanying Zhang, Binghe Ma, Fengyun Liu, Jinjun Deng, Xingxu Zhang, Jian Luo, Tao Zhang, Yunzhe Liu</i>	
Investigation of Gravity and Pressure Effects on MEMS Thermal Wind Sensors	168
<i>Wenjing Zhu, Sicun Duan, Zhenxiang Yi, Ming Qin, Qing-An Huang</i>	
Facile Method to Evaluate Antimicrobial Activity Based on Microbial Respiration	172
<i>Dongkyu Lee, Chanyong Park, Ohwon Kwon</i>	
3D-Printed Multiaxial Force Sensor Enabling Single-Step Sensor Integration.....	176
<i>Felix Herbst, Bastian Latsch, Edwin Peng, Nils Demuth, Sven Suppelt, Christoph Haugwitz, Mario Kupnik</i>	
A Low-Cost Open-Source BLE-Based Asian Hornet Tracking System	180
<i>Gilles Callebaut, Jan Van Moer</i>	

Fabrication of 400 MHz Wideband Optical-Probe Current Sensor Using Bi:RIG Multilayer Structure	184
<i>Mitsunori Miyamoto, Satoshi Sue, Toshiya Kubo, Makoto Sonehara, Toshiro Sato, Ryuji Osawa</i>	
Minimizing Interference in Zirconia-Based Electrochemical Gas Sensor for Voc Detection.....	188
<i>Sri Ayu Anggraini, Yuki Fujio, Hiroshi Yamada, Mutsunori Uenuma, Takashi Fukuda</i>	
Low-Power Preamble-Less Wireless Communication Method with Two Tone Signals.....	192
<i>Hironao Okada</i>	
Calibration Method for Multi-Spectral Par Sensor.....	196
<i>Johannes Klueppel, Clara Stock, Christiane Werner, Laura Maria Comella</i>	
An Optical MEMS Sensor for Dynamic Wall Shear Stress Measurement in Complex Flow	200
<i>Yunjian Chen, Yunzhe Liu, Daoyuan Wang, Shengming Ma, Chuqiao Wang, Lei Shi, Yipeng Yang, Xingxu Zhang, Binghe Ma</i>	
Compact 3D Airflow Vector Sensor Using Multiple MEMS Differential Pressure Sensors and Neural Network-Based Estimation.....	204
<i>Ryusei Ando, Hidetoshi Takahashi</i>	
Enhanced VZO-Based PMUT for Advanced Acoustic Sensing	208
<i>Jianing Zhang, Xinyu Chen, Chenhao Luo, Jian Luo, Guicai Fang, Xingxu Zhang, Binghe Ma</i>	
A Two-Step Calibration Method of Risley-Prism Solid-State LiDAR for Planar Measurement Environment	212
<i>Dongha Kwon, Byungjin Lee, Hyeongseob Shin, Juyoung Seo, Sangkyung Sung</i>	
Resource-Efficient Multi-Resolution Sliding Occupancy Grid Mapping with RGB-D Sensors	216
<i>Yi Yang, Lihui Wang, Wenxing Du, Kui Wang, Song Xue, Tianrong Gao, Lili Xia</i>	
Evaluation of Acoustic Energy Transfer Through Bolted Connections for Sensor Integrating Machine Elements	220
<i>Dirk Leiacker, David Riehl, Timo Oster, David Witulla, Mark Suppelt, Felix Herbst, Julian Peters, Sven Matthiesen, Mario Kupnik, Klaus Hofmann</i>	
End-to-End Efficiency in Keyword Spotting: A System-Level Approach for Embedded Microcontrollers	224
<i>Pietro Bartoli, Tommaso Bondini, Christian Veronesi, Andrea Giudici, Niccolò Antonello, Franco Zappa</i>	
Propagation-Aware Node Selection for GNN-Based Kriging in Resource-Constrained Wireless Sensor Networks.....	228
<i>Jingtong Yao, Yansong Du, Yuting Zhou, Feiyu Jiao, Xun Guan</i>	
Miniaturized Pressure Probe for Distributed Sensing Based on 3D Structured Optical Fiber and Capillaries.....	232
<i>Marvin Friedemann, Sebastian Voigt, Axel Müller, Jan Mehner</i>	
A Novel Vision-Based Method for Accurate Tool Center Point Calibration of Robots.....	236
<i>Roman Haas, Thomas M. Wendt</i>	
Cooperative Automotive Radar System for Ghost Target Spoofing Detection.....	240
<i>Hanqing Wu, Çağan Önen, Ashish Pandharipande</i>	

LiDAR-Guided Gaussian Splatting for Ship-to-Shore Crane Automation	244
<i>Yihan Wang, Josip Marjanovic, Stefano Maranò, Deran Maas</i>	
Transmit - Receive Circuit Concepts for Magneto-Mechanical Resonators.....	248
<i>Fabian Mohn, Florian Thieben, Jonas Faltinath, Tobias Knopp</i>	
Neural ODE-Based Continuous IMU Debiasing for Robust GNSS/INS Integration.....	252
<i>Jianan Lou, Rong Zhang</i>	
Nature-Inspired Tough and Freezing-Resistant Organohydrogel via 3D Printing for Flexible Sensors	256
<i>Hanqiang Zhang, Peiren Wang, Ji Li</i>	
A Multiplexed Electrochemical Biosensor for Real-Time Glucose and Lactate Monitoring	260
<i>Md Ridwan Adib, Emer Kennedy, Alan O'Riordan</i>	
An Optical Measurement System for Open-Source Tracking of Jaw Motions.....	264
<i>Paul-Otto Müller, Sven Suppelt, Mario Kupnik, Oskar von Stryk</i>	
Fluorometric Detection of Cobalt Ions Using an Ion Imprinted Polymer Thin Film-Based Microfluidic Sensor	268
<i>Ali Doostmohammadi, Siu Ning Leung, Pouya Rezaei</i>	
A Highly Sensitive Microwave Angular Displacement Sensor Based on Three-Path Transversal Signal Interference Principle	271
<i>Kam-Weng Tam, Desen Li, Sio Hon Pan, Chi-Hou Chio, Ngai Kong</i>	
Demonstrator for Consensus-Based Time Synchronization Based on Dynamic Consensus	275
<i>Andreas Bathelt, Ferran Valdes Crespi, Santiago Perez Perez</i>	
A Novel Wearable-Based Fetal Movement Localization System Using Machine Learning	279
<i>Kianoosh Kazemi, Mohammad Feli, Arman Anzanpour, Susanna Likitalo, Valerio Beni, Christian Jonasson, Anna Axelin, Pasi Liljeberg</i>	
Personalized POI Prediction from GPS Data Using Graph-Enhanced Transformers: Toward an Intelligent Navigation System	283
<i>Mackenzie Wallich, Ganesh M. Babulal, Sayeh Bayat</i>	
Embedded Deep Learning for Bio-Hybrid Plant Sensors to Detect Increased Heat and Ozone Levels	287
<i>Till Aust, Christoph Karl Heck, Eduard Buss, Heiko Hamann</i>	
Field-Deployable Plasmonic Sensing and Machine Learning Classification of Microplastics Using Peptide–AuNP Conjugates	291
<i>Abbas Motalebizadeh, Somayeh Fardindoost, Mina Hoorfar</i>	
Automatic Speech Recognition as IoT Sensors via Wireless Ad Hoc Federated Learning	295
<i>Ryo Yagi, Hiroshi Esaki, Hideya Ochiai</i>	
Sensory Tool Holder for Thrust Measurement and Predictive Modeling of PCD Drill Life in Drilling	299
<i>Jihng-Kuo Ho, Po-Chun Wen, Hao-Yang Lin, Tsung-Yu Chang, Her-Terng Yau</i>	
Minimally Invasive Measurement of Phloem Sucrose Content Using Microperfusion Needles.....	303
<i>Yang Ye, Ayari Koga, Noriko Tsuruoka, Mitsuru Tsubo, Eiji Nishihara, Koutoku Ohmi, Sang-Seok Lee, Tadao Matsunaga</i>	

Development of a Vision-Based System for Analyzing Sleep Behavior of Infants and Young Children in the Home Environment.....	306
<i>Satoshi Inagaki, Naoki Sano, Mikiko Oono, Yuki Hashimoto, Tatsuhiko Yamanaka, Yoshifumi Nishida</i>	
Real-Time and Label-Free Electronic Sensing of Bacterial Conjugation Using Graphene Microchips.....	310
<i>Vinay Kammarchedu, Derrick Butler, Taejung Chung, Adam Bolotsky, Jasna Kovac, Aida Ebrahimi</i>	
Electromechanical Characterization of Dual-Electrode Circular PMUTs with Comparative Analysis of Top Electrode Layouts	314
<i>Yumna Birjis, Pavithra Munirathinam, Haleh Nazemi, Arezoo Emadi</i>	
Flip-Chip Bonded Dual-Substrate RF MEMS Switch with SOI Cantilever.....	318
<i>Liwei Jiang, Zirui Liu, Zheyao Wang</i>	
Computationally-Efficient Sparsity-Aware Occupancy Grid Mapping for Automotive Driving	322
<i>Frank Harraway, Peiyuan Zhai, Ashish Pandharipande, Geethu Joseph</i>	
Robust ITO-Al ₂ O ₃ Composite Thin Film Sensors for Extreme High-Temperature Applications via Microstructural Stabilization	326
<i>Tao Zhang, Shengming Ma, Yilin Fan, Yunzhe Liu, Yuanying Zhang, Tao Ye, Xingxu Zhang, Binghe Ma</i>	
Selectivity Improvement of Impedimetric Ion Sensors Using Convolutional Neural Networks.....	330
<i>Matthias Ochs, Eva-Maria Korek, Maximilian Schulz, Ralf Brederlow</i>	
Temperature Monitoring in High-Power Electrical Contacts Using Thin-Film Sensors	334
<i>Christina Pongratz, Anna Schott, Christian Seiler, Tim Vorwerk</i>	
Hybrid Thermal and Mechanical 2D Anemometer Using Strain-Induced Out-of-Plane Cantilevers.....	338
<i>Victor Winnen, Thomas Leigh Hackett, Jarno Groenesteijn, Dennis Alveringh</i>	
A Compact Two-Dimensional Misalignment Sensor Using Planar Coil and TMR Technology	341
<i>Anil Kumar Appukuttan Nair Syamala Amma, Maier Jiri, Pavel Ripka</i>	
Microwaves Meets Enzymes: A Flexible, Screen-Printed Biosensor for Specific Lactate Detection	345
<i>Firas Fatani, Sakandar Rauf, Apala Banerjee, Atif Shamim</i>	
Pressure Sensing and Multi-Resolution Kinetic Modeling of Oxygen-Releasing Compounds.....	349
<i>Abhishek Sharma, Vanessa Barth, Henning J. Jessen, Laura M. Comella</i>	
Live Demonstration: iGii Sensors for Real-Time Finger Tracking	353
<i>Isidoro Ruiz-García, Michael McKinlay, Michelle Ntola, Marco Caffio, Carlos García Núñez</i>	
Development of Sensors and Optical Filters Towards Detecting Tissue Damage During Organ Transplants	355
<i>Avik Sett, Jeroen de Jonge, Filippos Bersis, Massimo Mastrangeli, Paddy French</i>	
Large-Area Surface Acoustic Wave Cleaning for Enhanced Optical Performance of LiDAR Sensors.....	359
<i>John Claud Jonas, Heesoo Kim, Saeah Kim, Hyung Ham Kim</i>	
Uncertainty Quantification via Bayesian Inference on CNNs for MOS Gas Sensors in Temperature Cycled Operation.....	362
<i>Sebastian Pültz, Dennis Arendes, Christian Bur, Andreas Schütze</i>	

Comparative Evaluation of Mechanical Performance of pMUT with Different Membrane Diameters in PZT and ScAlN30%.....	366
<i>Barretta Luigi, Rossana Scaldaferrri, Alessandro S. Savoia, Yul Koh, Carlo L. Prelini, Sagnik Ghosh, Andrea Di Matteo, Alessi Enrico, Domenico Giusti</i>	
Towards Developing Frequency Robustness via Domain Enriched AI for Industrial Metal Detection	370
<i>Suhrid Das, Ankit Tyagi, Vishal Monga</i>	
Femtosecond Laser Induced Graphene/MoS2 Flexible Pressure Sensors for Human-Robot Kinematic Detection.....	374
<i>Fan Wu, Misheng Liang, Chaoqi Zhang, Yingjie Chen, Haibo Xu, Rui You</i>	
Geometry-Inspired Pool-Based Sampling for Gas Sensors Joint Calibration	378
<i>Qifan Tong, Wenzheng He, Wenshuai Lu, Chengsong Xiong, Zheng You</i>	
Common Reference Potentiostat for Reducing Interference in Simultaneous Multi-Technique Electrochemical Arrays	382
<i>Samuel Lobert, Derek Goderis, Ehsan Ashoori, David P. Hickey, Navid Yazdi, Andrew J. Mason</i>	
A Digitized Thermal Conductivity Measurement System for 3-Omega Sensors	386
<i>Ethan A. E. Garnier, Brandon C. Brown, Chris D. Rouse</i>	
Differential TMR-Based Multiaxial Force Sensor Using Soft Magnetoelastic Composites	390
<i>Mark Suppelt, Hao Ninh, Julian Seiler, Kilian Schäfer, Felix Herbst, Muhammad Bilal Khan, Matthias Lutzi, Bastian Latsch, Stephan Rinderknecht, Oliver Gutfleisch, Mario Kupnik</i>	
Microacoustic Ice Detection and Thickness Measurement for Wireless Condition Monitoring	394
<i>Philipp Schulmeyer, Manfred Weinhacht, Hagen Schmidt</i>	
Topology-Driven Field Distribution for Enhanced Performance in OFET Sensors	398
<i>Mohd Farhan Arshi, Tiago Carneiro Gomes, Haleh Nazemi, Aya Abu-Libdeh, Matthew Zojac-Rivest, Abhijith C. Bijukumar, Simon Rondeau-Gagné, Arezoo Emadi</i>	
Processing-dependent Thermal Response of Nanostructured Platinum Thin Films Fabricated via Spark Ablation.....	402
<i>Shatavisha Biswas, Mudassir Husain, Sten Vollebregt</i>	
Multi-Axial Sensing in Composite Laminates via Integrated FBG and OFDR: Unveiling Anticlastic Curvature.....	406
<i>Giancarlo Santamato, Sebastián San Martín, Lorenzo Tozzetti, Fabrizio Di Pasquale</i>	
Crack Evolution During Priming of Uniaxial and Biaxial Loaded Crack Based Strain Sensors.....	410
<i>Benjamin Sittkus, Volker Bucher, Gerald Urban, Thomas Stieglitz, Ulrich Mescheder</i>	
Evaluation of CMOS Polysilicon Resistors for Thermal Conductivity-Based Gas Sensing	414
<i>Gianluca Boni, Aurelio Venditti, Nishit Goel, Ilya Gurin, Stephen Bart, Benyamin Davaji, Matteo Rinaldi, David Horsley</i>	
Point-Of-Care Sensors for Salivary Endotoxin Detection.....	417
<i>Andrew Steckl, Daewoo Han, Adewale Ahinmoye, Pietro Strobbia</i>	
Assessing Photoplethysmogram (PPG) Signal Quality Across Participant Groups and Settings.....	421
<i>Jason Fu, Saud Lingawi, Jacob Hutton, Jim Christenson, Babak Shadgan, Brian Grunau, Calvin Kuo, Mahsa Khalili</i>	

PolarFitts: A More Intuitive Framework for Assessing Myoelectric Control Performance.....	425
<i>Shriram Tallam Puranam Raghu, Heather E. Williams, Erik Scheme</i>	
Design Optimization of the Quadrature Error in a MEMS Gyroscope.....	429
<i>Marian Hörsting, Matthias Wenzel</i>	
In Situ Temperature Compensation for Thin-Film Force Sensors	432
<i>Marcel Plogmeyer, Apirak Tienkaew, Anna Schott, Volker Schulze, Günter Bräuer</i>	
Simulating Gadolinium-Induced Magnetic Field Variations for Temperature Sensing with Magneto-Mechanical Resonators.....	436
<i>Jonas Faltinath, Miriam Schmitz, Fynn Foerger, Martin Moddel, Tobias Knopp</i>	
CMOS Image Sensor as Colorimetric Gas Sensor for Ammonia and Amine Detection	440
<i>Sonja Hoffmann, Michael Henfling, Sabine Trupp</i>	
Determination of Pore Diameter in Polyurethane/PEDOT:PSS Porous Electrodes Using Electrochemical Impedance Spectroscopy	444
<i>Diogo Correia, Paulo R.F. Rocha</i>	
Feed Forward Neural Network Based Automated Gas Source Localization Using Uav: a Case Study on CO ₂ Source Tracking.....	448
<i>Harshit Kumar Sahu, Pritika Marik, Chiranjib Ghosh, Soumajit Pramanik, Kaushik Bandyopadhyay, Avishek Adhikary</i>	
Antenna Tracking System for Robust Communication in Ingestible Electronics.....	452
<i>Ziyao Zhou, Chenyang Ren, Boyan Li, Chen Shen, Rong Tan, Hen-Wei Huang</i>	
Novel Flexible Packaging Enables Highly Sensitive, Self-Decoupled FBG Strain Sensing in Extreme Environments	456
<i>Yilin Fan, Shengming Ma, Tao Zhang, Yu Lei, Ying Chang, Binghe Ma</i>	
Ultra-Sensitive Wireless Capacitive Sensing via Mode Localization in Nonlinear PT-Symmetry.....	460
<i>Dongyan Chen, Lei Dong, Qing-An Huang</i>	
Bridging the Gap: Enhancing Hall Device Performance Across Planar and Vertical Structures.....	464
<i>Ping Zheng, Eng Huat Toh, Qingyou Wang, Zin Tun Thant, Jerry Joseph James, Guoquan Teo, Elgin Quek, Jan Hoentschel</i>	
Printed Flexible Sensors for Breath Analysis in Non-Invasive Health Monitoring.....	468
<i>Ahmad Al Shboul, Ricardo Izquierdo</i>	
Cell Culture Monitoring With Microcavity Optical Fiber Sensor and Microscopic Imaging.....	472
<i>Tomasz Gabler, Mariusz Zdanowicz, Anna Sobiepanek, Marcin Koba, Monika Janik, Mateusz Śmietana</i>	
Temperature Experiments for a 3D-Printed Encapsulated Thermal MEMS Wind Sensor Under Low Pressure	476
<i>Sicun Duan, Zongyuan Cao, Wenjing Zhu, Zhenxiang Yi, Ming Qin, Qing-An Huang</i>	
Assembly-Free Electrode Manufacturing Process for Micro-Hemispherical Resonant Gyroscopes with Enhanced Capacitance.....	480
<i>Yinan Zhang, Mingwei Ma, Bin Zhou, Haoyu Gu, Qi Wei, Rong Zhang</i>	
CMOS Impedance Sensor with 128X128 Microelectrode Arrays for Measuring Surface Coverage of Microparticles	483
<i>Hyunseo Shin, Dakyung Kang, Jungkyu Kim, Nam-Seog Kim</i>	

A Small-Area and Low-Power Readout Circuit for a LOFIC CMOS Image Sensor	487
<i>Seina Hori, Nao Kitajima, Ai Otani, Hiroaki Ogawa, Shunsuke Okura</i>	
Light-Based Food Assurance: Non-Destructive Carob Molasses Authentication via Pocket-Sized Near-Infrared Spectroscopy and Chemometrics.....	491
<i>Fatima Dokmak, Anna G. Mignani, Andrea A. Mencaglia, Leonardo Ciaccheri</i>	
Aerosol Jet Printing of Tissue Factor on Gold Electrodes for Dielectric Blood Coagulometry	495
<i>Emily Song, Dante Disharoon, Hanif Alizadeh, Christopher A. Delianides, Changyong Cao, Anirban Sen Gupta, Pedram Mohseni, Michael A. Suster</i>	
Autoregressive Artefact Detection in Finger Movement Decoding for Electroencephalography Brain Computer Interfaces	499
<i>Laura M. Damm, Dai Jiang, Andreas Demosthenous</i>	
Quantification of Cellular Stress Responses via Intracellular and Extracellular Fluorescence Biosensors	503
<i>Shirin Parvin, Zheyuan Zhang, Zengyi Shao, Deon Ploessl, Meng Lu</i>	
Acoustic Steering via Multiaxial Driving: A Study on the Effect of Element Geometry	507
<i>Armin Rahmaninejad, Samuel Pichardo, Laura Curiel</i>	
LungXplain: Chunk - Level Modeling for Precise Detection and Localization of Respiratory Events.....	510
<i>Tayeb Pourebrahim, Sayeh Bayat, Mariana Bento, Laura Curiel</i>	
A Collar Device for Monitoring Cattle Mastication and Eructation Sounds	514
<i>Shun Muramatsu, Natsuhiko Mascia, Jarred Fastier-Wooller, Michitaka Yamamoto, Satoshi Koike, Toshihiro Itoh</i>	
Inductive Distance Sensor for Narrow Spaces: Application in Total Knee Arthroplasty.....	517
<i>Hyunjoon Hwang, Sebin Kim, Yongnam Song</i>	
In Vivo Volatile Fatty Acid Measurement in the Rumen of Cattle Using Polybutadiene-Coated Quartz Crystal Microbalance Sensor	521
<i>Jarred Fastier-Wooller, Shun Muramatsu, Michitaka Yamamoto, Shintaro Noda, Naoki Shiraishi, Hironao Okada, Yoshihiro Muneta, Shozo Arai, Toshihiro Itoh</i>	
Advanced SAW Sensors Based on Nanocrystalline Graphite for Air Quality Monitoring.....	525
<i>Angela Baracu, Marius Stoian, Octavian Simionescu, Cosmin Obreja, Valentin Buiculescu, Raluca Gavrilă, Gabriel Craciun, Florin Comanescu</i>	
Type Identification of Packaged Fruit Juices Using KNN on LDA-Reduced Hydrogel Data.....	529
<i>Ragini Vinay Mehta, Shikha Kaiwart, Dibakar Roy, Khushi Dutta, Suchetan Pal, Avishek Adhikary</i>	
Feedthrough Compensation for Force-Feedback Controlled Piezoelectric MEMS Microphones.....	533
<i>Til Friebe, Nikita Ovsianikov, Maximilian Lenz, Christian Bretthauer, Gabriele Schrag</i>	
A Microwave Sensor to Control the Purity of Products in Industrial Agrifood Processes	537
<i>Paris Véléz, Pau Casacuberta, Ferran Martín</i>	
Polydiacetylene-Based Sensor Development for Chemical Warfare Agent Detection.....	541
<i>Philip R Miller, Mieko Hirabayashi, Jessica McDow, Marieke Sorge, Maurice Payne, Clayton Curtis, William C. Corbin</i>	
Solar Altitude Guided Scene Illumination.....	545
<i>Samed Doğan, Maximilian Hoh, Nico Leuze, Nicolas Rodriguez Peña, Alfred Schöttl</i>	

Atomic Clocks Based on Hot Alkali Vapor Microfabricated Cells	549
<i>Rodolphe Boudot, Nicolas Passilly, Vincent Maurice, Emmanuel Klinger, Quentin Tanguy, Carlos-Manuel Rivera-Aguilar, Clément Carlé, Moustafa Abdel Hafiz, Andrei Mursa</i>	
Doughnut-Shaped On-Chip WGM Microshell Resonator for Air-Coupled Ultrasound Sensing	551
<i>Chichen Huang, Shengli Zhang, Jiayuan Zhang, Srinivas Tadigadapa</i>	
Graphitic Carbon Nitride-Based SAW Sensor for Sensitive Detection of Formaldehyde	555
<i>Marius Stoian, Cosmin Obreja, Valentin Buiculescu, Adrian Dinescu, Angela Baracu</i>	
Palladium-Coated Laterally Vibrating Resonators (LVRs) for Hydrogen Sensing.....	559
<i>Gaia Giubilei, Farah Ben Ayed, Yvonne Sautriot, Aurelio Venditti, Kun Zhang, Sila Deniz Calisgan, Pietro Simeoni, Zhenyun Qian, Matteo Rinaldi</i>	
Acoustic Geolocation of Microsystems in Downhole Environments	563
<i>Yifan Yang, Scott Smith, Alex Benken, Yogesh B. Gianchandani</i>	
Novel Detection of Apoptosis-Associated Speck-Like Protein Using Single Domain Antibodies and Organic Electrolyte-Gated Field-Effect Transistors	567
<i>Dylan Layton-Matthews, Srishti Johri, Jagdeep K. Sandhu, Ravi Prakash</i>	
Screening Alzheimer's Disease Biomarkers Using a Portable Antibody Functionalized Bioanalyzer Platform and Novel Saliva Testing Strategies	571
<i>Hussain Ali, Srishti Johri, Christopher Semaan, Ravi Prakash</i>	
Every Microjoule Counts: Zero-Failure Task Execution in Batteryless Sensors.....	575
<i>Matteo Nardello, Maria Doglioni, Simone Dagnino, Patrick Pastorelli, Davide Brunelli</i>	
Fabrication and Functional Validation of Insertable Sucrose Image Sensor for Monitoring of Plant Photosynthetic Products	579
<i>Toshihiko Noda, Yusuke Matsushita, Hideo Doi, Kotaro Takayama, Ik-Hyun Kwon, Yong-Joon Choi, Kazuhiro Takahashi, Kazuaki Sawada</i>	
Non-Invasive Contactless Heart Rate Monitoring for Application Onboard Ultra-Low Power Smart-Glasses.....	583
<i>Paul Joseph, Jonathan Hungerbühler, Tommaso Polonelli, Michele Magno</i>	
Non-destructive Microwave Water Activity Meter for Dry-Cured Sausages	587
<i>Alex Mason, Stefania Gudrun Bjarnadottir, Frøydis Bjerke, Karl Helge Albretsen, Per Berg</i>	
A Parallel Ultra-Low Power Silent Speech Interface Based on a Wearable, Fully-Dry EMG Neckband.....	591
<i>Fiona Meier, Giusy Spacone, Sebastian Frey, Luca Benini, Andrea Cossettini</i>	
RF-Powered Batteryless Plant Movement Sensor for Precision Agriculture.....	595
<i>Jona Cappelle, Jarne Van Mulders, Sarah Goossens, Thomas Reher, Liesbet Van der Perre, Lieven De Strycker, Bram Van de Poel, Gilles Callebaut</i>	
Mean-Reverting Stochastic Modeling of Instrumental Drift in NDIR CO ₂ Sensors	599
<i>Cheng Yang, Tobias J. Oechtering</i>	
Real-Time Surface Classification and Crack Enumeration on Underwater Metallic Structures Using DenseNet201 and YOLOv8.....	603
<i>Mohammad Arif Khan, Shubham Saurav, Kaushik Bandyopadhyay, Avishek Adhikary</i>	

Performance Evaluation and Benchmarking of ALD-Based Ultra-Thin SnO ₂ MEMS Sensors	607
<i>Mahaboobbatcha Aleem, Baha Erim Uzunoglu, Anna Leonard, Amay Bandodkar, Bongmook Lee, Veena Misra</i>	
Gelatin Electrolyte and PEDOT:PSS Based Solid-State OECT for pH Sensing of Acidic Solutions	611
<i>Junzhi Liu, Sharmistha Bhadra</i>	
Bias Optimization and Polymer Encapsulation Synergy for Immersion PMUTs: A Comparative Study of Sylgard 160 and 184	615
<i>David Sze Wai Choong, Sagnik Ghosh, Yu Feng Thien, Mantalena Sarafianou, Duan Jian Goh, Srinivas Merugu, Alberto Leotti, Ravi Shankar, Dao Hao, Silvia Adorno, Alessandro Stuart Savoia, Yul Koh</i>	
AlGaAsSb APD for 1550 nm LiDAR Maintaining Sufficient SNR in High-Gain Operation	619
<i>Mitsuharu Hirano, Takeshi Okada, Munetaka Kurokawa, Masaki Sato, Ryo Sugahara, Kazutoshi Natsume</i>	
CMOS-Integrated Capacitive Tactile and Optical Sensors for Multi-Axis Force and Proximity Sensing	623
<i>Cheng-Ching Chao, Yong-Teng Liu, Ching-Yu Lai, Michael S.-C. Lu</i>	
Flexible Piezoelectric Sensor Array with CMOS Integration for High-Resolution Tactile Mapping	627
<i>Po-Jui Ku, Ching-Yu Lai, Yong-Teng Liu, Michael S.-C. Lu</i>	
Uncertainties of a Spherical Magnetic Field Camera	631
<i>Fynn Foerger, Philip Suskin, Marija Boberg, Jonas Faltinath, Tobias Knopp, Martin Möddel</i>	
Organic Semiconductor-Based Light Addressable Potentiometric Sensor Integrated with Near-IR VCSEL	635
<i>Aravind Satheesh, Chia-Ming Yang, Bing-Huang Jiang, Chih-Ping Chen</i>	
Fluxgate Magnetometer Signal Processing Using a Single-chip Microcontroller	638
<i>Vojtěch Petrucha, Šimon Ondřej</i>	
Ceramic Resonator Probe for Milk Adulteration Detection: A Simple and Scalable Sensing Solution	642
<i>Fernanda R. Destro, Bruno C. Henriques, Mateus I.O. Souza, Vinicius M. Pepino, Ben-Hur V. Borges</i>	
Non-Intrusive Plant Dynamic Monitoring Using mmWave Radar	646
<i>Jorik De Bruycker, Gilles Callebaut, Thomas Reher, Bram Van de Poel, Uwe Maaß, Nobby Stevens</i>	
Effect of DC Bias on Optimizing Sc _{0.3} Al _{0.7} N Cantilever-Type MEMS Speaker to Improve Acoustic Performance	650
<i>Prakasha.C. Ramegowda, D. S. W. Choong, S. Trivedi, T. Y. Feng, S. Ghosh, L. Jihang, T.Y. Shun, H. Yan, S. Mantalena, F. Cerini, A. Leotti, M. G. Koppiseti, A. Das, C. Lazzari, Y. Koh</i>	
Optimized Sensor Placement and Fusion of Optical and Electrical Modalities for Tissue Classification	654
<i>Matthias Ege, Elisabeth Grumann, Franziska Krauß, Zoltan Lovasz, Andrea Rüdinger, Carina Veil, Oliver Sawodny, Cristina Tarin</i>	
A Wireless Self-Calibrating Ultrasound Microphone Array with Sub-Microsecond Synchronization	658
<i>Dennis Laurijssen, Rens Baeyens, Walter Daems, Jan Steckel</i>	

No Measuring Tape, No Wires, No Worries Scalable Ultrasound Arrays with Built-In RF Sync and Optical Localization	662
<i>Dennis Laurijssen, Rens Baeyens, Walter Daems, Jan Steckel</i>	
Waveguides and Optical Resonators for Hydrogen Sensing	663
<i>Robin Gremaud, Pedro Castro-Fernández, Deran Maas</i>	
A Scalable Ultra-Low Power Temperature Gradient Sensor Using Pulse Coupled Oscillators.....	667
<i>Kyubum Shim, Paragkumar Chaudhari, Alyssa Apsel</i>	
Multispectral Capacitance Imaging of Single Red Blood Cells: Experiments and Simulations.....	671
<i>Daniele Goldoni, Jacopo Nicolini, Luigi Rovati, Luca Selmi</i>	
Sensing High Speed Response of Plants to Transient Water Stress.....	675
<i>Mayank Barad, Rich Howard, Aggelos Bletsas</i>	
Towards a Fully Integrated Refractometric Sensor in Silicon Nitride: Integrated Spectrometer Design.....	679
<i>A. Setiarini, O. Bernal, C. Deleau, M. Syahadi, F. Jayat, J. H. Sharp, F. Surre, F. Carcenac, C. Caucheteur, P. Arguel, H. C. Seat</i>	
PicoSAM2: Low-Latency Segmentation In-Sensor for Edge Vision Applications	683
<i>Pietro Bonazzi, Nicola Farronato, Stefan Zihlmann, Haotong Qin, Michele Magno</i>	
Printed Differential Microwave Ring Resonator Based Liquid Sensor on Biodegradable Substrate	687
<i>S. M. Ishraquul Huq, Gaozhi Xiao, Sharmistha Bhadra</i>	
Controlling and Monitoring a Magnetic Atom Trap with Consumer-Grade Electronics.....	691
<i>Lars Martin, Andrea Capra, Jack Ewins, Makoto Fujiwara, Fionn Milhench, Chukman So, Giles Wankling</i>	
Realizing Field-Ready MEMS Gravimetry	695
<i>Abhinav Prasad, Elizabeth Passey, Karl Toland, Kristian Anastasiou, Douglas J. Paul, Giles D. Hammond</i>	
Novel Clinical Near-Infrared Spectroscopy Sensor in Flap Monitoring	699
<i>Amir Parham Pirhadi Rad, Oleksandr Butskiy, Iman Amani Tehrani, Sina Maloufi, Donald W. Anderson, Babak Shadgan</i>	
MEMS Magnetometer Arrays for Frequency Multiplexing Wearable Nuclear Magnetic Resonance.....	702
<i>Massood Tabib-Azar</i>	
Visual Sensing Platform for Quantitative Analysis of Water Contaminants.....	706
<i>Muersha Wusiman, Fariborz Taghipour</i>	
RadarPoseNet: Human Pose Estimation from Extremely Sparse FMCW Radar Point Clouds.....	709
<i>Evgenia Slivko, Övkü Toprak, Vani Raheja, Kay Bierzynsk, Lorenzo Servadei, Robert Wille</i>	
Additive Manufactured Capacitive Displacement Sensor for Pin Array Grippers: One-Shot and Stacked Fabrication Approaches	713
<i>Steffen Schröder, Thomas M. Wendt, Stefan J. Rupitsch</i>	
Enhanced Radio Map for Wi-Fi Fingerprinting Using PDR and Particle Filter	717
<i>Teresa Serrano Sala, Joaquín Torres-Sospedra</i>	
High-Sensitivity Microwave Sensor for Continuous Monitoring of Water-borne Suspended Solids.....	721
<i>Mehri Ziaee Bideskan, Nima Karbaschi, Zahra Abbasi</i>	

Real-Time Stretchable Strain Sensor using CMOS-based Time-Domain Reflectometry.....	725
<i>Calder Wilson, Flaviu-Cristian Moldovan, Matthew L. Johnston</i>	
Aging Effect on APCVD-Grown 2D MoS ₂ Monolayer in NO ₂ Gas Sensing	729
<i>Chandrabhan Patel, Sumit Chaudhary, Vikash Kumar Verma, Mayank Dubey, Brahmadutta Mahapatra, Shaibal Mukherjee</i>	
Flexible Piezoresistive Sensor Based on Laser-Induced Composite Graphene.....	732
<i>Yimeng Jiang, Misheng Liang, Xiaomeng Bian, Ruige Su, Bo Wang, Rui You</i>	
Integrated High Dynamic Range Electrochemical Sensors with Self-Modulation for Levodopa Detection	736
<i>Ruei-Yong Hu, Cheng-Che Yu, Tsung-Heng Tsai, Li-Chia Tai</i>	
Differential Resonant Accelerometer with 6 $\mu\text{g}/\sqrt{\text{Hz}}$ Noise Floor Based on AlN TPoS Technology	740
<i>Hsiang-Chun Hsiao, Yu-Chi Chuang, Chih-Peng Liu, Hao-Chiao Hong, Yi Chiu</i>	
A Novel Sapphire-Based MEMS Wall Shear Stress Sensor with Remarkable Thermal Endurance up to 800 °C.....	744
<i>Yunzhe Liu, Yunjian Chen, Shengming Ma, Chuqiao Wang, Wenlong Wang, Tao Zhang, Yuanying Zhang, Xingxu Zhang, Binghe Ma</i>	
Hetero-Core Fiber Optic SPR Sensor for Silica Scale Formation in Geothermal Water	748
<i>Airi Suka, Ai Hosoki, Sakurako Satake, Fatemeh Abrishamian, Heejun Yang, Akira Ueda, Hideki Kuramitz, Amane Terai</i>	
Origami-Inspired 3D Sensor Platform for Real-Time Electromechanical Coupling Analysis in Engineered Heart Tissues	752
<i>Longlong Li, Fatima Tufail, Haolan Sun, Jongyun Kim, Hee-Gyeong Yi, Dong-Weon Lee</i>	
A Comparative Evaluation of Low-Cost Soil-Moisture Sensors for Precision Agriculture	756
<i>Douglas P. B. Renaux, Gabrielly de Q. Pereira, André E. Lazzaretti, Gabriel T. C. Hrysay, Marco A. M. Gonçalves, Fabio S. Fukuda, Carlos R. E. Lima, Alan B. dos Santos</i>	
Development of an In-Situ, Microspectrometer-Based Sensor for Monitoring Carbon Fiber Curing.....	760
<i>Yu-Chen Hsu, Sung-Wei Huang, Hong Chitsung, Cheng-Hao Ko, Hung-Wei Huang, Wei-Leun Fang</i>	
A Semi-Supervised Lightweight GAN-Based Method for Weld Defect Recognition in Industry.....	764
<i>Rodrigo Minetto, André Gouthier Bicalho, Sylvio Biasuz Block, Marco Antônio Simões Teixeira, Ricardo Dutra da Silva, André Eugenio Lazzaretti</i>	
PVDF Fused Nanocomposite for Piezoelectric Applications	768
<i>Aniket Chakraborty, Ananya Mukherjee, Suresh Nuthalapati, Anindya Nag, M Ercan Altinsoy</i>	
Live Demonstration: Experience of Hammering Test	772
<i>Atsushi Ito, Yuto Kurosawa, Masako Saito, Katsuhiko Hibino, Nishchal Acharya, Masafumi Koike</i>	
Ionic-Liquid-Functionalized Graphene Devices for Trace Detection of Gas Molecules.....	773
<i>Kazuki Kikawada, Kenzo Maehashi</i>	
A High-Precision and Large-Range Iontronic Flexible 3D Force Sensor for Robotic Interactions.....	777
<i>Shichao An, Zhengang An, Dachao Li, Lei Zhang</i>	

Laser-Induced Graphene-Based Flexible Array Gas Sensors for Multi-Gas Detection.....	780
<i>Chaoqi Zhang, Shijie Yu, Fan Wu, Misheng Liang, Xiaomeng Bian, Rui You</i>	
LUGA: Lightweight Uncertainty-Guided Sensing Resolution Adaptation for Energy Efficient Radar Processing	784
<i>Sudarshan Sharma, Jinhyeok Park, Hemant Kumawat, Saibal Mukhopadhyay</i>	
Real-Time Front-End Adaptation for Energy-Efficient mmWave Radar Sensor.....	788
<i>Jinhyeok Park, Sudarshan Sharma, Wei-Chun Wang, Alex Saad-Falcon, Russ H Huang, Alyosha Molnar, Justin Romberg, Saibal Mukhopadhyay</i>	
A Wearable System for Continuous Physiological Data Collection Towards Real-Time Analysis of Psychological Well-Being	792
<i>Alec Brewer, Emily Garceau, Idil Baran, James Dieffenderfer, Maria Davila, Danielle Roubinov, Aysenil Belger, Alper Bozkurt</i>	
Electrochemical Impedance Driven Detection of Viral RNA from Human Plasma: Comparative Insights from PCR and RT-LAMP.....	796
<i>Ranamay Saha, Sagnik Sarma Choudhury, Suraj Kumar, Ekta Gupta, Shantanu Bhattacharya</i>	
PVDF Thin-Film Fabrication and Characterization for Surface Acoustic Wave Biosensing	800
<i>Rishabh Ramesh Appadurai, Yuu Ono, Ravi Prakash</i>	
Bioimpedance-Driven Haptic Feedback for Human-Computer Interaction	804
<i>Tianyang Yao, Richard Bayford, Andreas Demosthenous</i>	
Wearable Sweat-Based Ion-Selective Sensor for Continuous Monitoring of Hydration.....	808
<i>Gustavo A. Medina, Luis F. Rodriguez, Jorge Manrique Castro</i>	
Integrated Bioelectronic Platform Utilizing PEDOT:PSS Strain Sensors for Real-Time Mechanostimulation and Sensing	812
<i>Zhuji Qu, Jongyun Kim, Haolan Sun, Longlong Li, Dong-Weon Lee</i>	
Influence of Snow Surface Contaminants on Automotive Radar Systems	816
<i>Jeongmin Kang, Tobias Eidevåg, Oskar Hamidi, Karl Vanäs, Emil Nilsson, Ross Friel</i>	
Enhanced PMUT-Based Imaging Using Continuous Wavelet Transform	820
<i>Mantalena Sarafianou, Gaia Giubilei, Duan J. Goh, Yul Koh, Silvia Adorno, Alberto Leotti, Chang Kwan Teo, Hwee Hwee Ong</i>	
A Novel Digital Twin Driven Multi-Camera Edge Computing Sensing System for Additive Manufacturing	824
<i>Martha Asare, Joel Mathew, Efren Saenz, Hongkai Yu, Jinghao Yang</i>	
PMUT-Based Compound Imaging Using Transmit-Receive Sub-Aperture Beamforming	828
<i>Gaia Giubilei, Mantalena Sarafianou, Duan Jian Goh, Yul Koh, Fabrizio Cerini, Alberto Leotti, Siow Pey Pea, Jia Hwee Eng</i>	
Optimized Target Detection for Point Cloud Generation with Radar-LiDAR Fusion	832
<i>Tae-Young Chun, Jeong-Hoon Park, Seong-Cheol Kim</i>	
Radar-Derived Peak-Trough Interval as a Temporal Marker of Ventricular Repolarization: Good Agreement with the Electrocardiographic J - Tend Interval	836
<i>Stephanie I Pella, Zainab Riaz, Neil Tom, Mark Halaki, Martin Ugander, Tuguy Esgin, Mehmet R Yuce</i>	

Photoinduced Nitrate Sensing with TiO ₂ Nanorods: Toward Efficient Nutrient Monitoring in Water and Soil.....	840
<i>Farbod Aleaziz, Fariborz Taghipour</i>	
Noise Suppression in MEMS and FOG Gyros Through an Adaptive Threshold Wavelet Algorithm	844
<i>Pedro Bossi Núñez, Ludovico Dindelli, Teresa Natale, Francesco Dell'Olio</i>	
Highly Predictive Modelling of Interferometric Fiber-Optic Gyroscopes and Its Experimental Validation	848
<i>Ludovico Dindelli, Pedro Bossi Núñez, Teresa Natale, Francesco Dell'Olio</i>	
A Low-Cost X-Band FMCW Phased Array ISAC System for Short-Range SAR Imaging and Backscatter Communication.....	852
<i>Nicole Pham, Kevin Ho, Matthew S. Reynolds</i>	
Noise and Interference Co-Suppression Technique in SPAD-Based Direct Time-of-Flight (d-ToF) Pulsed LiDAR Sensors	856
<i>Sadra Tafaghodi Jami, Sobhan Dabidian, Zahra Kavehvasht, Ali Fotowat-Ahmady, Jie Yuan</i>	
Highly Sensitive, Drift-Minimized, Flexible SWCNT/PEI-DAN Based CO Sensor	860
<i>Pavlos Tzourmpakis, Adarsh Sivan Pillai, Sakandar Rauf, Mohammad Vaseem, Igor Getmanov, Atif Shamim</i>	
Development of Smart Fiber Bragg Grating Based Surface Roughness Measurement System for Real Time Evaluation	864
<i>Suraj Kumar, Kapil Manoharan, Shantanu Bhattacharya, Ranamay Saha, Umesh Tiwari</i>	
Evaluation of Electrical Property Changes in Odor-Sensitive Membranes upon Gas Exposure for CMOS Odor Sensor Applications.....	868
<i>Yoshihiro Asada, Ik-Hyun Kwon, Kazuhiro Takahashi, Yong-Joon Choi, Kazuaki Sawada, Toshihiko Noda</i>	
Fully-Integrated Miniature LiDAR with 2.3k Points Resolution	872
<i>Fabrice Martin, Xavier Branca, Mathieu Auvray, Pascal Mellot, Neale A.W. Dutton, Andreas Assmann, Brandon Johnson, Fraser Williams, Axel Crocherie, Sara Pellegrini, Yandong Mao</i>	
The Influence of Coil Stray Capacity on the Sensitivity and Useful Bandwidth of Induction-Based and GMI Magnetic Sensors	876
<i>Miao Xu, Aktham Asfour</i>	
Unveiling Mental Workload via PPG: Morphological and Respiratory Feature-Driven Machine Learning Classification.....	880
<i>Marco Pogliano, Gabriele Luzzani, Alessandro Sanginario, Giorgio Guglieri, Danilo Demarchi</i>	
Data-Driven Conductivity Mapping for Tissue Margin Estimation with a Multi-Electrode Sensor Array.....	884
<i>Zoltan Lovasz, Carina Veil, Matthias Ege, Franziska Krauß, Oliver Sawodny</i>	
Low-Power Impact Detection and Localization on Forklifts Using Wireless IMU Sensors	888
<i>Lyssa Ramaut, Chesney Buyle, Jona Cappelle, Liesbet Van der Perre</i>	
An Electrochemical Fiber Sensor for Implantable Detection of Serotonin and Dopamine in Brain	892
<i>Yue Zhou, Yixin Zhao, Shanshan Zhang, Zhongyi Xu, Junhao Li, Bo Liang</i>	

Machine Learning-Based Band Selection for the Design of a Low-Cost VIS-NIR Microspectrometer for Smart Leaf Nutrient Monitoring	896
<i>Eleni-Ioanna Koutsovili, Giovanni Lombardo, Salvatore Serrano, Lucanos Strambini, Francesco Longo, Salvatore Surdo, Giuseppe Barillaro, Stefania Matteoli</i>	
First Experimental Demonstration of CMUT-Based Sensing for Early-Stage Bearing Faults	900
<i>Sourav Mukherjee, Brandon Hill, Hani Tawfik, Mohannad Elsayed</i>	
A 3D-Printed Torque Sensor with Integrated Transmission for Powered Orthosis	904
<i>Matteo Piratoni, Ilaria Mileti, Fabrizio Patanè</i>	
Comparative Waveform Analysis of Nose and Finger PPG Signals for Non-Invasive Blood Pressure Estimation.....	908
<i>Alice Scandelli, Costanza Cenerini, Ilaria Crupi, Federica Mozzini, Sarah Solbiati, Enrico Gianluca Caiani, Diana Trojaniello, Federica Villa</i>	
Improving the Accuracy of Direction-of-Arrival Estimation for Underwater Acoustic Signals Using a Semi-Circular Array and Wall Reflections	912
<i>Taiga Saito, Tadashi Ebihara, Atsushi Tsuchiya, Yuji Sato, Naoto Wakatsuki, Keiichi Zempo</i>	
Real-Time Gumbel-Softmax Adaptive Thresholding for Robust Object Classification Under High Illumination Conditions.....	916
<i>Hyeong-Ung Byeon, Tae-Hoon Eom, Hyeon-June Kim</i>	
Evolutionary Algorithms for Equivalent Circuit Modeling of PVDF- TrFE-BaTiO ₃ Piezoelectric Sensors: A Feasibility Study.....	920
<i>Annesha Mazumder, Qinrong He, Ensieh Hosseini, Hamida Hallil</i>	
Scalable Synthetic Data Generation for HDLSS SERRS cTnI Detection via Conditional GMMs	924
<i>Sahil Sharma, Thomas Poudevigne-Durance, Sayantan Tripathy, Ng Ka Wai, Muskaan Singh, Liam McDaid, Gerard L. Cote, Samuel B. Mabbott, Saugat Bhattacharyya</i>	
Study on Terahertz Conductivity Sensing Based on Laser-Induced Diamond Carbonization.....	928
<i>Xun Zhao, Rui You, Xiaomeng Bian, Yiling Lian, Ji Huang, Misheng Liang</i>	
Metasurface-Minituarized MEMS Vapor Cell for Advanced Time Synchronization.....	932
<i>Kentaro Iwami, Yuto Kataoka, Ponrapee Prutphongs</i>	
Plasmon-Enhanced Dual-Mode UV Photodetector Using Au-Decorated MoS ₂ /p-GaN Heterojunction for Self-Powered and High-Gain Operation	935
<i>Nur 'Adnin Akmar Zulkifli, Rozalina Zakaria, Nur Aina'a Mardhiah Zainuddin</i>	
Early H ₂ Sensor Response Prediction Using a Multi-Layer Perceptron (MLP)	939
<i>Raduan Sarif, Carlo Tiebe, Christian Herglotz</i>	
In-Sensor Linearization via Physical Computing: A Novel Approach to Sensor Data Preprocessing.....	943
<i>Anahita Oliaee, Mohammad Narimani, Behraad Bahreyni</i>	
GPT4Rehab: AI-Based Upper-Limb Rehabilitation Trainer with Stereo Cameras	947
<i>Haoyan Liu</i>	
System Architecture of a Radar-Based Structural Health Monitoring System for Wind Turbine Blades Using Power Over Dataline	951
<i>Tobias Huemmer, Thomas Kurin, Moritz Maelzer, Katharina Fiedler, Sebastian Beck, Jochen Moll, Fabian Lurz</i>	

Reversibly Morphing Carbon Nanotube Fiber Sensor for Real-Time, Minimally Invasive Monitoring of Hepatic ROS Levels.....	955
<i>Yixin Zhao, Yue Zhou, Shanshan Zhang, Yiming Wei, Lu Fang, Bo Liang</i>	
Quasi p-i-n Organic Photodetectors for Self-Powered Dual-Wavelength Sensing.....	959
<i>Hossein Anabestani, Zeljko Zilic, Sharmistha Bhadra</i>	
Photoacoustic Sensing in Sustainable Mining: Predicting Coal Susceptibility to Spontaneous Combustion	963
<i>Abhijeet Gorey, Pathikrit Gupta, Amit Swain, Subhasri Chatterjee, Chirabrata Bhaumik, Tapas Chakravarty</i>	
Far-Infrared Image Deblurring Based on a Thermal Temporal Transient Model by Using Deep Unfolding	967
<i>Tenshin Kuroiwa, Kosuke Kurihara, Yoshihiro Maeda, Daisuke Sugimura, Takayuki Hamamoto</i>	
SLSP-Based Sensors for Ceramic Dielectric Characterization Under Pressure	971
<i>Hao Xu, Yujie Hua, Mengmeng Yang, Kun Liu, Gang Shao, Wenxuan Tang</i>	
The Effects of MFC Material and Geometry on TMR Sensing Properties.....	974
<i>Peter O'Hanlon, Huxi Wang, Asfand Tanwear, Mahmoud Rasly, Siming Zuo, Kianoush Nazarpour, Hadi Heidari</i>	
A Salinity-Compensation in situ Microwave Phase Sensing for Water Film Thickness on Pavement.....	978
<i>Guoxin Yang, Chuanbiao Liu, Yuan Chen, Lei Han, Qing-An Huang</i>	
Maximizing TMR Sensor Resolution Via Optimized Magnetic Flux Concentrators	982
<i>Asfand Tanwear, Peter O'Hanlon, Huxi Wang, Mahmoud Rasly, Siming Zuo, Kianoush Nazarpour, Hadi Heidari</i>	
Gate-Bias Modulation for Selective Odor Sensing in Polymer-Based TFT Sensor Array	986
<i>Minji Yu, Wonhyuk Choi, Heechang Park, Jeonghun Lee, Goeun Pyo, Jeonggyun Jang, Hyeokjin Kwon, Hyeongtae Lim, Hyukjun Kwon, Jaeun Jang</i>	
Integration and FOV Characterization of an All Silicon Microlens Array for Temperature Detection	990
<i>Francesca Grossi, Silvia Nicoli, Giuseppe Bruno, Lorenzo Tentori, Andrea Ivano Melloni, Francesco Morichetti</i>	
Layer-by-Layer Assembled TiO ₂ Coated Hetero-Core Optical Fiber Sensor for High-Temperature Sensing via Lossy Mode Resonance	994
<i>Masahiko Kuroiwa, Kodai Kikuchi, Michiko Nishiyama, Kazuhiro Watanabe, Junichi Ida</i>	
Detection Characteristics of Smoke and Flames Using Si-RGB Color Sensors.....	998
<i>Bo Hee Lee, Jiwon Choi, Haiyoung Jung</i>	
A True Zero-Power, Omnidirectional MEMS Acceleration Logger with Digital Output.....	1002
<i>Inês Sofia Garcia, Filipa C. Mota, Fahimullah Khan, Carlos Ferreira, Jorge Cabral, Rosana A. Dias, Filipe S. Alves</i>	
Radial Shaft Misalignments Measured by a Sensor-Integrating Jaw Coupling.....	1006
<i>Arthur Ewert, Johannes D. M. Menning, Thomas Rosenlöcher, Artem Prokopchuk, E.-F. Markus Vorrath, Thomas Wallmersperger, Berthold Schlecht</i>	
Optical Fibre-Based Flexure and Strain Sensor for Implantable Biomedical Applications.....	1010
<i>Alessia Fragapane, Maxime Verstraeten, Ramzi Ben Hassen, Pascal Doguet, Anne Vanhoestenbergh, Antoine Nonclercq</i>	

Repealing the Responsivity to Selectivity-Compromise of Carbon Nanotube-Based Hydrogen Sensors by Polymer/Noble-Metal Functionalization	1014
<i>Simon Böttger, Tobias Iffland, Martin Hartmann, Leticia Alves da Silva, Ray Saupe, Sascha Hermann</i>	
Laser-Based Rain-Drop Sensing for Wind Error Correction in Rainfall Measurements	1018
<i>Mark Dutton, Bailey Hurst, Phillip Harley, Domenico Balsamo</i>	
Cuprous Oxide Functionalized Transition Metal Diselenide for Gas Sensing Applications	1022
<i>Mubdiul Islam Rizu, Mohamed Elsheshtawy, Fatima Ezahra Annanouch, Dalal Fadil, Eduard Llobet</i>	
Multivariate and Multiharmonic Impedimetric Analysis for Sensitivity Improvement of miRNA-21 Detection	1026
<i>Francesca Izzo, Annesha Mazumder, Florence Poullotier de Gannes, Hamida Hallil</i>	
Void Fraction Measurement in Multiphase Flows: Sensor Calibration and Performance	1030
<i>Daniely Neves, Victor Gomes, Natan Bulgarelli, Rodolfo Perissinotto, William Monte Verde, Marcelo Castro</i>	
Investigating Performance Enhancements of CMUT Based Flow Measurement Using Regression Techniques.....	1034
<i>Meghana Vishwanatha, Ivan Kraljevski, Ilkin Alkhasli, Nooshin Saeidi, Karman Selvam, Maik Wiemer, Harald Kuhn</i>	
Non-Contact Detection of Concentration in Fluid Mixtures Using Capacitive Micromachined Ultrasound Transducer (CMUT)	1038
<i>Karman Selvam, Nooshin Saeidi, Yves Schwarzmann, Meghana Vishwanatha, Venkata Shanmukha Srivatsav Pakki, Maik Wiemer, Harald Kuhn</i>	
Enhanced Detection of Individual Gas Bubbles in Multiphase Flow by Distributed Acoustic Sensing	1042
<i>Yannik Schick, Lukas A. Pichler, Mark W. Hlawitschka, Marco J. Da Silva</i>	
Crumpled and Exfoliated Graphene as Transducers in High Sensitivity Potentiometric Nitrate Sensors	1046
<i>Henry Wysong-Grass, Kuan-Yu Chen, Sharar Muhtasim, Aydan Akyildiz Mert, Claudia López-Cámara, Hartmut Wiggers, Joseph Andrews</i>	
Robust Visual-Inertial Odometry with Pedestrian Dead Reckoning Under Vision-Degraded Conditions	1050
<i>Sohee Park, Hanyeol Lee, Chan Gook Park</i>	
Compact LTCC-Integrated Fully Decoupled Biasing for Wireless Sensors	1054
<i>Ehsan Fallah nia, Ammar Kouki</i>	
Leveraging TS2Vec to Enhance Radar-Based Object Detection Under Adverse Weather Conditions.....	1058
<i>Ziaaddin Sharifisoraki, Marzieh Amini, Sreeraman Rajan</i>	
Using 3D Hall Sensors to Measure Mechanical Stress for Planar Sensor's Sensitivity Compensation	1062
<i>Tobias Chlan, Carl Riehm, Markus Sand, Philip Beran, Ralf Brederlow</i>	
Effect of Electrode Printing Technology on Glucose Sensing Using ZnO Nanoparticles	1066
<i>Kimberly Mpala, Trudi-Heleen Joubert</i>	
Enhanced Energy-Aware LoRaWAN Scheduler for Intermittent Sensor Systems	1070
<i>Domenico Balsamo, Fatma Benkhelifa, Sergey Mileiko, Firdaus Ritom</i>	

Live Demonstration: “Intelligent, 3D-Printed Respiratory Add-On for FFP3 Masks: Enhancing HSE Through Open and Scalable Design”	1074
<i>Mariangela Pinnelli, Fabrizio Marra, Massaroni Carlo, Giulia Di Salvo, Mariangela Filosa, Calogero Oddo, Alessandro Ledda, Emiliano Schena, Alessio Tamburrano, Maria Sabrina Sarto</i>	
Portable Multi-Sensor System for Detection of VOC Biomarkers in Diabetes	1075
<i>Wisarn Patchoo, Sirada Janjaochay, Charusluk Viphavakit</i>	
Label-Free Electrochemical Detection of Transthyretin for Patients with Cardiac Amyloidosis	1079
<i>Seerat Sekhon, Guglielmo Verona, Richard Bayford, Andreas Demosthenous</i>	
Electronic Nose for Quality Control in Tomato Processing	1083
<i>Carlos Sanchez-Vicente, José Pedro Santos, Isabel Sayago, Jesús Lozano, Ramiro Sánchez, José Ignacio Suárez</i>	
Notice of Removal: Ground-Aware 4D Radar Odometry via Voxel-Based Ground Segmentation.....	1087
<i>Feipeng Chen, Lihui Wang, Yi Yang, Zehua Ying, Kui Wang, Song Xue, Tianrong Gao, Lili Xia</i>	
A Smart Insole with Integrated Perfusion Monitoring and Electrical Stimulation for Enhancing Diabetic Foot Ulcer Healing.....	1091
<i>Anthony Hanson, Masoud Panahi, Simin Masihi, Dinesh Maddipatla, Alimohammad Adineh, Binu Narakathu, Daryl Lawson, Massod Z. Atashbar</i>	
A TMR-Enabled Wristband for Gesture Recognition.....	1095
<i>Eisa Aghchehli, Chenfei Ma, Maja Schmidt, Huxi Wang, Siming Zuo, Hadi Heidari, Kianoush Nazarpour</i>	
Force Sensors Based on Optomechanical Cavities Made from Silicon Nanopillars	1096
<i>Daniel Navarro-Urrios, Martin Poblet, David Alonso-Tomás, Elena López-Aymerich, Christian Vinther Bertelsen, Rahul Singh, Sergi Hernandez, Maria Dimaki, Winnie Edith Svendsen, Juliana Jaramillo-Fernández, Mauricio Moreno-Sereno, Albert Romano-Rodriguez</i>	
A Quantum Neural Network Algorithm for Microplastic Identification Using Raman Signatures Collected During Field Tests	1100
<i>Xinyu Zhang, Cheng-Hao Yu, Leixin Ouyang, Rong Fu, Lina Pu, Mark Ming-Cheng Cheng</i>	
Flexible Barometric Tactile Sensors for Robotic Grasping Applications	1104
<i>Aiden Shaevitz, Srivatsan Balaji, Matthew L. Johnston, Joseph R. Davidson</i>	
A Review of Recently Developed Piezoelectric MEMS Microspeakers	1108
<i>Rong Fu, Xinyu Zhang, Leixin Ouyang, Tauhidul Haque, Rui Feng, Mark Ming-Cheng Cheng</i>	
Thermal Characterization of Tactile E-Skin Based on Rayleigh Backscattering Optical Fiber.....	1112
<i>Daniele Moglia, Marian Statache, Andrea Ortone, Domenico Camboni, Tommaso Proietti, Mariangela Filosa, Calogero Maria Oddo</i>	
Wearable Integrated Multi-Sensor Modality for Real-Time Health Monitoring	1116
<i>Aiman Mahar, Dro Boodaghian, Alessandro G. D'Aloia, Hossein C. Bidsorkhi, Maria S. Sarto</i>	
Fabrication of Curved and Controlled-Slope Sidewall Profiles in Photoresist Using Low-Cost Grayscale Masks.....	1120
<i>Kimberly Rice, Khalil Najafi</i>	
Characterization of a Wearable Multi-Sensor Breathing Device	1124
<i>Bhawya, Misk Damdoum, Masa Damdoum, Afra Siddiq, Brooke R Shepley, Anthony R Bain, Simon Rondeau-Gagné, Mohammed Jalal Ahamed</i>	

Quantile Thresholding and Unsupervised AI for Human Spheroids Detection in Tissue-Mimicking Phantoms	1128
<i>Ilaria Benedetti, Fabrizia Auletta, Ivana Barravecchia, Debora Angeloni, Calogero Maria Oddo</i>	
Combined GNSS/Visual Inter-Robot Tracking Method for Open-Path Gas Tomography	1132
<i>Heiko Lohrke, Harald Kohlhoff, Jessica Erdmann, Nicolas P. Winkler, Patrick P. Neumann</i>	
Assessment of School Building Performance via Using Occupancy-Generated Carbon Dioxide	1136
<i>Fabian Sievers, Nils Langer, Sybille Braungardt, Álvaro Ortiz Pérez, Stefan Palzer</i>	
Muscle Activity Monitoring via Mechanomyography Using Soft 3D-Printed Piezoelectric Sensors	1140
<i>Mark Suppelt, Bastian Latsch, Julian Seiler, Farah N. Mansour, Felix Herbst, Stephan Schaumann, Sven Suppelt, Steffen Graffe, Philipp Beckerle, Mario Kupnik</i>	
Reflective Multi-PD PPG Sensor for Health Monitoring Under Indoor Ambient Light	1144
<i>Hossein Anabestani, Zeljko Zilic, Sharmistha Bhadra</i>	
Experimental Performance Analysis of DOA Estimation Algorithms	1148
<i>Michael Ta, Laurie Contevelle, Elizabeth Colin, Jean Marc Laheurte, Jimmy Leszczynski, Benoit Poussot</i>	
Development of a Cost Effective, Hybrid Microfabricated, All Glass Hermetic Package for Wireless In Vitro and Wearable Electrode Array Systems in Low Resource Settings	1152
<i>Faisal Bin Kashem, Jorge Manrique Castro, Omar Cepeda Torres, Surbhi Tidke, Cacie McDorman, Gary Davies, Swaminathan Rajaraman</i>	
Laser-Induced Graphene/PDMS Soft Pressure Sensors for Detecting Low-Pressure Variations in Sports Garments	1156
<i>Mohammad Amin Amindehghan, Rudolf Seethaler, Farzan Gholamreza, Adrian Lai, Abbas S. Milani</i>	
Live Demonstration: Printed Graphene-Based Smart Insole for Real-Time Pedobarometry and Gait Analysis	1160
<i>Hossein Cheraghi Bidsorkhi, Alessandro Giuseppe D'Aloia, Maria Sabrina Sarto</i>	
A Morphologically-Aware Transformer Network for High-Fidelity V1-V5 ECG Lead Generation	1161
<i>Tanay Chitlur, Nagabhushan Chitlur, Ajay Tripuraneni</i>	
In-Situ Monitoring of Diamond Film Growth with Double-Layer Optical Fiber Interferometer	1165
<i>Marcin Koba, Agnieszka Martychowicz, Norbert Kwietniewski, Štěpán Potocký, Alexander Kromka, Mateusz Śmietana</i>	
SincNet-RNN Hybrid Neural Network for Detecting Industrial Faults Through Ultrasonic Signal Processing	1169
<i>Amirhossein Moshrefi, Frederic Nabki</i>	
Two Tone Excitation for Fundamental Mode Orthogonal Fluxgate Gradiometer	1173
<i>Michal Dressler, Mattia Butta Gonzales, Michal Janošek</i>	
Lunar Rock Reconstruction with RGB-D Images	1177
<i>Yiyan Ruan, Erik Komendera</i>	
AI-Based Latency Optimization in ORAN for IoT Sensor Networks	1181
<i>Shruthigna Chandupatla, Mohammed Zamshed Ali</i>	

Decomposing Sensor Transfer Functions for Compensation Algorithm Design in Resource-Constrained Settings.....	1185
<i>Gustav Bohlin, Cheng Yang, Tobias Oechtering</i>	
Passive Gas Sensing of Hydrogen-Oxygen Mixtures by Intrinsic Noise Spectrum Analysis of a MEMS Microphone.....	1189
<i>Emanuel Wallesch, Gabriel Rodriguez Gutierrez, Alvaro Ortiz Perez, Stefan Palzer</i>	
A Tube-Integrated Sensing System for Continuous Cell Culture Monitoring	1193
<i>Zheyuan Zhang, Shirin Parvin, Mick Wu, Meng Lu</i>	
Microfluidic Chip with Cobalt Oxide-Modified Laser-Scribed Graphene Electrodes for Non-Enzymatic Glucose Detection from Urine Samples	1197
<i>Mario Soto Martinez, Abdullah Bukhamsin, Nadia Houti, Khaled Nabil Salama</i>	
Laser Rangefinder and Steering Mirror Optimization by Radar and Geometric Modeling.....	1201
<i>William Ediger, Philip Ferguson</i>	
Model-Free Sensor Fault Detection in Lithium-Ion Battery Packs Under Unknown Charging Conditions Using Sensor-to-Sensor Dynamics.....	1205
<i>Mohammad Al Saaideh, Khaled Aljanaideh, Lihong Zhang, Mohammad Al Janaideh</i>	
An Echo Enhancement Calculation Methodology for Lens-Based Wireless Sensing	1209
<i>Yujie Hua, Huaqing Fan, Hao Xu, Baiyun Wang, Wenxuan Tang</i>	
Inertial Measurement Unit Size Effect Calibration for Arbitrarily Rotated Accelerometer Triad	1213
<i>Gataullin Roman, Kozlov Alexander, Kapralov Fedor</i>	
Simultaneous Doppler Velocimetry and Backscatter Communication with a Low-Cost X-Band Radar Module.....	1217
<i>Kevin J. Ho, Sara M. Reyes Lopez, Matthew S. Reynolds</i>	
Channel Selective Bluetooth Low Energy (BLE) Backscatter from Wireless Sensor Devices Using Bulk Acoustic Wave (BAW) Filters.....	1221
<i>Kevin J. Ho, Matthew S. Reynolds</i>	
Performance Evaluation of Insect Electroantennography-Based Bilateral Sensors for Mobile Odorant Sensing	1225
<i>Yuji Sukekawa, Jeongmin Lee, Takuya Nakajo, Ryohei Kanzaki, Hidefumi Mitsuno</i>	
Trainable Fractional Spectrogram for Phonocardiogram Classification.....	1229
<i>Ebrahim A. Nehary, Sreeraman Rajan</i>	
Plastic Material Identification for Recycling Using 1D SWIR Spectral Data with AutoEncoder-Assisted XGBoost Classification.....	1233
<i>Ki-Hyun Hwang, Chang-Sug Lee, Sang Jun Lee, Hyeon-June Kim</i>	
Preliminary Wrist Angle Estimation using FBG Sensors for Hand-Exoskeleton Monitoring	1237
<i>Juan Andrés García, Juan C. Maldonado-Mejía, Benicio Ribon, Marcelo Eduardo Vieira Segatto, Carlos A. Cifuentes, Camilo A. R. Diaz</i>	
An Unsupervised Learning Algorithm for Impulse-Based Detection and Categorization of Bedload Transport Using Hydro-Acoustic Data	1241
<i>Quinn Morgan, Nate Sjullie, Mitch Montee, James White, David C. Burnett</i>	
Textile Sensors for Detecting Swelling Linked to Peripheral IV Failure	1245
<i>Denise Wilson, Lorenzo Guio, Greg Valentine</i>	

Task-Difficulty Aware Meta-Learning for Adaptive Few-Shot Human Activity Recognition Using UWB Sensors	1249
<i>Ji-Sang Park, Tae-Hoon Eom, Seung-Hwan Jung, Woo-Jin Yun, Dong-Jin Ji, Hyeon-June Kim</i>	
Screen-Printed Structured Silicon-Graphene Electrodes for High Capacity and Cycling Lithium-Ion Batteries.....	1253
<i>H. R. K. M. Emani, D. Maddipatla, Tony Hanson, B. B. Narakathu, M. Z. Atashbar</i>	
Highly Sensitive P(VDF-TRFE)/Carbon Black Nanocomposite Pressure Sensor for Sub-kPa Detection	1257
<i>Lavanya Muthusamy, Goutam Koley</i>	
Grasp Type Classification Using a Capacitive Bending Sensor Toward Hand Assistive Robots	1261
<i>Toshihito Ohashi, Shima Okada, Naruhiro Shiozawa, Daisuke Goto, Tatsuya Kobayashi</i>	
AI-Enabled Smart Hygiene System for Real-Time Glucose Detection.....	1265
<i>Khan Masood Parvez, Sk Md Abidar Rahaman, Ali Shiri Sichani, Hadi AliAkbarpour</i>	
Whispering Gallery Mode Resonances in 2-Photon Polymerized 3D Printed Methacrylate Based Microspheres	1269
<i>Ever J. Dominguez Rodriguez, Antonio Barbone, Miguel A. Palacios Mora, Angel Yglecias, Soheil Farazi, Srinivas Tadigadapa, Robert C. Roberts</i>	
Investigation of Optimal Component Combinations for Odor Reproduction Based on Subtractive Mixing from Olfactory White.....	1273
<i>Riku Nomura, Yuki Yoshida, Ryusuke Chida, Uta Nakashima, Haruka Matsukura, Hiroshi Ishida</i>	
Towards A Modular Digital Sensor Interface for Resilient Sensor Measurements.....	1277
<i>Ryan M. Price, Gabriel Saucedo, Emilio Jackson, Zander Lin Cox, John Perez, Robert C. Roberts</i>	
Design of Wide-Area Optical Camera Communication System with Fisheye Lens and Diffusion Filter	1281
<i>Emi Kitano, Tadashi Ebihara, Naoto Wakatsuki, Yuka Maeda</i>	
Event-Based Vibration Measurement via Dynamic Mode Decomposition	1285
<i>Hyuga Okamoto, Kosuke Kurihara, Yoshihiro Maeda, Takayuki Hamamoto</i>	
Real-Time Monitoring of Molten Cryolite Composition Using a Resonant Capacitive Sensor.....	1289
<i>Fakhreddin Amirhosseini, Abid Ali, Behraad Bahreyni</i>	
A Smart Helmet Sensor System for Continuous Monitoring of Transient Impact Events in Low Power Modes.....	1293
<i>Chandrashekhhar Choudhary, Tianshuo Wang, Aakash Jeyakanthan, Jacob Romer, Shloka Shah, Mohammad Islam, Eric Nauman, Jing Shi, Tao Li</i>	
A Sliding Mode Triboelectric Nanogenerator (TENG) Based on Screen-Printing Technique	1297
<i>S. Ali, D. Maddipatla, A. J. Hanson, B. J. Bazuin, M. Z. Atashbar</i>	
Reconstruction of Full Time Series Data from Gas Sensor Array by Partial Measurement Using Sparse Sensor Placement Optimization Method.....	1301
<i>Shigeyasu Uno</i>	
Sub-50 μ s Sample-Level Synchronization in a Battery-Powered BLE MEMS Accelerometer Node for Industrial Vibration Monitoring.....	1305
<i>Reza Taherkhani, Swarna Narayanan, Stoyan Nihtianov</i>	

Nanoplastic Identification and Quantification with Nanoelectromechanical System-Based Fourier Transform Infrared Spectroscopy: NEMS-FTIR	1309
<i>Jelena Timarac-Popović, Johannes Hiesberger, Eldira Šesto, Niklas Luhmann, Ariane Giesriegl, Hajrudin Bešić, Josiane P Lafleur, Silvan Schmid</i>	
A Combined Dynamic Mode Decomposition–Constant False Alarm Rate Algorithm for Near-Real-Time Moving Target Detection.....	1310
<i>Andrej Vukovic, Thomas Forsdyke, Shashank Pant, Pascale Sévigny, Bhashyam Balaji, Sreeraman Rajan</i>	
Molecular Imprinted Polymer (MIP)-Based Optical Sensor for Sensitive Detection of Methamphetamine	1314
<i>Kornlavit Lertsudkanung, Nuntaporn Kongsawang, Apinya Tubtimrattana, Jakkapan Boonsritan, Parath Thirati, Charusluk Viphavakit</i>	
Modeling of Evanescent Fiber Sensors for CO ₂ -H ₂ O Detection in the Mid-Infrared Wavelength	1318
<i>Fatemeh Abrishamian, Ai Hosoki, Airi Suka, Akira Ueda, Hideki Kuramitz, Amane Terai</i>	
Quantifying and Predicting Noise Impacts of Small Aircraft: A Scalable Framework for Measurement and Analysis.....	1322
<i>Vinamra Singhal</i>	
Wheel Force-Based Road Surface Classification for Intelligent Tire Testing	1326
<i>Ti Wu, Dong Wang, Lihang Feng, Weigong Zhang, Xiaolong Zhang, Huawen Yan</i>	
A Novel Time Synchronization System Design and Application Considering Wave Modulation for Underwater Stereo-PIV Measurement.....	1330
<i>Jaehoon Lee, Seunghyun Hwang, Young-Yeon Lee</i>	
Arrayed Triaxial Force Plate System Using High-Speed Line-Scan Camera and Sampling Moiré Method	1333
<i>Yukitake Nakahara, Toshihiro Shiratori, Hidetoshi Takahashi</i>	
Detecting Respiratory Tract Infections Using Wearable Devices: Assessing the Impact of Study Parameters in Real-World Applicability	1337
<i>Inka Mustajoki, Katri Karhinoja, Matti Kaisti</i>	
Live Demonstration: A vAFE-Based Wearable for Real-Time ECG Monitoring and Analysis	1341
<i>Federica Durini, Lars Ingmar Stumpp, Giuseppe Spingola, Matteo Mercati, Valentine Beux, Enrico Alessi, Cristina Bagini, Calogero Maria Oddo, Mariangela Filosa</i>	
Sensitivity-Aware Transformer for Robust Compressor Fault Detection in Natural Gas Pipelines	1342
<i>Khadija Shaheen, Apoorva Chawla, Ferdinand Evert Uilhoorn, Pierluigi Salvo Rossi</i>	
Enhancing Face Orientation Sensing via Frontal Point Cloud Density Augmentation by Novel Distance-Adaptive Downsampling Method	1346
<i>Ryusei Takahashi, Chinthaka Premachandra</i>	
Microwave Displacement Sensing of Automatic Trolling Motor Based on Optically Transparent Antenna	1350
<i>Kam-Weng Tam, Paulo Olavo Lima Neves Oliveira, Sio-Hon Pan, Wenhai Zhang</i>	
Live Demonstration: Intelligent Mailbox System Integrating Image Recognition and Large Language Models	1354
<i>Huan-I Liao, Jen-Chieh Wu, Yi-Ting Wang, Kun-Lin Liu, Shaksank Mishra, Jia-Ming Liang, Jen-Jee Chen</i>	

FlexGlove: Grasp-Based 3D Object Reconstruction Using Wearable Sensors	1355
<i>Nanda Mitra Pammi, Mohit Jagini, Madhav Rao</i>	
Passive Spherical Capacitive-Based Resonant Sensor for Wireless Soil Moisture Monitoring	1359
<i>Sheng Ding, Qiwu Zhang, Shad Roundy, Kam K. Leang, Cody Zesiger, Darrin J. Young</i>	
A Dual-Mode AZO-Based Surface Acoustic Wave Temperature Sensor in Single-Phase Unidirectional Transducer Configuration	1363
<i>Rafael M. Pangilinan, Salvacion B. Orgen, Rozen Grace B. Madera, Magdaleno R. Vasquez, Maria Theresa G. De Leon</i>	
Edge AI-Enabled Smart Pill for Low-Power, Location-Aware, Closed-Loop Gut Applications.....	1367
<i>Md Farhad Hassan, Shounak Das, Angsagan Abdigazy, Mohammed Arfan, Yasser Khan</i>	
Shear and Out-of-Plane Stress Analysis in Silicon Chip-in-Foil Assemblies	1371
<i>Vartika Verma, Carl Riehm, Tobias Chlan, Szabolcs Molnar, Ralf Brederlow</i>	
Improving Inductive Sensing of Superparamagnetic Nanoparticles Through Orientation of Easy Axes.....	1375
<i>Margo Hauwaert, Nordin Trifiro, Vanessa Pilati, Louise Lejeune, Simo Spassov, Martin Lefebvre, Ramy Moumneh, Sophie Hermans, Montserrat Rivas, Jean-Pierre Raskin</i>	
Graph-Based Strategies for Optimizing Mobile Sensor Distribution in Decentralized Urban Pollution Monitoring Across Dynamic Global Cities.....	1379
<i>Daniel Mutembesa, Engineer Bainomugisha</i>	
A High Sensitivity, Low Noise Interface for Amperometric Electrochemical Hydrogen Sensors	1383
<i>Shuaishuai Ling, Foster Caragay, Hongwei Qu</i>	
Batteryless UHF-RFID Memory-Enabled Sensor for the Detection of Entry Point Openings.....	1387
<i>Mahdi Barati, Mohammadesmaeil Akbarpour, Rashid Mirzavand</i>	
Self-Compensation Technology for Temperature Drift in Resonant Accelerometers.....	1391
<i>Ting Li, Zhongrui Ma, Zhaoli Wei, Longqi Ran, Jiangbo He, Wu Zhou</i>	
A Compensation Method of Capacitive Angle Sensors in Ultrasonic Motors During Start and Stop Stages	1395
<i>Zhongrui Ma, Xin Zhao, Zhaoli Wei, Ting Li, Longqi Ran, Jiangbo He, Wu Zhou</i>	
Battery Core Temperature Sensing Using Electrochemical Impedance Spectroscopy and Data- Driven Regression: A Comparative Evaluation.....	1399
<i>Shabnam Razmjooei, Saleh Mohammed Shahriar, Amir Shabani, Assa Aravindh Sasikala Devi, Tina Shoa</i>	
Self-Powered Wearable Drone Control System Based on Triboelectric Nanogenerators.....	1403
<i>Shingirirai Chakoma, Rahim Esfandyarpour</i>	
Ultimate Limits of Charge Detection of Molecular Nanoscale Dipoles Using Single-Electron Transistors	1407
<i>Gergo P. Szakmany, Enrique Blair, Alexei O. Orlov, Mohammad Istiaque Rahaman, Gregory L. Snider</i>	
State of Charge Estimation of Batteries Using Physics Guided Neural Network and Sensor Data.....	1410
<i>Saleh Mohammed Shahriar, Shabnam Razmjooei, Amir Shabani, Tina Shoa</i>	
Thermal Characteristics of an Electric Field Mill in the Nonlinear Duffing Regime.....	1414
<i>Lifang Ran, Hongyun Ren, Najib Kacem, Jianhua Li, Xiaolong Wen, Ashwin A. Seshia</i>	

CLAW: Hybrid Microfluidic- Mechatronic Precipitator for LAMP-Based Airborne Pathogen Sensors	1418
<i>Jahsim Albaghdadi, Arian Ghaicy, John Sabino, Michael Caffrey, Igor Paprotny</i>	
Dual-Oscillator NEMS Based Hydrogen Detection	1422
<i>W. G. Jiang, Monan Ma, Hagen Gress, I. I. Kaya, M. S. Hanay, Kamil L. Ekinci, Miguel Gonzalez</i>	
Shape Sensing of Continuum Manipulator Using Sliding Resistive Flex Sensors	1426
<i>Chenhan Zhang, Shaopeng Jiang, Heyun Wang, Joshua Liu, Amit Jain, Mehran Armand</i>	
Machine Learning Based Ball Size Monitoring in Ball Mill Using Novel Mode and Feature Selection Methods Over Beamformed Audio	1430
<i>Mayukh Biswas, Amit Swain, Raj Rakshit, Chirabrata Bhaumik, Subhrajit Das, Govindha Pavan Tati, Arun Kumar Majumder</i>	
Electrochemical Sensor Integration for Advanced Microphysiological Systems	1434
<i>Kosuke Ino</i>	
Active Sidewall Passivation Layers for High-Performance Diodes	1435
<i>William S. Wong</i>	
Development of Simple and Highly Sensitive Antigen Test Kits for On-Site Testing of Infectious Diseases at Livestock Production Sites	1436
<i>Masaya Miyazaki</i>	
Design and Optimization of Micro Pirani Gauges.....	1437
<i>Yi Chiu, Manu Garg, Pushpapraj Singh</i>	
Trends in High-Resolution Sensor Data Processing and AI for Power Grid Monitoring and Intelligence	1438
<i>Farnoosh Rahmatian</i>	
Towards decentralized diagnostics for women's health using silicon photonic integrated circuits	1439
<i>Samantha M. Grist, Lauren S. Puumala, Karyn Newton, Mohammed A. Al-Qadasi, Maggie Wang, Myra Wei, Ben Cohen-Kleinstein, Sheri J. Chowdhury, Kithmin Wickremasinghe, So Jung Kim, Stephen Kioussis, Yuting Hou, Sajida Chowdhury, Avineet Randhawa, Matthew Mitchell, Lukas Chrostowski, Sudip Shekhar, Karen C. Cheung</i>	
Advancing On-Demand Sweat Biosensing via a Flexible Iontophoretic Platform.....	1440
<i>Moritz Ploner, Benjamin Schmid Ties, Arvind Gurusekaran, Giulia Elli, Luisa Petti</i>	
PPG-Based Biometric Token for Key Generation to Secure Medical Data in IoT-Driven Healthcare.....	1443
<i>Ichrak Eddor Mnijli, Amal Sammoud, Guillaume Terrasson, Nicolas Huloux, Mariem Feki</i>	
Wrist-to-Back Signal Reconstruction for Real-World Gait Monitoring via Frequency-Domain Modelling	1447
<i>Shimaa Aboudeif, Shahab Alizadeh, Sayeh Bayat</i>	
Unsupervised Anomalous Sound Detection in Industrial Machine Facilities.....	1451
<i>C. Pichler, M. Neumayer, C. Feilmayr, S. Schuster, H. Wegleiter</i>	
Hybrid CIS+EVS Sensor for Industrial Application.....	1455
<i>N/A</i>	
Uncover Engineering Design & Modeling Challenges of Wearable Sensors Using Simulations.....	1456
<i>Laila Salman</i>	

On-Chip Control of Two-Dimensional Materials via MEMS 1459
Yuan Cao

Author Index