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A3L-A: Optical Sensors I

Room 101A

Session Chairs: Paddy French, (TU Delft, the Netherlands), Hsiao-Wen Zan (National Chiao Tung University, Taiwan)

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Wednesday, October 31

8:00 AM - 8:45 AM
C0L-A: Plenary: Biomimetic Hair Sensors
Room 101A
Session Chairs: Reza Ghodssi, (University of Maryland, College Park)

Biomimetic Hair Sensors: Utilizing the Third Dimension 1440
Khalil Najafi (University of Michigan, United States)

8:50 AM - 10:20 AM
C1L-A: Phenomena and Modeling II
Room 101A
Session Chairs: Hans JFL Goosen, (Delft University of Technology, the Netherlands), Guo-Ming Sung (National Taipei University of Technology, Taiwan)

Thermo-Fluid Dynamic Time-of-Flight Flow Sensor System 1444
O. Ecin (University Duisburg-Essen, Germany)
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B.J. Hosticka (University Duisburg-Essen, Germany)
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Self-Sustained Micromechanical Resonant Pressure Sensors 1456
Xiaobo Guo (University of Denver, United States)
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Session Chairs: Anna Grazia Mignani, (CNR IFAC, Italy), I-Yu Huang (National Sun-Yet-Sen University, Taiwan)	
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C1L-C: CMOS Light / Image Sensors

Room 102

Session Chairs: Elfed Lewis, (Univ. of Limerick, Ireland), Hao-Chiao Hong (National Chiao Tung University, Taiwan)

Dual-Layer Metal-Grid Polarizer for Polarization Image Sensor in 65-nm CMOS Technology 1493

Kiyotaka Sasagawa (Nara Institute of Science and Technology, Japan)
Norimitsu Wakama (Nara Institute of Science and Technology, Japan)
Daisuke Okabayashi (Nara Institute of Science and Technology, Japan)
Toshihiko Noda (Nara Institute of Science and Technology, Japan)
Takashi Tokuda (Nara Institute of Science and Technology, Japan)
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Jui-Hsin Chang (National Tsing Hua University, Taiwan)
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Hann-Huei Tsai (National Applied Research Laboratories, Taiwan)
Chin-Fong Chiu (National Applied Research Laboratories, Taiwan)

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G. Napoletano (Università degli studi di Modena e Reggio Emilia, Italy)
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L. Larcher (Università degli studi di Modena e Reggio Emilia, Italy)
P. Pavan (Università degli studi di Modena e Reggio Emilia, Italy)

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Brett Leida (Schneider Electric, United States)	
Tim Ren (Schneider Electric, United States)	
Phil London (Schneider Electric, United States)	
Ashley Turza (Massachusetts Institute of Technology, United States)	
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Miodrag Potkonjak (University of California, Los Angeles, United States)	
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J. Alvarez (University of València, Spain)
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Songsong Zhang (National University of Singapore, Singapore)
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Carlos Rossa (CEA, LIST, Sensorial and Ambient Interfaces Laboratory, France)	
José Lozada (CEA, LIST, Sensorial and Ambient Interfaces Laboratory, France)	
Alain Micaelli (CEA, LIST, Sensorial and Ambient Interfaces Laboratory, France)	
A New Approach of Double-Level Grid-Based Target Localization in Wireless Sensor Networks	1802
Daifei Wang (National University of Defense Technology, China)	
Guoming Tang (National University of Defense Technology, China)	
Yi Xie (National University of Defense Technology, China)	
Weidong Xiao (National University of Defense Technology, China)	
Zang Yuan (National University of Defense Technology, China)	
Wei Zhang (National University of Defense Technology, China)	

Fine Patterning of Electrets for Sensors and Energy Harvesters	1806
Vladimir Leonov (Imec, Belgium)	
Martijn Goedbloed (Holst Centre / IMEC, Netherlands)	
Christine de Nooijer (Holst Centre / IMEC, Netherlands)	
Rob van Schaijk (Holst Centre / IMEC, Netherlands)	
A Low Voltage CMOS-Based Capacitive Micromachined Ultrasonic Sensors Development	1810
Y.-S. Tien (National Taiwan University, Taiwan)	
P.-C. Ku (National Taiwan University, Taiwan)	
F.-Y. Lin (National Taiwan University, Taiwan)	
P.-C. Li (National Taiwan University, Taiwan)	
L.-H. Lu (National Taiwan University, Taiwan)	
P.-L. Kuo (National Taiwan University, Taiwan)	
W.-C. Tian (National Taiwan University, Taiwan)	
MEMS Heterodyne AMF Detection with Capacitive Sensing	1814
Michael Stifter (Austrian Academy of Sciences, Austria)	
Thilo Sauter (Austrian Academy of Sciences, Austria)	
Wilfried Hortschitz (Austrian Academy of Sciences, Austria)	
Franz Keplinger (Vienna University of Technology, Austria)	
Harald Steiner (Vienna University of Technology, Austria)	
R.E.S.T. - a Flexible, Semi-Passive Platform for Developing RFID Technologies	1818
Christopher R. Valenta (Georgia Institute of Technology, United States)	
Gregory D. Durgin (Georgia Institute of Technology, United States)	
Reconfigurable Integrated Wide-Dynamic-Range Read-Out Circuit for MOX Gas-Sensor Grids Providing Local Temperature Regulation	1822
F. Conso (University of Pavia, Italy)	
M. Grassi (University of Pavia, Italy)	
P. Malcovati (University of Pavia, Italy)	
A. Baschiroto (University of Milano-Bicocca, Italy)	
Bulk-Si with Poly Bump Process Scheme for MEMS Sensors	1826
Chun-Wen Cheng (Taiwan Semiconductor Manufacturing Company Ltd. / National Tsing Hua University, Taiwan)	
Kai-Chih Liang (Taiwan Semiconductor Manufacturing Company Ltd. / National Tsing Hua University, Taiwan)	
Chia-Hua Chu (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Te-Hao Lee (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Jiou-Kang Lee (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Chung-Hsien Lin (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Hsiao Chin Tuan (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Alex Kalnitsky (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Weileun Fang (National Tsing Hua University, Taiwan)	
David A Horsley (University of California, Davis, United States)	
Dynamic Bounded-Error Data Compression and Aggregation in Wireless Sensor Network	1830
Yu-Hao Chen (National Taiwan University, Taiwan)	
Niang-Ying Huang (National Taiwan University, Taiwan)	
Yu-Hsien Chu (National Taiwan University, Taiwan)	
Meng-Han Li (National Taiwan University, Taiwan)	
Ray-I Chang (National Taiwan University, Taiwan)	
Chia-Hui Wang (Ming Chuan University, Taiwan)	

Miniaturized Cortex Cooling Device and System for Hypothermia Therapy Application on Freely Moving Rat	1834
Chih-Wei Chang (National Chiao Tung University, Taiwan)	
Kuan-Chou Hou (National Chiao Tung University, Taiwan)	
Lei-Chun Chou (National Chiao Tung University, Taiwan)	
Jin-Chern Chiou (National Chiao Tung University and China Medical University, Taiwan)	
Jeng-Ren Duann (China Medical University, Taiwan)	
Yun-Wen Tsai (National Cheng Kung University, Taiwan)	
AFM Cantilever with Integrated Piezoelectric Thin Film for Micro-Actuation	1838
Leema Rose Viannie (Indian Institute of Science, India)	
Sudeep Joshi (Indian Institute of Science, India)	
G.R. Jayanth (Indian Institute of Science, India)	
K. Rajanna (Indian Institute of Science, India)	
V. Radhakrishna (Space and Astronomy Group, ISRO Satellite Centre, India)	
2.4 GHz IEEE 802.15.4 Channel Interference Classification Algorithm Running Live on a Sensor Node	1842
Sven Zacharias (University of Limerick, Ireland)	
Thomas Newe (University of Limerick, Ireland)	
Sinead O'Keefe (University of Limerick, Ireland)	
Elfed Lewis (University of Limerick, Ireland)	
Environmental Control System for Spinal Cord Injured	1846
Haruo Nakashima (Nagasaki University, Japan)	
Masatomo Shibata (Nagasaki University, Japan)	
Motohiro Tanaka (Nagasaki University, Japan)	
Shunji Moromugi (Nagasaki University, Japan)	
Takakazu Ishimatsu (Nagasaki University, Japan)	
Energy Analysis of Industrial Sensors in Novel Wireless SHM Systems	1850
David Boyle (University College Cork, Ireland)	
Bruno Srbinovski (University College Cork, Ireland)	
Emanuel Popovici (University College Cork, Ireland)	
Brendan O'Flynn (University College Cork, Ireland)	
Bluetooth Low Energy (BLE) Based Wireless Sensors	1854
Elke Mackensen (University of Applied Sciences Offenburg, Germany)	
Matthias Lai (University of Applied Sciences Offenburg, Germany)	
Thomas M. Wendt (NewTec GmbH System-Entwicklung und Beratung, Germany)	
A Simple Time Shift Scheme for Beacon Broadcasting Based on Cluster-Tree IEEE 802.15.4 Low-Rate WPANs	N/A
Chi-Ming Wong (Jinwen University of Science and Technology, Taiwan)	
Ming-Hua Chang (Jinwen University of Science and Technology, Taiwan)	
ADHOP: an Energy Aware Routing Algorithm for Mobile Wireless Sensor Networks	N/A
Alexandre Massayuki Okazaki (Federal University of Santa Catarina, Brazil)	
Antônio Augusto Fröhlich (Federal University of Santa Catarina, Brazil)	
Flexible Phynox Alloy with Integrated Piezoelectric Thin Film for Micro Actuation Application	1866
Sudeep Joshi (Indian Institute of Science, India)	
M.M. Nayak (Indian Institute of Science, India)	
K. Rajanna (Indian Institute of Science, India)	
A Novel Piezoelectric ZnO Nanogenerator on Flexible Metal Alloy Substrate	1870
Venkateswarlu Gaddam (Indian Institute of Science, India)	
Sudeep Joshi (Indian Institute of Science, India)	
Mitesh Parmar (Indian Institute of Science, India)	
K. Rajanna (Indian Institute of Science, India)	
M.M. Nayak (Indian Institute of Science, India)	

Energy Harvesting by Rotation of Wheel for Tire Monitoring System	1874
Kyoung Il Lee (Korea Electronics Technology Institute, Korea)	
Byung Jik Lim (Korea Electronics Technology Institute, Korea)	
Seong Hyun Kim (Korea Electronics Technology Institute, Korea)	
Yongtaek Hong (Seoul National University, Korea)	
Energy Harvesting Derived from Magnetization Reversal in FeCoV Wire	1878
Ryohei Serizawa (Yokohama National University, Japan)	
Tsutomu Yamada (Yokohama National University, Japan)	
Sumio Masuda (Yokohama National University, Japan)	
Susumu Abe (Kanagawa University, Japan)	
Shiro Kohno (Nikkoshi Co., Ltd, Japan)	
Fumio Kaneko (Nikkoshi Co., Ltd, Japan)	
Yasushi Takemura (Yokohama National University, Japan)	
Power Density Improvement of a Piezoelectric Energy Harvester Through Use of a Micropower Switch-Mode Interface	1882
A.D.T. Elliott (Imperial College London, United Kingdom)	
P.D. Mitcheson (Imperial College London, United Kingdom)	
Integrated Multi-Sensor Circuit for Environmental Data Tracing in Safe Food Storage and Delivery: the Sliced Emmental Cheese Case Study	1886
M. Grassi (University of Pavia, Italy)	
L. Picolli (University of Pavia, Italy)	
F. Conso (University of Pavia, Italy)	
P. Malcovati (University of Pavia, Italy)	
G. F. Regnicoli (University of Perugia, Italy)	
G. Perretti (University of Perugia, Italy)	
Low-Cost Sensor Tape for Environmental Sensing Based on Roll-to-Roll Manufacturing Process	1890
Nan-Wei Gong (MIT Media Lab, United States)	
Chiu-Yen Wang (National Tsing Hua University, Taiwan)	
Joseph A. Paradiso (MIT Media Lab, United States)	
Minimize Distortion in Free-Standing Sensor Plates Using Electroformed Reinforced Beam	1894
Pooneh Shooshtari (Simon Fraser University, Canada)	
Kourosh Khosraviani (Simon Fraser University, Canada)	
John Jones (Simon Fraser University, Canada)	
Albert Leung (Simon Fraser University, Canada)	
A Mobile, Non-Intrusive, Cardiac Monitor for Patient Post-Operative Care Management	N/A
Paul Fortier (University of Massachusetts Dartmouth, United States)	
Benjamin Viall (University of Massachusetts Dartmouth, United States)	
Steven Shannon (University of Massachusetts Dartmouth, United States)	
Patrick Dasilva (University of Massachusetts Dartmouth, United States)	
Alexander Ekholm (University of Massachusetts Dartmouth, United States)	
Modeling and Measurement of Dielectrophoretic Force and 2-D Trajectories of Microspheres in Quadrupole Electrode Configuration	1900
Negar Moghimi (Lehigh University, United States)	
D. Richard Decker (Lehigh University, United States)	
Svetlana Tatic-Lucic (Lehigh University, United States)	
Study of CIGS Photovoltaic Processing with Femtosecond Laser Pulses at IR Wavelength	1904
Jong-Zen Huang (Huafan University, Taiwan)	
Ting-Kai Tsai (Huafan University, Taiwan)	
Chih-Wei Hsieh (Industrial Technology Research Institute, Taiwan)	

A CMOS Monolithic Digitized Light Transducer with Calibration Circuits for Ambient Light Sensor Applications	1908
Cheng-Ta Chiang (National Chia Yi University, Taiwan)	
A High C-Axial ZnO Thin-Film for Piezoelectric Sensor Application	1912
I-Yu Huang (National Sun Yat-Sen University, Taiwan)	
Je-Wei Lan (National Sun Yat-Sen University, Taiwan)	
Chang-Yu Lin (National Sun Yat-Sen University, Taiwan)	
Growth of Electrodeposited ZnO Nanowires	1916
Joshua Sunday (University of Maryland Baltimore County, United States)	
Kweku Amoah (University of Maryland Baltimore County, United States)	
Gymama Slaughter (University of Maryland Baltimore County, United States)	
The Design and the Cloud Application of Plantar Pressure Sensor Combined with Bluetooth 4.0.....	N/A
Jung-Tang Huang (National Taipei University of Technology, Taiwan)	
Sheng-Bin Chen (National Taipei University of Technology, Taiwan)	
Chia-Hsiang Lee (National Taipei University of Technology, Taiwan)	
Insulation Fault Detection Circuit for Ungrounded DC Power Supply Systems	1923
Yow-Chyi Liu (Kao Yuan University, Taiwan)	
Chen-You Lin (Kao Yuan University, Taiwan)	
On the Trade-Off of Power Consumption and Time Synchronization Quality in Wireless Sensor Networks	1927
Pablo Briff (University of Buenos Aires, Argentina)	
Ariel Lutenberg (University of Buenos Aires, Argentina)	
Leonardo Rey Vega (University of Buenos Aires, Argentina)	
Fabian Vargas (Catholic University, Brazil)	
Fabrication of Through-Silicon-Via (TSV) for Ultra-High Vacuum Atom-Optics Cell.....	1931
Ho-Chiao Chuang (National Taipei University of Technology, Taiwan)	
Hsiang-Fu Li (National Taipei University of Technology, Taiwan)	
Yun-Siang Lin (National Taipei University of Technology, Taiwan)	
Yu-Hsin Lin (National Applied Research Laboratories, Taiwan)	
A Novel Fully Printed and Flexible Capacitive Pressure Sensor	1935
B. B. Narakathu (Western Michigan University, United States)	
A. Eshkeiti (Western Michigan University, United States)	
A. S. G. Reddy (Western Michigan University, United States)	
M. Rebros (Western Michigan University, United States)	
E. Rebrosova (Western Michigan University, United States)	
M. K. Joyce (Western Michigan University, United States)	
B. J. Bazuin (Western Michigan University, United States)	
M. Z. Atashbar (Western Michigan University, United States)	
A Novel Low Pressure Sensor with Fin-Structures	1939
Kai-Chih Liang (Taiwan Semiconductor Manufacturing Company Ltd. / National Tsing Hua University, Taiwan)	
Chun-Wen Cheng (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Chung-Hsien Lin (Taiwan Semiconductor Manufacturing Company Ltd., Taiwan)	
Weileun Fang (National Tsing Hua University, Taiwan)	
Consideration of Photonic and Mass-Transfer Aspects on the Performance of a Biosensor Based on Localized Surface Plasmons on an Array of Gold Cylinders	1943
Barbora Spacková (Institute of Photonics and Electronics, Czech Republic)	
N. Scott Lynn Jr. (Institute of Photonics and Electronics, Czech Republic)	
Jiri Homola (Institute of Photonics and Electronics, Czech Republic)	
Pavel Kwiecien (Czech Technical University in Prague, Czech Republic)	
Ivan Richter (Czech Technical University in Prague, Czech Republic)	

Direct Detection of Salmonella Typhimurium on Fresh Spinach Leaves Using Phage-Based Magnetoelastic Biosensors	1947
Shin Horikawa (Auburn University, United States)	
Suiqiong Li (Auburn University, United States)	
Yating Chai (Auburn University, United States)	
Bryan A. Chin (Auburn University, United States)	
A Novel Magnetic-Induced Capacitive-Sensing Rotation Sensor	1951
Fu-Ming Hsu (National Tsing Hua University, Taiwan)	
Wen-Chien Chen (National Tsing Hua University, Taiwan)	
Ching-Chen Tu (Touch Micro-System Technology Corp, Taiwan)	
Ching-Han Huang (Touch Micro-System Technology Corp, Taiwan)	
Weileun Fang (National Tsing Hua University and Touch Micro-System Technology Corp, Taiwan)	
Wafer Level Vacuum Packaged Resonator with in-situ Au-Al Eutectic Re-Distribution Layer	1955
Guoqiang Wu (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China)	
Dehui Xu (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China)	
Bin Xiong (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China)	
Errong Jing (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China)	
Yuelin Wang (Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China)	
RFID-Based Thermal Convection Accelerometer	1959
Jium-Ming Lin (Chung-Hua University, Taiwan)	
Chia-Hsien Lin (Chung-Hua University, Taiwan)	
Sensor Response Time Evaluations of Trace Hydrogen Gaseous Species with Platinum Using Kelvin Probe	1963
G. Eranna (Central Electronics Engineering Research Institute, India)	
R. Paris (Technical University, Germany)	
T. Doll (University of Mainz, Germany)	
A Smart Sensor for the Condition Monitoring of Industrial Rotating Machinery	1967
Francisco J. A. Cardoso (Eneida, SA and University of Coimbra , Portugal)	
Sérgio P. S. Faria (Eneida, SA, Portugal)	
José E. G. Oliveira (Eneida, SA and University of Coimbra, Portugal)	
On the Relationship Between cumulative Movement, Clinical Scores and Clinical Outcomes	1971
Michael Walsh (Tyndall National Institute, Ireland)	
John Barton (Tyndall National Institute, Ireland)	
Brendan O'Flynn (Tyndall National Institute, Ireland)	
Cian O'Mathuna (Tyndall National Institute, Ireland)	
Anne Hickey (Mid-Western Regional Hospital, Ireland)	
John Kellett (Mid-Western Regional Hospital, Ireland)	
Colorimetric Oxygen Imaging and Quantification with Easily Accessible Optical Devices	1975
Satya Achanta (Missouri University of Science and Technology, United States)	
Sanghan Park (Missouri University of Science and Technology, United States)	
Chang-Soo Kim (Missouri University of Science and Technology, United States)	
A Comparison of IR Stereo Vision and Lidar for Use in Fire Environments	1979
Joseph W. Starr (Virginia Tech, United States)	
B. Y. Lattimer (Virginia Tech, United States)	
Ultra-Fast and High Resolution NEMS Thermal Detector Based on a Nano-Air-Gap Piezoelectric Resonant Structure	1983
Yu Hui (Northeastern University, United States)	
Matteo Rinaldi (Northeastern University, United States)	

A 69 μ W CMOS Smart Temperature Sensor with an Inaccuracy of $\pm 0.8^\circ\text{C}$ (3 Sigma) from -50°C to 150°C 1987

Shen-Cheng Lee (National Chiao Tung University, Taiwan)

Herming Chiueh (National Chiao Tung University, Taiwan)

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C3L-A: Gas Sensors II

Room 101A

Session Chairs: Yong Xu, (Wayne State University, USA), Golla Eranna (Central Electronics Eng. Res. Inst. (CEERI), India)

Novel Approach to Sense Oxygen in Solution Using Short Measurement Times 1991

F. van Rossem (University of Twente, Netherlands)

T. Kamperman (University of Twente, Netherlands)

J. G. Bomer (University of Twente, Netherlands)

A. van Den Berg (University of Twente, Netherlands)

S. Le Gac (University of Twente, Netherlands)

M. Boiani (Max-Planck Institute for Molecular Biology, Germany)

{1}; {2}(University of Twente, Netherlands)

MEMS Resonant Human Breath Sensors for Survivor Detection in Disaster Areas 1995

Arash Hajjam (University of Denver, United States)

Yedan Guo (University of Denver, United States)

Kristine Dietrich (University of Denver, United States)

Siavash Pourkamali (University of Denver, United States)

Pulsed Operation of InGaZnO TFTs for VOC Sensing Applications..... 1999

Spyridon Pavlidis (Georgia Institute of Technology, United States)

Jin-Jyh Su (Georgia Institute of Technology, United States)

Luke A. Beardslee (Georgia Institute of Technology, United States)

Oliver Brand (Georgia Institute of Technology, United States)

Joshua A. Hagen (Air Force Research Labs, United States)

Nancy Kelley-Loughnane (Air Force Research Labs, United States)

Paul Leclair (Universite Lille, France)

Application of Ionic Liquid Doped Ionomers for Organic Vapor Sensing..... 2003

Hwall Min (Pennsylvania State University, United States)

Gokhan Hatipoglu (Pennsylvania State University, United States)

Srinivas Tadigadapa (Pennsylvania State University, United States)

Dean M. Tigelaar (Ohio Space Institute and NASA Glenn Research Center, United States)

Semipacked Separation Columns with Monolayer Protected Gold Stationary Phases for Microgas

Chromatography 2007

Hamza Shakeel (Virginia Tech, United States)

Masoud Agah (Virginia Tech, United States)

Improvement of Odor Approximation Using Mass Spectrometry..... 2011

Yasunori Nihei (Tokyo Institute of Technology, Japan)

Takamichi Nakamoto (Tokyo Institute of Technology, Japan)

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C3L-B: Sensing of Bacteria and Cells

Room 101B

Session Chairs: Michael Vellekoop, (University of Bremen, Germany), Anpan Han (University of Aarhus, Denmark)

Determination of Cell Concentration in 3D Cell Culture Construct Based on Electrical Impedance Measurement by on-Chip Vertical Electrodes..... 2015

Kin Fong Lei (Chang Gung University, Taiwan)
Che-Wei Hsu (Chang Gung University, Taiwan)
Shing-I Yang (Chang Gung University, Taiwan)
Cheng-Yuan Lin (Chang Gung University, Taiwan)
Min-Hsien Wu (Chang Gung University, Taiwan)

Miniaturized on-Sensor Fluorescence Flow Cytometer..... 2019

Askshaya Shanmugam (University of Massachusetts, United States)
Christopher Salthouse (University of Massachusetts, United States)

CMOS Chip for Electrochemical Monitoring of the Metabolic Activity of Biological Cells 2023

Joerg Rothe (ETH Zürich, Switzerland)
Olivier Frey (ETH Zürich, Switzerland)
Alexander Stettler (ETH Zürich, Switzerland)
Yihui Chen (ETH Zürich, Switzerland)
Andreas Hierlemann (ETH Zürich, Switzerland)

Fabrication of Single Bacterium Sensing Chip via Silver Deposited Corrugated Polystyrene Nanobead Array 2027

Hsin-Yi Hsieh (National Tsing Hua University, Taiwan)
Chun-Wei Lee (National Tsing Hua University, Taiwan)
Hung-Yao Chu (National Tsing Hua University, Taiwan)
Hwan-You Chang (National Tsing Hua University, Taiwan)
Fan-Gang Tseng (National Tsing Hua University and Academia Sinica, Taiwan)

Microfluidic Chip Bio-Sensor for Detection of Cancer Cells 2030

Hesam Babahosseini (VirginiaTech, United States)
Vaishnavi Srinivasaraghavan (VirginiaTech, United States)
Masoud Agah (VirginiaTech, United States)

Improved Detection Limits of Bacterial Endotoxins Using New Type of Planar Interdigital Sensors 2034

A. R. Mohd Syaifudin (Massey University, New Zealand)
Asif I. Zia (Massey University, New Zealand)
S. C. Mukhopadhyay (Massey University, New Zealand)
P. L. Yu (Massey University, New Zealand)
Chinthaka P. Gooneratne (King Abdullah University of Science and Technology, Saudi Arabia)
Jürgen Kosel (King Abdullah University of Science and Technology, Saudi Arabia)

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C3L-C: Magnetic Sensors

Room 102

Session Chairs: Gary O'Brien, (Robert Bosch LLC, USA), Patrick Pons (LAAS CNRS / University de Toulouse, France)

3T MRI Scanner Magnetic Gradient Mapping Using a 3D Hall Probe 2038

J.-B. Schell (University of Strasbourg / InESS, France)
J.-B. Kammerer (University of Strasbourg / InESS, France)
L. Hébrard (University of Strasbourg / InESS, France)
D. Gounot (University of Strasbourg / LINC, France)
E. Breton (University of Strasbourg / LSIIT, France)
L. Cuvillon (University of Strasbourg / LSIIT, France)
M. de Mathelin (University of Strasbourg / LSIIT, France)

A Miniature Digital Current Sensor with Differential Hall Probes Using Enhanced Chopping Techniques and Mechanical Stress Compensation..... 2042

Mario Motz (Infineon Technologies Austria AG, Austria)
Udo Ausserlechner (Infineon Technologies Austria AG, Austria)
Manfred Bresch (Infineon Technologies Austria AG, Austria)
Uwe Fakesch (Infineon Technologies Austria AG, Austria)
Bernhard Schaffer (Infineon Technologies Austria AG, Austria)
Christian Reidl (Infineon Technologies Austria AG, Austria)
Wolfgang Scherr (Infineon Technologies Austria AG, Austria)
Gerhard Pircher (Infineon Technologies Austria AG, Austria)
Michael Strasser (Infineon Technologies Austria AG, Austria)
Volker Strutz (Infineon Technologies Austria AG, Austria)

A Fully Integrated Hall Sensor Microsystem for Contactless Current Measurement 2046

Andrea Ajbl (Électronics Laboratory, EPFL, Switzerland)
Marc Pastre (Électronics Laboratory, EPFL, Switzerland)
Maher Kayal (Électronics Laboratory, EPFL, Switzerland)

Sensitivity Enhancement of the Flexible Inductive Coil Tag Using Magnetic C-Clamp Stripes for the Current Detection of Household Two-Wire Power Lines 2050

Yung-Chang Chen (National Chiao Tung University, Taiwan)
Wei-Hung Hsu (National Chiao Tung University, Taiwan)
Shih-Hsien Cheng (Industrial Technology Research Institute, Taiwan)
Yu-Ting Cheng (National Chiao Tung University, Taiwan)

Area-Efficient Three-Axis Micromechanical Magnetic Sensor..... 2054

Vashwar T. Rouf (University of California, Davis, United States)
Mo Li (University of California, Davis, United States)
David A. Horsley (University of California, Davis, United States)

Compact MEMS Magnetometers for Inertial Measurement Units 2058

C. Buffa (Politecnico di Milano, Italy)
G. Langfelder (Politecnico di Milano, Italy)
A. Longoni (Politecnico di Milano, Italy)
A. Frangi (Politecnico di Milano, Italy)
E. Lasalandra (STMicroelectronics, Italy)

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C3L-D: Integrated Sensors / CMOS-MEMS

Room 101C

Session Chairs: HuiKai Xie, (University of Florida, USA), Shiang-Cheng Lu (National Tsing Hua University, Taiwan)

Integrated Sensing of Mechanical Parameters in a Micro-Turbo-Generator 2062

Mustafa IlkerBeyaz (University of Maryland, United States and Antalya International University, Turkey)
Brendan Hanrahan (University of Maryland and the US Army Research Laboratory, United States)
Jeremy Feldman (University of Maryland, United States)
Reza Ghodssi (University of Maryland, United States)

An All-Inkjet Printed Flexible Capacitor on a Textile Using a New Poly(4-Vinylphenol) Dielectric Ink for Wearable Applications..... 2066

Yi Li (University of Southampton, United Kingdom)
Russel Torah (University of Southampton, United Kingdom)
Steve Beeby (University of Southampton, United Kingdom)
John Tudor (University of Southampton, United Kingdom)

Package Stress Monitor to Compensate for the Piezo-Hall Effect in CMOS Hall Sensors 2070
Samuel Huber (Melexis Technologies SA, Switzerland)
Christian Schott (Melexis Technologies SA, Switzerland)
Oliver Paul (University of Freiburg / IMTEK, Germany)

An Integrated High-Precision Probe System for Near-Field Magnetic Measurements on Cryptographic LSIs 2074
Nguyen Ngoc Mai-Khanh (University of Tokyo, Japan)
Tetsuya Iizuka (University of Tokyo, Japan)
Makoto Yamada (Morita-Tech Co., Ltd, Japan)
Osamu Morita (Morita-Tech Co., Ltd, Japan)
Kunihiro Asada (University of Tokyo, Japan)

A Fully-Differential CMOS-MEMS Resonator Integrated with an on-Chip Amplifier 2078
Vinayak Pachkawade (National Tsing Hua University, Taiwan)
Cheng-Syun Li (National Tsing Hua University, Taiwan)
Sheng-Shian Li (National Tsing Hua University, Taiwan)

A Linear-Response CMOS-MEMS Capacitive Tactile Sensor 2082
C.-T. Sun (National Taiwan University, Taiwan)
Y.-C. Lin (National Taiwan University, Taiwan)
C.-J. Hsieh (National Taiwan University, Taiwan)
J.-C. Liou (National Taiwan University, Taiwan)
L.-B. Wang (National Taiwan University, Taiwan)
Wei-Cheng Tian (National Taiwan University, Taiwan)

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**C3L-E: Diverse Applications of Magnetic Sensors and New Magnetic Sensor Development
Room 101D**

Session Chairs: Alan S. Edelstein, (US Army Research Laboratory, USA), Tien-Kan Chung (National Chiao Tung University, Taiwan)

High Volume Production of Magnetic Sensors for the Automotive Market 2086
Christian Schott (Melexis Technologies SA, Ukraine)
Mykola Blyzniuk (Melexis Technologies SA, Ukraine)

Novel Magnetic Nanostructured Multilayer for High Sensitive Magnetoresistive Sensor 2090
Xiaolu Yin (University of Nebraska- Lincoln, United States)
Sy-Hwang Liou (University of Nebraska- Lincoln, United States)

Long-Range Magnetic Tracking 2094
Pavel Ripka (Czech Technical University, Czech Republic)
Ales Zikmund (Czech Technical University, Czech Republic)
Jan Vcelak (Czech Technical University, Czech Republic)

Magnetoelectric Sensors: Sensitive and Potentially Low-Cost Magnetic Sensors 2098
Alan S. Edelstein (US Army Research Laboratory, United States)
Jonathan R. Petrie (US Army Research Laboratory, United States)
Gollapudi Sreenivasulu (Oakland University, United States)
Gopalan Srinivasan (Oakland University, United States)
Dwight Viehland (Virginia Tech, United States)
Jie Fang (Virginia Tech, United States)

Evaluation of Square Type Electromagnetic Field Screen Implementation on Interference Effects in Magnetic Induction Tomography Modality	2101
Zulkarnay Zakaria (Universiti Malaysia Perlis, Malaysia)	
Noor Alia Mohd Zain (Universiti Malaysia Perlis, Malaysia)	
Ibrahim Balkis (Universiti Malaysia Perlis, Malaysia)	
Sazali Yaacob (Universiti Malaysia Perlis, Malaysia)	
Muhd Saiful Badri Mansor (Universiti Teknologi Malaysia, Malaysia)	
Ruzairi Abdul Rahim (Universiti Teknologi Malaysia, Malaysia)	
Nor Muzakkir Nor Ayob (Universiti Teknologi Malaysia, Malaysia)	
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C3L-F: Practice and Evaluation of Sensor Networks	
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Session Chairs: Yu-Chee Tseng, (National Chiao Tung University, Taiwan), Chih-Yu Lin (Tamkang University, Taiwan)	
VirtualTouch: a Finger Glove to Simulate Touch Screen Commands	2105
Jun-Zhe Wang (National Chiao Tung University, Taiwan)	
Chun-Hao Wu (National Chiao Tung University, Taiwan)	
Yu-Chee Tseng (National Chiao Tung University, Taiwan)	
Performance Evaluation of CDMA-Based Wireless Sensor Networks with Long-Thin Topologies	2109
Ming-Wei Hsu (National Taiwan University, Taiwan)	
Hsin-Mu Tsai (National Taiwan University, Taiwan)	
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