

IEEE

SENSORS JOURNAL

A PUBLICATION OF THE IEEE SENSORS COUNCIL

WWW.IEEE.ORG/SENSORS

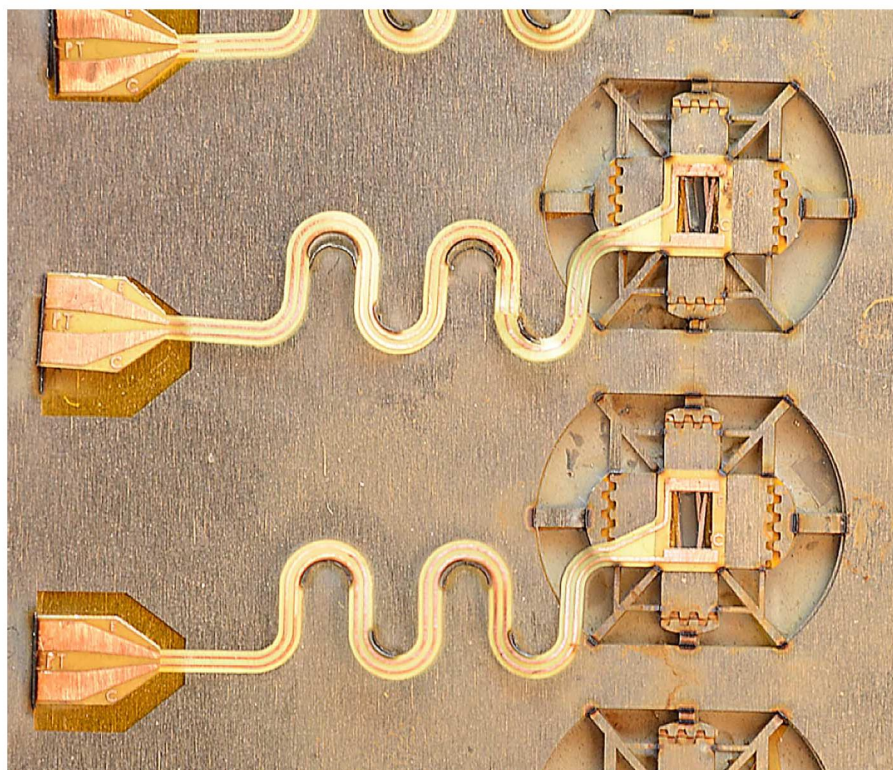
NOVEMBER 1, 2016

VOLUME 16

NUMBER 21

ISJEAZ

(ISSN 1558-1748)



Batch fabricated mm-scale force sensors, suitable for surgical robots, prior to release and self-assembly into the final 3D shape.

IEEE

SENSORS JOURNAL

A PUBLICATION OF THE IEEE SENSORS COUNCIL

WWW.IEEE.ORG/SENSORS

NOVEMBER 1, 2016

VOLUME 16

NUMBER 21

ISJEAZ

(ISSN 1558-1748)

SENSORS LETTERS

Optoelectronic/Photonic Sensors

Camera-Vision-Based Water Level Estimation *H. Sakaino* 7564

Sensor Signal Processing and Array Sensor Fusion

Multi-Microphone Target Signal Enhancement Using Generalized Sidelobe Canceller Controlled by Phase Error Filter *S. M. Kim and H. K. Kim* 7566

SENSORS PAPERS

Chemical and Biological Sensors

Self-Reference Surface Plasmon Resonance Biosensor Based on Multiple-Beam Interference *S. Chen, Y. Liu, Q. Liu, Z. Liu, and W. Peng* 7568

Rare Cell Immobilization on MEMS Scale Sensors Using Micro-Electromagnets *R. W. R. L. Gajasinghe, A. Toprak, S. U. Senveli, Y. A. Yildirim, M. Jones, T. Ince, and O. Tigli* 7572

Sensor Materials and Solid-State Sensors

Performance Improvement of Nitrogen Oxide Gas Sensors Using Au Catalytic Metal on SnO₂/WO₃ Complex Nanoparticle Sensing Layer *C.-T. Lee, H.-Y. Lee, and Y.-S. Chiu* 7581

Improvement in the Sensing Response of Nano-Crystalline ZnO-Based Hydrogen Sensor: Effect of Swift Heavy Ion Irradiation *S. Ranwa, M. Kumar, P. K. Kulriya, M. Fanetti, M. Valant, and M. Kumar* 7586

SWCNT-Pt-P₂O₅-Based Sensor for Humidity Measurements *E. I. Ionete, S.-I. Spiridon, B. F. Monea, D. Ebrasu-Ion, and A. Vaseashta* 7593

Mechanical Sensors

Personal Dead Reckoning Using IMU Mounted on Upper Torso and Inverted Pendulum Model *T.-N. Do, R. Liu, C. Yuen, M. Zhang, and U.-X. Tan* 7600

A Differential Pressure Wave-Based Sensor Setup for the Acoustic Viscosity of Liquids *H. Antlinger, S. Clara, R. Beigelbeck, S. Cerimovic, F. Keplinger, and B. Jakoby* 7609

Mass-Sensitive Devices

Inkjet-Printed Graphene Oxide Thin Layers on Love Wave Devices for Humidity and Vapor Detection *I. Nikolaou, H. Hallil, V. Conédéra, G. Deligeorgis, C. Dejous, and D. Rebiere* 7620

Microwave/Millimeter Wave Sensors

A Microfluidic-Integrated SIW Lab-on-Substrate Sensor for Microliter Liquid Characterization *E. Silavwe, N. Somjit, and I. D. Robertson* 7628

Low Cost and Pipe Conformable Microwave-Based Water-Cut Sensor *M. A. Karimi, M. Arsalan, and A. Shamim* 7636

Parametric Sparse Representation Method for Motion Parameter Estimation of Ground Moving Target *F.-F. Gu, Q. Zhang, Y.-C. Chen, W.-J. Huo, and J.-C. Ni* 7646

(Contents Continued on Page 7563)

<i>Optoelectronic/Photonic Sensors</i>	
Research on Target Information Fusion Identification Algorithm in Multi-Sky-Screen Measurement System <i>H. Li</i>	7653
Magnetic Field and Temperature Sensing Based on a Macro-Bending Fiber Structure and an FBG	
..... <i>Y. Chen, Q. Han, W. Yan, Y. Yao, and T. Liu</i>	7659
Markers Detection in Transformer Oil by Plasmonic Chemical Sensor System Based on POF and MIPs	
..... <i>N. Cennamo, L. De Maria, C. Chemelli, A. Profumo, L. Zeni, and M. Pesavento</i>	7663
<i>Integrated Optics/Fiber Optical Devices</i>	
A Novel Technique Employing Tapered Fiber Bragg Grating to Solve the Axial/Transverse Forces Crosstalk in Microsurgical Instruments	<i>A. A. G. Abushagur, A. A. A. Bakar, M. S. Dzulkefly Bin Zan, and N. Arsad</i> 7671
High Stability Fiber-Optics Sensors With an Improved PGC Demodulation Algorithm	<i>A. Zhang and S. Zhang</i> 7681
<i>Sensor-Actuators</i>	
Automated Resonance Matching for CMOS MEMS Micro-Resonators <i>Y.-K. Liao, C.-H. Chiang, and M. S.-C. Lu</i>	7685
<i>Sensor Signal Processing and Array Sensor Fusion</i>	
Multi-Target Video Tracking Based on Improved Data Association and Mixed Kalman/ H_∞ Filtering	
..... <i>H. Wang and S. K. Nguang</i>	7693
Identification of NR and EPDM Samples by Means of Thermogravimetric Analysis and Multivariate Methods	
..... <i>J.-R. Riba Ruiz, T. Canals Parelló, and R. Cantero Gómez</i>	7705
An Effective Frequency-Spatial Filter Method to Restrain the Interferences for Active Sensors Gain and Phase Errors Calibration	<i>J. Jia-Jia, W. Xian-Quan, and D. Fa-Jie</i> 7713
Design and Implementation of Practical Step Detection Algorithm for Wrist-Worn Devices	
..... <i>Y. Cho, H. Cho, and C.-M. Kyung</i>	7720
<i>Sensor Systems</i>	
Inexpensive Multimodal Sensor Fusion System for Autonomous Data Acquisition of Road Surface Conditions	<i>Y. L. Chen, M. R. Jahanshahi, P. Manjunatha, W. Gan, M. Abdelbarr, S. F. Masri, B. Becerik-Gerber, and J. P. Caffrey</i> 7731
Multi-Point Single-Antenna Sensing Enabled by Wireless Nested Split-Ring Resonator Sensors	
..... <i>B. Ozbey, V. B. Ertürk, O. Kurc, A. Altintas, and H. V. Demir</i>	7744
<i>Applications</i>	
Natural Gesture Modeling and Recognition Approach Based on Joint Movements and Arm Orientations	
..... <i>Y. Wu, K. Chen, and C. Fu</i>	7753
Improved Pedestrian Dead-Reckoning-Based Indoor Positioning by RSSI-Based Heading Correction	
..... <i>L. L. Shen and W. W. S. Hui</i>	7762
A 4-DOF MEMS Energy Harvester Using Ultrasonic Excitation	<i>A. G. Fowler and S. O. R. Moheimani</i> 7774
Channel State Reconstruction Using Multilevel Discrete Wavelet Transform for Improved Fingerprinting-Based Indoor Localization	<i>S.-H. Fang, W.-H. Chang, Y. Tsao H.-C. Shih, and C. Wang</i> 7784
<i>Sensors System Networks</i>	
Energy Aware and Adaptive Cross-Layer Scheme for Video Transmission Over Wireless Sensor Networks	
..... <i>M. E. E. D. Abd El Kader, A. A. A. Youssif, and A. Z. Ghalwash</i>	7792
Hybrid Cooperative Vehicle Positioning Using Distributed Randomized Sigma Point Belief Propagation on Non-Gaussian Noise Distribution	<i>H. M. Georges, Z. Xiao, and D. Wang</i> 7803
