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{1}Chung Yuan Christian University, Taiwan; {2}Jimei University, China; {3}Polish Academy of Sciences, Poland;

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^{1}Hiroshima City University, Japan; ^{2}Nagoya University, Japan*

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{1}CNRS-INSA-UJF-UPS, France; {2}Ecole Supérieure d'Electronique de l'Ouest, France; {3}Institut de Physique du Globe de Paris, France; {4}LAAS-CNRS et University de Toulouse, France; {5}Laboratoire Souterrain à Bas Bruit, France; {6}Université Montpellier

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{1}City University of Hong Kong, Hong Kong; {2}Shenyang Institute of Automation, Chinese Academy of Sciences,
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{1}Karlsruher Institut für Technologie, Germany; {2}Karlsruher Institut für Technologie / Robert BOSCH GmbH,
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{1}Leiden University Medical Centre, Netherlands; {2}Technische Universiteit Delft, Netherlands

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{1}Fraunhofer Institute for Chemical Technology, Germany; {2}SGX Sensortech SA, Switzerland; {3}Universität des Saarlandes, Germany

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SESSION CHAIRS: David Horsley (University of California, Davis)

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{1}B.P. Konstantinov Petersburg Nuclear Physics Institute, Russia; {2}Cavendish Laboratory, United Kingdom;

{3}Centre de Physique des Particules de Marseille, France; {4}Czech Technical University, Czech Rep.; {5}Deutsches Elektronen-Synchrotron, Germany;

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{1}Agency for Defense Development, Korea; {2}Fraunhofer Institute for Ceramic Technologies and Systems, Germany, {3}IBULE Photonics, Korea*

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{1}Johannes Kepler Universität Linz, Austria; {2}voestalpine Stahl GmbH, Austria*

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^{1}City University London, United Kingdom; ^{2}LAAS-CNRS et University de Toulouse, France; ^{3}Riphah University, Pakistan*

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SESSION CHAIRS: Adeel Afzal (King Fahd University of Petroleum and Minerals)

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{1}Universiti Sains Malaysia, Malaysia; {2}Universiti Teknologi MARA, Malaysia*

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{1}Shanghai Jiao Tong University, China; {2}University of Electro-Communications, Japan*

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POSTER AREA

SESSION CHAIR: Tania Mukherjee (Indian Institute of Technology Kharagpur)

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{1}Columbia University, USA; {2}Harvard University, USA; {3}Technical University of Denmark, Denmark

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{1}Merck Ltd., Japan; {2}Tottori University, Japan

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{1}East China Normal University, Shanghai, China; {2}University of California, Berkeley, USA; {3}University of Illinois at Chicago, USA

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{1}Dublin City University, Ireland; {2}Dublin City University & University of the Basque Country, Spain; {3}Dublin Institute of Technology, Ireland; {4}Università degli Studi di Genova, Italy

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Korea Advanced Institute of Science and Technology, Korea

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Junghoon Lee (Seoul National University)

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<i>{1}attophotonics GmbH, Austria; {2}Danube University Krems, Austria; {3}Technische Universität Wien, Austria</i>	
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<i>{1}Landauer, Inc., USA; {2}Purdue University, USA</i>	
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<i>{1}Nanusens / Universitat Politècnica de Catalunya, Spain; {2}Universitat Politècnica de Catalunya, Spain</i>	

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B5L-C: METHODS/CHARACTERIZATION/SYSTEMS

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SESSION CHAIRS: Joseph Talghader (University of Minnesota)

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{1}Gachon University, Korea; {2}Korea Electronics Technology Institute, Korea

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Università degli Studi di Brescia, Italy

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Dalian University of Technology, China

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{1}Galway Clinic, Ireland; {2}NUI Galway, Ireland; {3}University of Limerick, Ireland

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University of Victoria, Canada

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*Miklos Lenner, Wei Quan, Georg Müller, Lin Yang, Andreas Frank, Klaus Bohnert
ABB Switzerland Ltd., Switzerland*

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Hochschule Furtwangen University, Germany*

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*Lourdes Alwis{2}, Tong Sun{1}, Kenneth Grattan{1}
{1}City University London, United Kingdom; {2}Edinburgh Napier University, United Kingdom*

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**SESSION CHAIRS: Yu-Cheng Lin (National Cheng Kung University)
Junghoon Lee (Seoul National University)**

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{1}Commonwealth Scientific and Industrial Research Organisation, Australia; {2}University of Tasmania, Australia*

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*Daniel Smith, Bryce Little, Paul Greenwood, Philip Valencia, Ashfaqur Rahman, Aaron Ingham, Greg Bishop-Hurley, Sumon Shahriar, Andrew Hellicar
Commonwealth Scientific and Industrial Research Organisation, Australia*

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{1}Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Pakistan; {2}International Centre for Integrated Mountain Development, Nepal; {3}Jeju National University, Korea; {4}CS Department, Information Technology University*

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*Mohd Hafiez Mohd Razali, Ammar Zakaria, Ali Yeon Md. Shakaff, Retnam Visvanathan, Fathinul Syahir Ahma Saad, Latifah Munirah Kamarudin, N. S. Hj Abdullah
Universiti Malaysia Perlis, Malaysia*

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*Thyagaraju Damarla
US Army Research Laboratory, USA*

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{1}Kolodzy Consulting, USA; {2}Purdue University, Korea; {3}Unconventional Concepts, Inc., USA; {4}Wright State University, USA

16:00 - 17:30

B5L-F: ELECTRONICS

ROOM 207

SESSION CHAIRS: Michael Lu (National Tsing Hua University)

Hongrui Jiang (University of Wisconsin)

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{1}Pirelli Tyre, Italy; {2}Università degli Studi di Milano-Bicocca, Italy; {3}Università degli Studi di Pavia, Italy

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National Chia Yi University, Taiwan

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Ivan Peric, Felix Ehrler, Richard Leys, Roberto Blanco
Karlsruher Institut für Technologie, Germany

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Ritsumeikan University, Japan

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Chang-Shun Liu, Roozbeh Tabrizian, Farrokh Ayazi
Georgia Institute of Technology, USA

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{1}Fujitsu Laboratories Ltd., Japan; {2}Kobe University, Japan; {3}Ritsumeikan University, Japan

WEDNESDAY, NOVEMBER 4

10:00 - 11:30

C2L-A: SPECIAL SESSION: 3D PRINTED SENSORS & ACTUATORS

ROOM 201

SESSION CHAIR: Gijs Krijnen (University of Twente)

POLYMER COMPOSITES FOR 3D PRINTING OF FUNCTIONAL SENSORS AND TRANSDUCERS N/A

Simon Leigh, Christopher Purssell, James Covington, Duncan Billson, David Hutchins, David Woodward, Nishal Ramadas

University of Warwick, United Kingdom

MULTI-FUNCTIONAL 3D PRINTED AND EMBEDDED SENSORS FOR SATELLITE QUALIFICATION

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Corey Shemelya^{3}, Luis Banuelos-Chacon^{3}, Adrian Melendez^{3}, Craig Kief^{2}, David Espalin^{3}, Ryan Wicker^{3}, Gijs Krijnen^{1}, Eric MacDonald^{3}

^{1}Universiteit Twente, Netherlands; ^{2}University of New Mexico, USA; ^{3}University of Texas at El Paso, USA

A SURVEY OF PRINTABLE PIEZOELECTRIC SENSORS 1426

Sampo Tuukkanen, Satu Rajala

Tampere University of Technology, Finland

3D PRINTED BIO-INSPIRED ANGULAR ACCELERATION SENSOR 1430

Joël van Tiem, Jarno Groenesteijn, Remco Sanders, Gijs Krijnen

Universiteit Twente, Netherlands

3D PRINTED MULTI-CHANNEL EEG SENSORS FOR ZEBRAFISH 1434

Sung-Joon Cho^{2}, Tae-Seung Nam^{1}, Seok-Yong Choi^{1}, Myung-Kyu Kim^{1}, Sohee Kim^{2}

^{1}Chonnam National University Medical Center, Korea; ^{2}Gwangju Institute of Science and Technology, Korea

10:00 - 11:30

C2L-B: ENVIRONMENTAL SENSORS

ROOM 202

SESSION CHAIRS: Harald Steiner (Danube University Krems)

Lina Sarro (Delft University of Technology)

MOBALL: AN INTELLIGENT WIND-OPPORTUNISTIC MOBILE SENSOR TO MONITOR THE POLAR

REGIONS 1437

Faranak Davoodi^{2}, Junichi Asama^{3}, Mina Rais-Zadeh^{4}, Joel Burdick^{1}, Cyrus Shahabi^{5}

^{1}California Institute of Technology, USA; ^{2}Intelligent Buoy Networks, Inc., USA; ^{3}Shizuoka University, Japan; ^{4}University of Michigan, USA; ^{5}University of Southern California, USA

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Zhenyuan Sun, Wentao He, Guanglei Li, Deyong Chen, Junbo Wang, Jian Chen

Institute of Electronics, Chinese Academy of Sciences, China

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<i>{1}Okayama University, Japan; {2}OKI Semiconductor, Japan; {3}OKI Semiconductor Miyagi, Japan; {4}Shinsyu University, Japan; {5}Shizuoka University, Japan</i>	
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<i>{1}Korea Advanced Institute of Science and Technology, Korea; {2}PIXELPLUS, Korea; {3}University of California, San Diego, USA</i>	
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<i>{1}Danube University Krems, Austria; {2}Johannes Kepler Universität Linz, Austria; {3}Université de Bordeaux, France</i>	
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<i>{1}Fondazione Bruno Kessler, Italy; {2}Technische Universität Wien, Austria</i>	
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SESSION CHAIRS: Sang-Seok Lee (Tottori University)	
Deepak Uttamchandani (University of Strathclyde)	
<hr/>	
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<i>Industrial Technology Institute, Miyagi Prefectural Government, Japan</i>	
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<i>Universiteit Antwerpen, Belgium</i>	
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<i>{1}Johannes Kepler Universität Linz, Austria; {2}Universität Bremen, Germany</i>	
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<i>Krikor Ozanyan</i>	
<i>University of Manchester, United Kingdom</i>	

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ROOM 204

SESSION CHAIRS: Frederic Surre (City University London)

Byeongha Lee (Gwangju Institute of Science and Technology)

LOW TEMPERATURE, 400 °C, PURE BORON DEPOSITION: A SOLUTION FOR INTEGRATION OF HIGH-PERFORMANCE SI PHOTODETECTORS AND CMOS CIRCUITS.....*Paper not available*

Vahid Mohammadi, Stoyan Nihtianov

Technische Universiteit Delft, Netherlands

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Sahba Jahromi, Jussi-Pekka Jansson, Juha Kostamovaara

University of Oulu, Finland

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Javad Ghasemi{2}, Asif Chowdhury{1}, Alexander Neumann{2}, Bassem Fahs{1}, Mona Hella{1}, Steve Brueck{2}, Payman Zarkesh-Ha{2}

{1}Rensselaer Polytechnic Institute, USA; {2}University of New Mexico, USA

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Vrije Universiteit Brussel, Belgium

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Yan-Rung Lin{1}, Jung-Hao Chang{2}, Wei-Lun Tsai{2}, Chia-Hung Cho{1}, Hao-Wu Lin{2}

{1}Industrial Technology Research Institute, Taiwan; {2}National Tsing Hua University, Taiwan

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C2L-E: APPLICATION AND ENERGY MANAGEMENT

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SESSION CHAIRS: Jafri Roosber

Walter Lang (Institute for Microsensors, University of Bremen)

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Gholamreza Alirezaei, Denise Cappel

Rheinisch-Westfälische Technische Hochschule Aachen, Germany

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Wei Liu{1}, Zhengqiang Wang{1}, Shaohua Qu{1}, Rong Luo{2}

{1}Hubei University of Arts and Science, China; {2}Tsinghua University, China

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{1}Indian Institute of Technology Delhi, India; {2}Indian Institute of Technology Hyderabad, India; {3}Northeastern University, USA; {4}University of Rochester, USA

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Zengtao Feng, Lingfei Mo, Meng Li
Southeast University, China

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C2L-F: DEVICES/SYSTEMS I

ROOM 207

SESSION CHAIRS: Kenichi Takahata (University of British Columbia)
Svetlana Tatic-Lucic (Lehigh University USA)

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David Horsley{3}, Ofer Rozen{3}, Yipeng Lu{3}, Stefon Shelton{1}, Andre Guedes{1}, Richard Przybyla{1}, Hao-Yen Tang{2}, Bernhard Boser{2}
{1}Chirp Microsystems, USA; {2}University of California, Berkeley, USA; {3}University of California, Davis, USA

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Satoshi Tsuji, Teruhiko Kohama
Fukuoka University, Japan

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AU Optronics Corporation, Taiwan

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Seok-Oh Yun{1}, Moon-Keun Lee{1}, Kyoung G. Lee{1}, Jinsung Yi{2}, Su Jeong Shin{1}, MinHo Yang{1}, Namho Bae{1}, Tae Jae Lee{1}, Jinho Ko{2}, Seok Jae Lee{1}
{1}National Nanofab Center, Korea; {2}PHYCHIPS Inc., Korea

DESIGN OF A NOVEL MAGNETIC FIELD GENERATOR APPLIED IN DYNAMIC CHARACTERISTICS MEASUREMENT OF MAGNETO-DEPENDENT SENSORS..... 1522
Yuan Tian, Zheng Qian, Xiaodong Zhao, Yongfu Deng
Beihang University, China

WEDNESDAY, NOVEMBER 4 – POSTER SESSION

12:30 - 14:00

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POSTER AREA

SESSION CHAIR: Tayfun Akin (Middle East Technical University)

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Jan Lotichius{2}, Timo Singer{2}, Geert Brokmann{1}, Hartmut Übensee{1}, Thomas Ortlepp{1}, Mario Kupnik{2}, Roland Werthschützky{2}

{1}CiS Forschungsinstitut, Germany; {2}Technische Universität Darmstadt, Germany

RESEARCH ON RESPONSE TIME OF THERMOELECTRIC POWER SENSOR 1530

Jiabin Yan, Xiaoping Liao, Zhenxiang Yi

Southeast University, China

3D MODEL OF THE THERMOELECTRIC MICROWAVE POWER SENSOR BY MEMS TECHNOLOGY..... 1534

Zhenxiang Yi, Xiaoping Liao

Southeast University, China

MODELING MEMRISTIVE BIOSENSORS..... 1538

Ioulia Tzouvadaki{1}, Francesca Puppo{1}, Marie-Agnès Doucey{2}, Giovanni De Micheli{1}, Sandro Carrara{1}

{1}École Polytechnique Fédérale de Lausanne, Switzerland; {2}Université de Lausanne, Switzerland

DETECTION OF UNGROUNDED OBJECTS ON MUTUAL CAPACITANCE TOUCH SCREENS 1542

Christian Thoresen, Ulrik Hanke, Kjell Øvergård

Buskerud and Vestfold University College, Norway

DIFFERENTIAL CAPACITIVELY COUPLED CONTACTLESS CONDUCTIVITY DETECTION (DC4D) SENSOR FOR DETECTION OF OBJECT IN MICROFLUIDIC CHANNEL..... 1546

Quang Loc Do{2}, Tung Thanh Bui{1}, Thi Thuy Ha Tran{2}, Katsuya Kikuchi{1}, Masahiro Aoyagi{1}, Trinh Chu Duc{2}

{1}National Institute of Advanced Industrial Science and Technology, Japan; {2}Vietnam National University, Vietnam

12:30 - 14:00

C3P-H: METAL OXIDE BASED GAS SENSORS

POSTER AREA

SESSION CHAIR: Inkyu Park (KAIST)

NEAR REAL-TIME RECONSTRUCTION OF 2D SOIL GAS DISTRIBUTION FROM A REGULAR NETWORK OF LINEAR GAS SENSORS 1550

Patrick Neumann{1}, Matthias Bartholmai{1}, Detlef Lazik{2}

{1}Federal Institute for Materials Research and Testing, Germany; {2}Helmholtz Centre for Environmental Research, Germany

ROOM TEMPERATURE SENSING PERFORMANCE OF GRAPHENE-LIKE SNS₂ TOWARDS AMMONIA 1554

Hao Wang, Keng Xu, Dawen Zeng

Huazhong University of Science and Technology, China

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Yuyan Chen, Guangzhong Xie, Tao Xie, Hongfei Du, Qiuping Zhang, Yuanjie Su, Yadong Jiang
University of Electronic Science and Technology of China, China

AMORPHOUS INDIUM GALLIUM ZINC OXIDE THIN FILM-BASED OZONE SENSORS 1562

Chiu-Hsien Wu, Guo-Jhen Jiang, Kai-Wei Chang, Zu-Yin Deng, Kuen-Lin Chen
National Chung Hsing University, Taiwan

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Saptarshi De, Narayanan Venkataramani, Rajiv Dusane, Shiva Prasad
Indian Institute of Technology Bombay, India

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Tarik Saidi^{1}, Khalid Tahri^{1}, Nezha El Bari^{1}, Radu Ionescu^{3}, Benachir Bouchikhi^{2}
^{1}Moulay Ismail University, Morocco; ^{2}Moulay Ismail University / Sensor Electronic & Instrumentation Group, Morocco; ^{3}Rovira i Virgili University, Spain

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Tanmay A. Kulkarni, Deepa Gupta, Dan Covey, Joseph Cheer, Gymama Slaughter
University of Maryland Baltimore County, USA

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Kanazawa Institute of Technology, Japan

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Shashank Pandey, Niladri Banerjee, Aishwaryadev Banerjee, Nazmul Hasan, Hanseup Kim, Carlos Mastrangelo
University of Utah, USA

THIN FILM ZINC OXIDE GAS SENSOR VIA NEAR-FIELD ELECTROSPRAY N/A

Jianyi Zheng, Weiwei Huang, Lingling Sun, Jiaxin Jiang, Gaofeng Zheng, Daoheng Sun
Xiamen University, China

ROOM TEMPERATURE ALCOHOL SENSORS BASED ON PANI/MWCNT COMPOSITE THIN FILM 1586

Rawat Jaisutti^{2}, Kalya Eaiprasertsak^{2}, Tanakorn Osothchan^{1}
^{1}Mahidol University, Thailand; ^{2}Thammasat University, Thailand

EFFECTS OF POST-THERMAL ANNEALING ON THE PERFORMANCE CHARACTERISTICS OF PD/GAN SCHOTTKY DIODES HYDROGEN SENSORS 1590

Youngran Choi, Hyunsoo Kim
Chonbuk National University, Korea

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Igor Burmistrov^{2}, Alexey Varezchnikov^{2}, Vyacheslav Musatov^{2}, Andrey Lashkov^{2}, Alexander Gorokhovskiy^{2}, Tatyana Yudincheva^{1}, Victor Sysoev^{1}
^{1}Saratov State Technical University, Russia; ^{2}Yuri Gagarin State Technical University of Saratov, Russia

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C3P-J: BIOSENSORS III

POSTER AREA

SESSION CHAIR: Sangmin Jeon (POSTECH Pohang University of Science and Technology)

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Evi Suaebah, Takuro Naramura, Hiroshi Kawarada

Waseda University, Japan

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Tina T.-C. Tseng, Peter W.-H. Chen, Lewis H.-Y. Chang

National Taiwan University of Science and Technology, Taiwan

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Yong Yuan^{2}, Kui Han^{1}

^{1}Nanjing Haida Molecular Diagnostics Ltd, China; ^{2}Southwest Jiaotong University, China

PATTERNING AN ENZYME-MEMBRANE OF BIO-IMAGE SENSOR USING LITHOGRAPHY TECHNIQUE 1608

You-Na Lee, Tomoko Horio, Koichi Okumura, Tatsuya Iwata, Kazuhiro Takahashi, Makoto Ishida, Kazuaki Sawada

Toyohashi University of Technology, Japan

HIGH SENSITIVITY RARE CELL CAPTURING BIOCHIP WITH SEPARABLE MICROSTRUCTURES 1612

Okju Kim, Daewon Lee, Amose Chungwon Lee, Sunghoon Kwon

Seoul National University, Korea

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Ki Bong Song, Chang-Bum Kim, Yo-Han Choi

Electronics and Telecommunications Research Institute, Korea

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Ji Won Lim^{2}, Minseok Kim^{2}, Sung Kuk Lee^{2}, Taesung Kim^{2}, Hyun Ju Kim^{1}, Sang Jun Lee^{1}

^{1}Korea Research Institute of Bioscience and Biotechnology, Korea; ^{2}Ulsan National Institute of Science and Technology, Korea

DEVELOPMENT OF INTEGRATED FLEXIBLE PENETRATING MICROELECTRODE ARRAY WITH INTERCONNECTION CABLE FOR USE IN VARIOUS NERVOUS SYSTEMS 1622

Donghak Byun, Keonghwan Oh, Sohee Kim

Gwangju Institute of Science and Technology, Korea

MICROFLUIDIC PAPER-BASED PRECONCENTRATOR BASED ON ION CONCENTRATION POLARIZATION N/A

Sung Il Han^{2}, Rhokyun Kwak^{1}, Ki-Back Lee^{2}, Yong Kyoung Yoo^{2}, Junwoo Lee^{2}, Cheonjung Kim^{2}, Kyo Seor Hwang^{1}, Jeong Hoon Lee^{2}

^{1}Korea Institute of Science and Technology, Korea; ^{2}Kwangwoon University, Korea

NEW COPOLYMER BRUSHES FOR LABEL-FREE AFFINITY BIOSENSORS 1626

Eduard Brynda{1}, Frantisek Surman{1}, Cesar Rodriguez-Emmenegger{1}, Tomas Riedel{1}, Hana Lisalova Vaisocherova{2}

{1}Academy of Sciences of the Czech Republic, Czech Rep.; {2}Institute of Photonics and Electronics, Academy of Sciences CR, v.v.i., Czech Rep.

12:30 - 14:00

C3P-K: OPTICAL SENSORS III

POSTER AREA

SESSION CHAIR: Jeong Bong Lee (University of Texas at Dallas)

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Dongmin Seo{3}, Mohendra Roy{3}, Jaewoo Kim{3}, Kiyounng Ann{3}, Yongha Hwang{3}, Yeon Hwa Kwak{1}, Sangwoo Oh{2}, Moonjin Lee{2}, Jae Woo Lee{3}, Sungkyu Seo{3}

{1}Korea Electronics Technology Institute, Korea; {2}Korea Research Institute of Ships and Ocean Engineering, Korea; {3}Korea University, Korea

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Khurelbaatar Zagarzusem{1}, Yeon-Ho Kil{1}, Sim-Hoon Yuk{1}, Taek Sung Kim{2}, Zumuukhorol Munkhsaihan{1}, Chel-Jong Choi{1}, Kyu-Hwan Shim{1}

{1}Chonbuk National University, Korea; {2}Kunsan National University, Korea

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Stephen Durbin{2}, Amer Mahmood{3}, David Lubelski{2}, Bernhard Adams{1}

{1}Argonne National Laboratory, USA; {2}Purdue University, USA; {3}Qatar Environment & Energy Research Institute, Qatar

FIBER OPTIC REFRACTOMETER BASED IN MULTIMODE INTERFERENCE EFFECTS (MMI) USING INDIUM TIN OXIDE (ITO) COATING 1639

Adolfo Rodríguez-Rodríguez{2}, René Domínguez-Cruz{2}, Daniel May-Arrijoja{1}, Ignacio R. Matías-Maestro{3}, Francisco Javier Arregui{3}, Carlos Ruiz-Zamarreño{3}

{1}Centro de Investigaciones en Óptica, Spain; {2}Universidad Autonoma de Tamaulipas, Mexico; {3}Universidad Pública de Navarra, Spain

ROOM TEMPERATURE DEPOSITION OF HIGHLY SENSITIVE VANADIUM OXIDE FILMS FOR INFRARED LIGHT SENSING APPLICATIONS.....Paper not available

*Siamack Vosoogh Grayli, Ibrahim El-Chami, Behraad Bahreyni, Gary Leach
Simon Fraser University, Canada*

UTILIZING NEW ERBIUM-DOPED FIBER LASER SCHEME FOR LONG-DISTANCE FIBER BRAGG GRATING (FBG) SENSOR SYSTEM..... 1642

C. H. Yeh{1}, Z. H. Chen{1}, J. Y. Chen{1}, C. W. Chow{2}

{1}Feng Chia University, Taiwan; {2}National Chiao Tung University, Taiwan

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*Wen Cheng Lai, Sheng-Lyang Jang, Ching-Wen Hsue
National Taiwan University of Science and Technology, Taiwan*

12:30 - 14:00

**C3P-L: MECHANICAL, MAGNETIC & PHYSICAL SENSORS III
POSTER AREA**

SESSION CHAIR: Ulrich Schmid (Vienna University of Technology)

MASH2-0 ELECTROMECHANICAL SIGMA-DELTA MODULATOR FOR CAPACITIVE MEMS SENSORS WITH DIGITAL FILTER CALIBRATION USING SIMULATED ANNEALING..... 1649

*Bader Almutairi{1}, Ali Alshehri{1}, Michael Kraft{2}
{1}King Abdulaziz City for Science and Technology, Saudi Arabia; {2}Université de Liège, Belgium*

OPTIMIZATION OF A BIO-INSPIRED SOUND LOCALIZATION SENSOR FOR HIGH DIRECTIONAL SENSITIVITY 1653

*Andrew Reid, Deepak Uttamchandani, James F.C. Windmill
University of Strathclyde, United Kingdom*

A NOVEL FLEXOGRAPHIC PRINTED STRAIN GAUGE ON PAPER PLATFORM 1657

*Dinesh Maddipatla{2}, Binu Baby Narakathu{2}, Sai Guruva Reddy Avuthu{2}, Sepehr Emamian{2}, Ali Eshkeiti{2}, Amer Abdulmahdi Chlaihawi{2}, Bradley Bazuin{2}, Margaret Joyce{2}, Christie Wong Barrett{1}, Massood Zandi Atashbar{2}
{1}Mac Arthur Corporation, USA; {2}Western Michigan University, USA*

MEASUREMENT OF 3-D VIBRATION BY DYNAMIC PHOTOGRAMMETRY USING LEAST-SQUARE IMAGE MATCHING FOR SUB-PIXEL TARGETING 1661

*Hyoseong Lee{3}, Huinam Rhee{3}, Jae-Hong Oh{1}, Jin-Ho Park{2}
{1}Chonnam National University, Korea; {2}Korea Atomic Energy Research Institute, Korea; {3}Sunchon National University, Korea*

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*Yeon Hwa Kwak{1}, Sungkyu Seo{2}, Kunnyun Kim{1}
{1}Korea Electronics Technology Institute, Korea; {2}Korea University, Korea*

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*Robert Roberts, Sheng Zeng, Norman Tien
University of Hong Kong, Hong Kong*

DESIGN AND FABRICATION OF INDIVIDUALIZED CAPACITIVE MICROSENSOR FOR TILT MEASUREMENT..... 1669

*Cyril Baby Karuthedath, Norbert Schwesinger
Technische Universität München, Germany*

UNDERWATER OBSERVATION OF VIBRATION BEHAVIOR OF THE MINIATURE CIRCULAR PIEZOELECTRIC MICROMACHINED ULTRASONIC TRANSDUCERS..... 1673

*Daisuke Akai, Makoto Ishida, Daisuke Takashima
Toyohashi University of Technology, Japan*

HIGHLY FLEXIBLE AND SENSITIVE GRAPHENE-SILVER NANOCOMPOSITE STRAIN SENSOR.....1677
Nagarjuna Neella, Venkateswarlu Gaddam, Konandur Rajanna, M.M. Nayak, Talabattulla Srinivas
Indian Institute of Science, India

PVDF BASED ARTIFICIAL CANAL LATERAL LINE FOR UNDERWATER DETECTION.....1681
Jianchao Fu, Yonggang Jiang, Deyuan Zhang
Beihang University, China

SKIN FORCE SENSOR USING PIEZORESISTIVE PEDOT:PSS WITH ARABITOL ON FLEXIBLE PDMS....1685
Mengying Xie, Kean Aw, Wei Gao
University of Auckland, New Zealand

HIGH TEMPERATURE PRESSURE SENSOR USING CU-SN WAFER LEVEL BONDING1689
Guandong Liu, Chengchen Gao, Y.X Zhang, Yilong Hao
Peking University, China

12:30 - 14:00

C3P-M: SENSOR APPLICATIONS

POSTER AREA

SESSION CHAIR: Sang-Seok Lee (Tottori University, Japan)

**HIGH-SPEED SENSING OF SOFTNESS DURING GRASPING PROCESS BY ROBOT HAND
EQUIPPED WITH TACTILE SENSOR1693**
Yugo Katsuki{2}, Yuji Yamakawa{2}, Masatoshi Ishikawa{2}, Makoto Shimojo{1}
{1}University of Electro-Communications, Japan; {2}University of Tokyo, Japan

**DEVELOPMENT OF AN ACTUATION SYSTEM FOR A ROTARY HYDRAULIC BRAKE ON A LOW
COST LIGHT WEIGHT KNEE-ANKLE-FOOT ORTHOSIS.....1697**
Murray Lawn{2}, Makoto Takashima{2}, Makoto Ninomiya{1}, Jiangli Yu{2}, Kayano Soma{2}, Takakazu Ishimatsu{2}
{1}Nagasaki Kanae Co.Ltd, Japan; {2}Nagasaki University, Japan

12:30 - 14:00

C3P-N: SENSOR NETWORK AND APPLICATION III

POSTER AREA

SESSION CHAIR: RYUTARO MAEDA (AIST)

**ENERGY EFFICIENT ROUTING SCHEME USING LEADER ELECTION IN AMBIENT ENERGY
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Md. Enam Haque, Uthman Baroudi
King Fahd University of Petroleum and Minerals, Saudi Arabia

DISTANCE CONTROL BETWEEN MULTIPLE DRONES FOR STABLE COMMUNICATION1705
Riho Motooka{2}, Takeru Katagiri{1}, Shintaro Murayama{2}, Junji Takahashi{2}, Yoshito Tobe{2}, Ryo Nishikawa{2}
{1}Aoyama Gakuin University, Japan; {2}Aoyama Gakun University, Japan

**DEPLOYMENT ALGORITHMS FOR COVERAGE IMPROVEMENT IN A NETWORK OF MOBILE
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Hamid Mahboubi, Fabrice Labeau
McGill University, Canada

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*Zhi Liu, Toshitaka Tsuda, Hiroshi Watanabe
Waseda University, Japan*

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*Dongyu Wang, Kazunori Sugiura
Keio University, Japan*

COMPARATIVE ANALYSIS OF A CONTENTION BASED (RI-MAC) AND TDMA BASED (ATMA) MAC PROTOCOLS FOR WIRELESS SENSOR NETWORKS 1720

*Trilok Chand, Arvind Kakria
PEC University of Technology, India*

DESIGN AND IMPLEMENTATION OF A CONNECTED FARM FOR SMART FARMING SYSTEM 1724

*Minwoo Ryu, Jaeseok Yun, Ting Miao, Il-Yeup Ahn, Sung-Chan Choi, Jaeho Kim
Korea Electronics Technology Institute, Korea*

12:30 - 14:00

C3P-P: (BIO-)CHEMICAL AND GAS SENSING APPLICATIONS

POSTER AREA

SESSION CHAIR: Siyang Zheng (Penn State University)

CAPACITOR CHARGING USING ALUMINUM/PHOSPHATE-BASED CELL..... 1728

*Gymama Slaughter, Joshua Sunday, Tanmay A. Kulkarni
University of Maryland Baltimore County, USA*

DYNAMICAL THRESHOLD SETTING METHOD USING OUTLIER REJECTION TEST FOR SENSOR REACTION DETECTION 1732

*Kazuki Hirasawa^{1}, Rika Takahashi^{1}, Yoshinori Takei^{1}, Hidehito Nanto^{1}, Atsushi Saitoh^{2}
^{1}Kanazawa Institute of Technology, Japan; ^{2}Shibaura Institute of Technology, Japan*

FLUIDICS-BASED PLANT STUDY PLATFORM WITH COLORIMETRIC HUMIDITY MONITORING..... 1736

*Satya Achanta, Sanghan Park, Chang-Soo Kim
Missouri University of Science and Technology, USA*

SMART CHAIR BASED ON MULTI HEART RATE DETECTION SYSTEM 1740

*Byeong Gu Ahn, Yun Hong Noh, Do Un Jeong
Dongseo University, Korea*

PHOTOPLETHYSMOGRAPHY AS A FORM OF BIOMETRIC AUTHENTICATION 1744

*Anthony Lee, Younghyun Kim
Samsung Electronics, Korea*

ROBOTIC GAS SOURCE LOCALIZATION ASSISTED BY ACTIVE AIRFLOW GENERATION 1746

*Ayano Murai, Kamon Yoshimoto, Ryuichi Takemura, Haruka Matsukura, Hiroshi Ishida
Tokyo University of Agriculture and Technology, Japan*

EXPERIMENTAL VALIDATION OF MOUSE EEG SENSOR THROUGH THE ANALYSIS OF VISUALLY EVOKED POTENTIAL ELICITED BY SUCCESSIVE FLASH STIMULI..... 1750

*Donghyeon Kim, Chanmi Yeon, Euiheon Chung, Kiseon Kim
Gwangju Institute of Science and Technology, Korea*

3D MULTI-FUNCTION BIO-SPHERE DROSOPHILA BEHAVIOR PLATFORM 1754

*Hao-Yu Liang, Wei-Cheng Lai, Pei-Hsuan Lo, Weileun Fang
National Tsing Hua University, Taiwan*

IMPLEMENTATION OF WIDE RANGE SOIL MOISTURE PROFILE PROBE BY COPLANAR PLATE CAPACITOR ON FILM SUBSTRATE 1758

*Yasutomo Shirahama, Ryo Shigeta, Yoshihiro Kawahara, Tohru Asami, Yuki Kojima, Kazuhiro Nishioka
University of Tokyo, Japan*

ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY FOR IN SITU MONITORING OF EARLY ZEOLITE FORMATION 1762

*Gert Brabants{2}, Erwin Konrad Reichel{1}, Ali Abdallah{1}, Francis Taulelle{3}, Christine Kirschhock{3}, Johan Martens{3}, Bernhard Jakoby{1}
{1}Johannes Kepler Universität Linz, Austria; {2}Johannes Kepler Universität Linz & Katholieke Universiteit Leuven, Austria; {3}Katholieke Universiteit Leuven, Belgium*

12:30 - 14:00

C3P-Q: INTERFACE CIRCUITS

POSTER AREA

SESSION CHAIR: Zheyao Wang (Tsinghua University, Peking)

A CMOS BEOL ACCELEROMETER LOW-NOISE READOUT AMPLIFIER WITH 4.2 ZF/RT-HZ TOTAL NOISE FLOOR..... 1765

*Josep Maria Sánchez-Chiva{2}, Piotr Michalik{2}, Daniel Fernández{1}, Jordi Madrenas{2}
{1}Nanusens / Universitat Politècnica de Catalunya, Spain; {2}Universitat Politècnica de Catalunya, Spain*

THEORETICAL ANALYSIS AND SIMULATION OF SU-8 MICRONEEDLES FOR EFFECTIVE SKIN PENETRATION AND DRUG DELIVERY 1769

*Richa Mishra, Tarun Kanti Bhattacharyya, Tapas Kumar Maiti
Indian Institute of Technology, Kharagpur, India*

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*Jie Wei{2}, Sarah Risquez{2}, Hervé Mathias{2}, Elie Lefevre{2}, François Costa{1}
{1}Université Paris-Est / CNRS, France; {2}Université Paris-Sud / CNRS, France*

BIRDCAGE TYPE NMR RECEIVER COIL SENSOR WITH INTEGRATED DETUNING CIRCUIT FOR 3T MRI SYSTEM 1777

*Sheikh Faisal Ahmad, Young Cheol Kim, Ick Chang Choi, Hyun Deok Kim
Kyungpook National University, Korea*

A LOW-POWER INTEGRATED CIRCUIT FOR INTERFACING A CAPACITIVE MICROMACHINED ULTRASONIC TRANSDUCER (CMUT) BASED RESONANT GAS SENSOR..... 1781

*Mohit Kumar, Chunkyun Seok, Marzana Mantasha Mahmud, Xiao Zhang, Omer Oralkan
North Carolina State University, USA*

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*Yuechuan Yu, Vishal Bhola, Prashant Tathireddy, Darrin Young, Shad Roundy
University of Utah, USA*

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Wen Li (Michigan State University)

ADVANCED CONFORMAL PARYLENE FABRICATION FOR MICRO/NANO DEVICES..... 1789

*Wei Wang{2}, Yaoping Liu{2}, Dongyang Kang{1}, Lingqian Zhang{2}, Yu-Chong Tai{1}
{1}California Institute of Technology, USA; {2}Peking University, China*

EMBEDDED SACRIFICIAL LAYERS FOR CMUT FABRICATION 1791

*Rupak Bardhan Roy{1}, Ayhan Bozkurt{1}, Omid Farhanieh{1}, A Sanli Ergun{2}
{1}Sabanci University, Turkey; {2}TOBB University of Economics and Technology, Turkey*

DIRECTED GROWTH OF METAL NANOPARTICLES ON SUBSTRATES BY POLARIZED LIGHT IRRADIATION 1795

*Masashi Watanabe, Satoshi Araki, Kenshi Hayashi
Kyushu University, Japan*

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*Takahiro Yamashita, Seiichi Takamatsu, Hironao Okada, Toshihiro Itoh, Takeshi Kobayashi
National Institute of Advanced Industrial Science and Technology, Japan*

MOS2 NANOSENSORS FABRICATED BY DIELECTROPHORETIC ASSEMBLY FOR ULTRASENSITIVE AND RAPID SENSING OF VOLATILE ORGANIC COMPOUNDS 1803

*Shih-Pang Wang, Chung-Hsuan Wu, Chien-Chong Hong
National Tsing Hua University, Taiwan*

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SESSION CHAIRS: Kwang-Seok Yun (Sogang University, Seoul, Korea)

Larisa Florea (Dublin City University)

BIOMIMETIC MAGNETIC NANOCOMPOSITE FOR SMART SKINS..... 1807

*Ahmed Alfadhel, Jurgen Kosel
King Abdullah University of Science and Technology, Saudi Arabia*

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<i>Shanshan Yao{1}, Jeong Seok Lee{2}, K'ehleyr James{1}, Jace Miller{3}, Venkataramana Narasimhan{3}, Andrew Dickerson{3}, Xu Zhu{4}, Yong Zhu{1} {1}North Carolina State University, USA; {2}Samsung Electronics, Korea; {3}Samsung Electronics America, Inc., USA; {4}Samsung Research America, USA</i>	
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Gijs Krijnen (University of Twente)	
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<i>Goncalo Jesus{1}, Anabela Oliveira{1}, Alberto Azevedo{1}, Antonio Casimiro{2} {1}Laboratório Nacional de Engenharia Civil, Portugal; {2}Universidade de Lisboa, Portugal</i>	
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SESSION CHAIRS: Jeong Bong Lee (University of Texas at Dallas)

Yan-Rung Lin (Industrial Technology Research Institute)

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*Yhang Ricardo Sipauba Carvalho Da Silva, Yasumasa Koda, Satoshi Nasuno, Rihito Kuroda, Shigetoshi Sugawa
Tohoku University, Japan*

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*Anubha Bilgaiyan, Tejendra Dixit, Iyamperumal Anand Palani, Vipul Singh
Indian Institute of Technology Indore, India*

ORGANIC PHOTODETECTORS WITH ACTIVE LAYER PATTERNED BY LITHOGRAPHY 1855

*Pawel Malinowski, Epimitheas Georgitzikis, Caterin Salas Redondo, David Cheyngs, Soeren Steudel, Sarah Schols,
Paul Heremans
imec, Belgium*

X-RAY DETECTORS BASED ON P+-SI/N-ZNO ABRUPT HETEROJUNCTIONS 1859

*Xiaolong Zhao{2}, Yongning He{2}, Liang Chen{1}, Jinliang Liu{1}, Yang Ouyang{1}
{1}Northwest Institute of Nuclear Technology, China; {2}Xi'an Jiaotong University, China*

HIGH-SPEED GATED CMOS DETECTOR FOR FLUORESCENCE LIFETIME MICROSCOPY EXTENDING TO NEAR-INFRARED WAVELENGTHS..... 1863

*Hans Ingelberts, Maarten Kuijk
Vrije Universiteit Brussel, Belgium*

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*Liangliang Chen, Ning Xi, Zhanxin Zhou, Bo Song, Yongliang Yang, Yujie Hao, Zhiyong Sun
Michigan State University, USA*

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SESSION CHAIRS: Yogesh Gianchandani (University of Michigan)

Pit Pillatsch (University of California, Berkeley)

SPHERICAL MAGNETIC ENERGY HARVESTER WITH THREE ORTHOGONAL COILS 1867

*Josef Joos, Oliver Paul
Albert-Ludwigs-Universität Freiburg, Germany*

LOW POWER ADAPTIVE POWER MANAGEMENT WITH ENERGY AWARE INTERFACE FOR WIRELESS SENSOR NODES POWERED USING PIEZOELECTRIC ENERGY HARVESTING..... 1871

*Zheng Jun Chew, Meiling Zhu
University of Exeter, United Kingdom*

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*Yi Li, Zeynep Celik-Butler, Donald Butler
University of Texas at Arlington, USA*

ELECTRET STABILITY RELATED TO THE CRYSTALLINITY IN POLYPROPYLENE 1879

*Anders Thyssen, Kristoffer Almdal, Erik Vilain Thomsen
Technical University of Denmark, Denmark*

PLUG-THROUGH ENERGY MONITOR FOR PLUG LOAD ELECTRICAL DEVICES 1883

*Michael Lorek, Fabien Chraim, Kristofer Pister
University of California, Berkeley, USA*

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**C4L-F: DEVICES/
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**SESSION CHAIR: Mohamed Sultan Mohamed Ali (Universiti Teknologi Malaysia)
Donald Malocha (University of Central Florida)**

MINIATURIZED TWO STAGE AEROSOL IMPACTOR WITH CHIP-SCALE STAGES FOR AIRBORNE PARTICULATE SIZE SEPARATION 1887

*Maribel Maldonado-Garcia{2}, Varun Kumar{2}, Siavash Pourkamali{2}, J.C. Wilson{1}
{1}University of Denver, USA; {2}University of Texas at Dallas, USA*

COMPARISON OF TWO TYPES OF TACTILE SENSING LAYER IN TOUCH SCREEN PANEL FOR FORCE SENSITIVE DETECTION 1891

*Yeon Hwa Kwak{1}, Wonhyo Kim{1}, Sungkyu Seo{2}, Kunnyun Kim{1}
{1}Korea Electronics Technology Institute, Korea; {2}Korea University, Korea*

FULLY BIODEGRADABLE PRESSURE SENSOR, VISCOELASTIC BEHAVIOR OF PGS DIELECTRIC ELASTOMER UPON DEGRADATION 1893

*Clementine Marie Boutry, Amanda Nguyen, Qudus Omotayo Lawal, Alex Chortos, Zhenan Bao
Stanford University, USA*

LATEST RESULTS ON THE HV-CMOS PIXEL SENSOR IN THE AMS H18 PROCESS 1897

*Simon Feigl
Istituto Nazionale di Fisica Nucleare, Switzerland*

A MOTION-TOLERANT HEART RATE DETECTION METHOD USING BIO-IMPEDANCE AND MUSIC ALGORITHM 1901

*Jonghwa Lee, Seonghwan Cho
Korea Advanced Institute of Science and Technology, Korea*

DEVELOPMENT OF A THREE-DIMENSIONAL INTEGRATED IMAGE SENSOR WITH PIXEL-PARALLEL SIGNAL PROCESSING ARCHITECTURE 1905

*Kei Hagiwara{1}, Masahide Goto{1}, Yuki Honda{1}, Masakazu Nanba{1}, Hiroshi Ohtake{1}, Yoshinori Iguchi{1}, Takuya Saraya{2}, Masaharu Kobayashi{2}, Hiroshi Toshiyoshi{2}, Eiji Higurashi{2}, Toshiro Hiramoto{2}
{1}Japanese Broadcasting Corporation, Japan; {2}University of Tokyo, Japan*

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C5L-A: BIOLOGICAL & CHEMICAL SENSORS

ROOM 201

SESSION CHAIRS: Siyang Zheng (Penn State University)

Koichi Awazu (AIST)

TERAHERTZ GAS-SENSORS: GAS-PHASE SPECTROSCOPY AND MULTIVARIATE ANALYSIS FOR MEDICAL AND SECURITY APPLICATIONS 1909

Philipp Neumaier{1}, Klaus Schmalz{2}, Johannes Borngräber{2}, Dietmar Kissinger{2}, Heinz-Wilhelm Hübers{1}
{1}German Aerospace Center, Germany; {2}Leibniz-Institut für innovative Mikroelektronik, Germany

A TWO-CHANNEL BACTERIA-BASED BIOSENSOR FOR WATER QUALITY MONITORING 1913

Weiyang Yang, Xuejian Wei, Seokheun Choi
Binghamton University, State University of New York, USA

A NOVEL OLFATORY NEURAL NETWORK FOR CLASSIFICATION OF CHINESE LIQUORS USING ELECTRONIC NOSE 1917

Yaqi Jing, Qinghao Meng, Peifeng Qi, Ming Zeng
Tianjin University, China

PORTABLE ACTIVE SENSORS FOR HUMAN SWEAT RATE MONITORING 1921

Jai Kyoung Sim, Young-Ho Cho
Korea Advanced Institute of Science and Technology, Korea

TDLAS USING FPGA-BASED LOCK-IN DETECTION FOR MULTI-CHANNEL CHEMICAL SPECIES TOMOGRAPHY 1925

Andrea Chighine{1}, Stylianos-Alexios Tsekenis{1}, Edward Fisher{1}, Nick Polydorides{1}, David Wilson{2}, Michael Lengden{2}, Walter Johnstone{2}, Hugh McCann{1}
{1}University of Edinburgh, United Kingdom; {2}University of Strathclyde, United Kingdom

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C5L-B: PHYSICAL SENSORS II

ROOM 202

SESSION CHAIRS: Andrei Shkel (University of California, Irvine)

Sinead O'Keeffe (University of Limerick)

AN RF/MICROWAVE MICROFLUIDIC SENSOR FOR MINIATURIZED DIELECTRIC SPECTROSCOPY BASED ON SENSOR TRANSMISSION CHARACTERISTICS 1929

Michael Suster, Debnath Maji, Nicholas Vitale, Umut Gurkan, Pedram Mohseni
Case Western Reserve University, USA

PERFORMANCE OF THE ENGINEERING MODEL OF THE CSES HIGH PRECISION MAGNETOMETER ..1933

Bingjun Cheng{2}, Bin Zhou{2}, Werner Magnes{3}, Roland Lammegger{1}, Andreas Pollinger{3}, Michaela Ellmeier{1}
Christian Hagen{3}, Irmgard Jernej{3}
{1}Graz University of Technology, Austria; {2}National Space Science Center, Chinese Academy of Sciences, China;
{3}Space Research Institute, Austrian Academy of Sciences, Austria

A MACHINE LEARNING APPROACH TO FIND ASSOCIATION BETWEEN IMAGING FEATURES AND XRF SIGNATURES OF ROCKS IN UNDERGROUND MINES.....1937

*Ashfaqur Rahman, Md Sumon Shahriar, Greg Timms, Craig Lindley, Andrew Boo Davie, David Biggins, Andrew Hellicar, Charlotte Sennersten, Greg Smith, Mac Coombe
Commonwealth Scientific and Industrial Research Organisation, Australia*

A NOVEL CAPACITIVE MICROMACHINED TRANSDUCER FOR MICRO-PRESSURE MEASUREMENT....1941

*Zhikang Li{2}, Libo Zhao{2}, Yingjie Hu{2}, Sina Akhbari{1}, Zhuangde Jiang{2}, Liwei Lin{1}
{1}University of California, Berkeley , USA; {2}Xi'an Jiaotong University, China*

A SURFACE ACOUSTIC WAVE SENSOR TERMINAL BASED ON ONE-PORT RESONATOR FOR CONTACT STRESS MEASUREMENT IN SLITS1945

*Haining Li{2}, Jiexiong Ding{2}, Zhipeng Zhou{2}, Guangmin Liu{1}
{1}China Academy of Engineering Physics, China; {2}University of Electronic Science and Technology of China, China*

ESTIMATING PARTICULATE MATTER USING COTS CAMERAS1949

*Hsin-Hung Hsieh, Hu-Cheng Lee, Wen-Liang Hwang, Ling-Jyh Chen
Academia Sinica, Taiwan*

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SESSION CHAIRS: Darrin Young (University of Utah)

Anna Mignani (Institute of Applied Physics, IFAC)

FINGER MOTION DETECTION GLOVE TOWARD HUMAN-MACHINE INTERFACE1953

*Ji-Hoon Suh, Morteza Amjadi, Inkyu Park, Hyung-Joun Yoo
Korea Advanced Institute of Science and Technology, Korea*

REAL-TIME RECONSTRUCTION OF FOOTPRINT POSITIONS USING AN "INTELLIGENT CARPET" IMAGING SENSOR.....1957

*Jose Antonio Cantoral-Ceballos, Paul Wright, John Vaughan, Patricia J. Scully, Krikor B. Ozanyan
University of Manchester, United Kingdom*

VISION-BASED INTERFACE FOR PEOPLE WITH SERIOUS SPINAL CORD INJURY1961

*Chao Zhang, Takakazu Ishimatsu, Naoya Shiraishi, Jiangli Yu, Lawn Murray
Nagasaki University, Japan*

SMART OPTRODE FOR NEURAL STIMULATION AND SENSING1965

*Fahimeh Dehkhoda{2}, Ahmed Soltan{2}, Reza Ramezani{2}, Hubin Zhao{2}, Yan Liu{1}, Tim Constandinou{1}, Patrick Degenaar{2}
{1}Imperial College London, United Kingdom; {2}Newcastle University, United Kingdom*

MEMRISTOR-BASED PIXEL FOR EVENT-DETECTION VISION SENSOR1969

*Olufemi Olumodeji{1}, Alessandro Bramanti{2}, Massimo Gottardi{1}
{1}Fondazione Bruno Kessler, Italy; {2}ST Microelectronics, Italy*

THREE SOURCES, THREE RECEIVERS, SIX DEGREES OF FREEDOM: AN ULTRASONIC SENSOR FOR POSE ESTIMATION & MOTION CAPTURE 1973

*Dennis Laurijssen, Steven Truijen, Wim Saeys, Jan Steckel
Universiteit Antwerpen, Belgium*

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Takahito Ono (Tohoku University)

WAFER-LEVEL FABRICATION OF STRAIN GAUGES ON PDMS MEMBRANES FOR LOW-PRESSURE SENSING..... 1977

*William Fausto Quirós-Solano, Gregory Pandraud, Pasqualina M. Sarro
Technische Universiteit Delft, Netherlands*

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*Niladri Banerjee, Aishwaryadev Banerjee, Shashank Pandey, Bishnu Gogoi, Carlos H. Mastrangelo
University of Utah, USA*

MODULATE THE CHAMBER PRESSURE OF THE HERMETIC SEALED MEMS DEVICE BY VARYING THE CAVITY DEPTH OF CAP SI 1984

*Shyh-Wei Cheng{1}, Jui-Chun Weng{2}, His-Cheng Hsu{2}, Yi-Chiang Sun{1}, Yang-Che Chen{2}, Weileun Fang{1}
{1}National Tsing Hua University, Taiwan; {2}Taiwan Semiconductor Manufacturing Company, Limited, Taiwan*

A NOVEL OPTICAL SELF-ALIGNMENT TECHNOLOGY FOR REALIZATION OF COMPACT OPTICAL MULTI-GAS SENSOR SYSTEM..... 1988

*Yoshiya Yamamoto{1}, Ryosuke Shinozaki{1}, Ippei Asahi{2}, Hideki Ninomiya{2}, Fusao Shimokawa{1}, Hidekuni Takao{1}
{1}Kagawa University, Japan; {2}Shikoku Research Institute, Japan*

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