

Table of Contents

Dynamic Characterization of Bi-material Cantilevers <i>Roy Bijster, Jan de Vreugd, and Hamed Sadeghian</i>	1
Monitoring of Hazardous Scenarios using Multi-Sensor Devices <i>Matthias Bartholmai, Enrico Koeppe, and Patrick P. Neumann</i>	9
Shearing Force Measurement Device using an Integrated Micro Optical Displacement Sensor <i>Takuma Iwasaki, Toshihiro Takeshita, Renshi Sawada, Satoshi Takeuchi, and Masutaka Furue</i>	14
Sensing Method and Fiber Optic Capillary Sensor for Testing the Quality of Biodiesel Fuel <i>Michal Borecki, Piotr Doroz, Jan Szmidt, Michael L. Korwin-Pawlowski, Andrzej Kociubinski, and Mariusz Duk</i>	19
Design of Indirect Time-of-Flight Based Lidar for Precise Three-Dimensional Measurement Under Various Reflection Conditions <i>Junhwan Jang, Sungui Hwang, and Kyihwan Park</i>	25
Strategies for Realising Long-Term Autonomous Chemical Sensing Devices <i>Deirdre Cogan, Fiachra Collins, Kate Meagher, John Cleary, Thomas Phelan, and Dermot Diamond</i>	30
Design and Characterization of the Seashell Effect Pretouch Sensor Integrated Into Robot Grippers <i>Liang-Ting Jiang and Joshua R. Smith</i>	34
Carrier Photogeneration During UV-Vis Irradiation on Horizontal and Vertical Metal-Semiconductor Structures Based on Rutile-Phase TiO ₂ Nanoparticles <i>Joel Molina, Carlos Zuniga, Edmundo Gutierrez, Eunice Mendoza, Jose Luis Sanchez, and Erick Bandala</i>	41
Simple Interface Circuit for High-Resolution, Multichannel, Smart Temperature Sensing based on NTC Thermistors <i>Sergey Yurish and Javier Canete</i>	46
Lab-on-Phone: A Laboratory-on-Phone System <i>Fredy Segura Quijano, Juan Manuel Soto Valencia, and Jorge Mario Garzon Rey</i>	53
A New SAW Device Simulator Based on Mason's Equivalent Circuit Model <i>Aina Heritiana Rasolomboahanginatovo, Frederic Domingue, and Adel Omar Dahmane</i>	59
Wide Dynamic Range Readout for CMOS Pixel Using PWM and Direct Mode Sensing Techniques <i>Emmanuel Gomez Ramirez, Jose Alejandro Diaz Mendez, Mariano Aceves Mijares, Jose Miguel Rocha Perez, Jorge Miguel Pedraza Chavez, and Carlos Dominguez Horna</i>	64
Dual-Band Dipole Antenna for Sensing Applications in ISM Bands	71

Miniaturized Two-level Controller Based on Moisture-sensitive Hydrogels <i>Arndt Steinke, Thomas Frank, Andrea Cyriax, Christian Bellmann, Gerald Gerlach, Helmut F. Schlaak, and Reza Sarwar</i>	75
The Development of a Geo-Referenced System for Machine Controlled Construction Equipment <i>Nicholas Muth and Mike Chapman</i>	80
Orientation Analysis through a Gyroscope Sensor for Indoor Navigation Systems <i>Valentina Marotto, Mariella Sole, Tiziana Dessi, Andrea Manchinu, Davide Carboni, and Alberto Serra</i>	85
A Coordinated Matrix of RFID Readers as Interactions Input <i>Maxime Louvel and Francois Pacull</i>	91
Combinational Optoelectronic Circuit Based on SiC Technology <i>Manuel Augusto Vieira, Manuela Vieira, Paula Louro, Victor Silva, and Alessandro Fantoni</i>	97
Detection of Hydrocarbon Oil in Seawater by Light Absorption Analysis <i>Sangwoo Oh and Moonjin Lee</i>	103
Fiber-Coupled Microcavity Probe for in Vivo Near-Field Sensing <i>Zachary Ballard, Nichaluk Leartprapun, and Jimmy Xu</i>	107
Development of Shear Horizontal Surface Acoustic Wave Sensor for Detecting Methanol Concentrations in a Direct Methanol Fuel Cell <i>Jun Kondoh, Takuya Nozawa, and Saburo Endo</i>	112
Fungicide Residue Identification and Discrimination Using a Conducting Polymer Electronic-nose <i>Alphus Wilson</i>	116
Metal-Insulator-Metal Gas Sensor Based on Polarizable Thin Films <i>Martin Schreivogel, Denis Kunz, Ralf-Roman Rosenberger, Wolfgang Menesklou, and Ellen Ivers-Tiffée</i>	122
Sensitivity Comparison between Surface Acoustic Wave and Lamb Acoustic Wave Hydrogen Gas Sensors <i>Assane Ndieguene, Issam Kerroum, Frederic Domingue, and Alexandre Reinhardt</i>	128
Theoretical Investigation of an Ultrasonic Array Transmitter with Anisotropic Directivity <i>Sahdev Kumar, Kentaro Ichi, and Hideo Furuhashi</i>	131
Intelligent Monitoring of Subjects with Severe Disorder of Consciousness <i>Luigi Flotta, Francesco Riganello, and Walter G Sannita</i>	135

