Motion vectors, extracted by linking corresponding feature points, in image sequences from a wireless capsule endoscope as it travels through the small intestine (see page 2671).
SPECIAL ISSUE ON ADVANCING STANDARDS FOR SMART TRANSDUCER INTERFACES

Guest Editorial ...................................................................................................................... R. Morello, C. De Capua, A. Lay-Ekuakille, K. Lee, O. Postolache, W. J. Miller, S. Urooj, and J. Wu 2449

SPECIAL ISSUE PAPERS
A Low-Cost Configurable ISO/IEC/IEEE 21451-7-Compatible Sensor Tag ................................................. J. Wang, L. Fu, H. Han, H. Min, and K. B. Lee 2451
A Prototypal Architecture of a IEEE 21451 Network for Smart Grid Applications Based on Power Line Communications ................................................................................................................. A. Cataliotti, G. Cipriani, V. Cosentino, D. Di Cara, V. Di Dio, S. Guaiana, N. Panzavecchia, and G. Tinè 2460
Smart Transducer Interface—From Networked On-Site Optimization of Energy Balance in Research-Demonstrative Office Building to Smart City Conception .............................................................................. I. Jabłoński 2468
A Comparison Between Sensor Signal Preprocessing Techniques ............................................................................ F. Abate, V. K. L. Huang, G. Monte, V. Paciello, and A. Pietrosanto 2479
Use of TEDS to Improve Performances of Smart Biomedical Sensors and Instrumentation “An Overview on Advances and Applications of ISO/IEC/IEEE 21451 Standard” ................................................................. R. Morello 2497
Current Status of the IEEE 1451 Standard-Based Sensor Applications ................................................................. A. Kumar, V. Srivastava, M. K. Singh, and G. P. Hancke 2505
A Smart Sensor Network for Sea Water Quality Monitoring ..................................................................................... F. Adamo, F. Attivissimo, C. G. C. Carducci, and A. M. L. Lanzolla 2514
Using Algorithms on Smart Transducer: An IEEE Standard Perspective ............................................................... Z. Liu, F. Banakhr, G. Monte, and V. Huang 2523
A Reduced Reference Distortion Measure for Performance Improvement of Smart Cameras ........................................ V. Bhateja, A. Kalsi, A. Srivastava, and A. Lay-Ekuakille 2531

(Contents Continued on Page 2442)
SENSORS PAPERS

Smart Diary: A Smartphone-Based Framework for Sensing, Inferring, and Logging Users’ Daily Life

Selective Detection of Hg(II) Over Cd(II) and Pb(II) Ions by DNA Functionalized CNT

Gold Nanoparticles-Modified Screen-Printed Electrode for Determination of Pb(II) Ion Using Linear Sweep Anodic Stripping Voltammetry

PMI-Based Nonlinear $H_{\infty}$ Estimation of Unknown Sensor Error for INS/GPS Integrated System

Fabrication of New Mid-Infrared Photodetectors Based on Graphene Modified by Organic Molecules

An Encryption Scheme Using Chaotic Map and Genetic Operations for Wireless Sensor Networks

Temperature Sensor Based on Quantum Dots Solution Encapsulated in Photonic Crystal Fiber

Adaptive Interface for Personalized Center of Mass Self-Identification in Home Rehabilitation

Multifocus Image Fusion Based on NSCT and Focused Area Detection

High Sensitivity Polyvinylidene Fluoride Microphone Based on Area Ratio Amplification and Minimal Capacitance

Theoretical and Experimental Investigation of an Intensity-Demodulated Fiber-Ring-Laser Ultrasonic Sensor System

Ultrasonic Sensor Triangulation for Accurate 3D Relative Positioning of Humanoid Robot Feet

Abnormal Scene Change Detection From a Moving Camera Using Bags of Patches and Spider-Web Map

CuO Nanoparticles Intermixed With Chemically Modified Multiwalled Carbon Nanotubes as a Novel Electrode for Cu$^{2+}$ Ion Determination

An Optical Fiber Fabry–Perot Interferometer Sensor for Simultaneous Measurement of Relative Humidity and Temperature

Refractive Index Sensing Based on a Side-Polished Macrobending Plastic Optical Fiber

Side-Hole Plastic Optical Fiber for Testing Liquid’s Refractive Index

SmartPDR: Smartphone-Based Pedestrian Dead Reckoning for Indoor Localization

Tube Glass Waveguides Modified With Gold Nanoparticles for Application as a Simple Chemical and Biological Sensor

A Fully Integrated Analog Compensation for the Piezo-Hall Effect in a CMOS Single-Chip Hall Sensor Microsystem

Improving the Performance of Wireless Sensor Networks Through Optimized Complex Field Network Coding

Electric-Field Assisted Desorption of Water Molecules in DNA Functionalized CNT Network

EMPi-Based Ultrasonic Sensory Array for 3D Localization of Reflectors Using Positioning Algorithms

Modified Carbon Paste Electrode for Pb$^{2+}$ Ion Determination: Response Surface Methodology

(Contents Continued on Page 2444)
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resonator- and Filter-Induced Slow Waves for High-Sensitivity RF Interferometer Operations</td>
<td>Z. Chen, Y. Shao, and P. Wang</td>
<td>2993</td>
</tr>
<tr>
<td>In-Situ Monitoring Method for Solution Volatilization Using Tilted Fiber Bragg Grating</td>
<td>B. Jiang, X. Lu, D. Mao, W. Zhang, and J. Zhao</td>
<td>3000</td>
</tr>
<tr>
<td>Fabrication and Characterization of Long-Period Gratings in Hollow Core Fibers by Electric Arc Discharge</td>
<td>A. Iadicicco, R. Ranjan, and S. Campopiano</td>
<td>3014</td>
</tr>
<tr>
<td>A Miniature Two-Plate Electrical Capacitance Tomography Sensor</td>
<td>Z. Ren and W. Yang</td>
<td>3037</td>
</tr>
<tr>
<td>Urban Objects Classification With an Experimental Acoustic Sensor Network</td>
<td>T. H. de Groot, E. Woudenberg, and A. G. Yarovoy</td>
<td>3068</td>
</tr>
<tr>
<td>Multicast for 6LoWPAN Wireless Sensor Networks</td>
<td>X. Wang</td>
<td>3076</td>
</tr>
</tbody>
</table>

About the Cover: “Motion vectors, extracted by linking corresponding feature points, in image sequences from a wireless capsule endoscope as it travels through the small intestine.” For more information see “Hybrid Localization of Microrobotic Endoscopic Capsule Inside Small Intestine by Data Fusion of Vision and RF Sensors,” by Bao et al., which begins on p. 2669.