2018 XV International Scientific Conference on Optoelectronic and Electronic Sensors (COE 2018)

Warsaw, Poland 17-20 June 2018



IEEE Catalog Number: ISBN:

CFP18N59-POD 978-1-5386-4108-8

Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP18N59-POD

 ISBN (Print-On-Demand):
 978-1-5386-4108-8

 ISBN (Online):
 978-1-5386-4107-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



Program

2018 XV International Scientific Conference on Optoelectronic and Electronic Sensors (COE)

Poster session 1

The Method for Easy Identifying Zero Temperature Drift of Catalytic Bead Sensor	
Karol Jabłoński (Silesian University of Technology, Poland), Tomasz Grychowski (Silesian University of Technology in Gliwice, Poland)	1
Inkjet 3D Printed Venturi Microflowmeter	
Krzysztof Adamski (Wrocław University of Science and Technology, Poland), Bartosz Kawa (Wrocław University of Science and Technology, Poland), Rafał Walczak (Wrocław University of Science and Technology, Poland)	5
Electron Transparent Anode for MEMS Transmission Electron Microscope	
Michal Krysztof (Wroclaw University of Science and Technology, Poland), Tomasz Grzebyk (Wroclaw University of Science and Technology, Poland), Piotr Szyszka (Wroclaw University of Science and Technology, Poland), Karolina Laszczyk (Wroclaw University of Science and Technology & Politechnika Wrocławska, Poland), Anna Górecka-Drzazga (Wroclaw University of Science and Technology, Poland), Jan Dziuban (Wroclaw University of Science and Technology, Poland)	8
Mechanical Characterization of Inkjet 3D Printed Microcantilevers	
Bartosz Kawa (Wrocław University of Science and Technology, Poland), Krzysztof Adamski (Wrocław University of Science and Technology, Poland), Rafał Walczak (Wrocław University of Science and Technology, Poland), Danylo Lizanets (Wroclaw University of Science and Technology, Poland)	12
Microsystems for Cell Deformability Measurements	
Aleksandra Pokrzywnicka (Wrocław University of Science and Technology, Poland), Danylo Lizanets (Wroclaw University of Science and Technology, Poland), Patrycja Śniadek (Poznan University of Life Sciences, Poland), Rafał Walczak (Wrocław University of Science and Technology, Poland)	15
Array of Gas Sensors Based on TiO2 upon Temperature Modulation	
Patryk Gwizdz (AGH University of Science and Technology, Poland), Marta Radecka (AGH University of Science and Technology, Poland), Katarzyna Zakrzewska (AGH University of Science and Technology, Poland)	19
Single Sensor Hot-Wire Anemometer Based on Thermal Time Constant Estimation	
Eligiusz Pawłowski (Lublin University of Technology, Poland)	23
Technology of Stearine Transfer Using Laser-Heating for Lab-On-Paper Development	
Krzysztof Hackiewicz (Warsaw University of Technology, Poland), Jerzy Weremczuk (Warsaw University of Technology, Poland), Artur Dybko (Warsaw University of Technology & Faculty of Chemistry, Poland), Michał Chudy (Warsaw University of Technology & Faculty of Chemistry, Poland)	27
Determination of Oxygen Saturation Based on Distorted Photoplethysmography Signals by Scaling Method	
Adam Naguszewski (Warsaw University of Technology, Poland), Jerzy Weremczuk (Warsaw University of Technology, Poland)	31
Evaluation of the Commercial Electrochemical Gas Sensors for the Monitoring of CO in Ambient Air	
Grzegorz Jasinski (Gdańsk University of Technology, Poland), Marta Dmitrzak (PM Ecology, Poland), Piotr Jasiński (Gdańsk University of Technology, Poland)	35

MEMS & biofludic session

From a Microtip to a Planar Cathode - An Electron Source with a Simplified Technology	
Karolina Laszczyk (Wroclaw University of Science and Technology & Politechnika Wrocławska, Poland), Michal Krysztof (Wroclaw University of Science and Technology, Poland), Tomasz Grzebyk (Wroclaw University of Science and Technology, Poland), Piotr Szyszka (Wroclaw University of Science and Technology, Poland), Anna Górecka-Drzazga (Wroclaw University of Science and Technology, Poland), Jan Dziuban (Wroclaw University of Science and	
Technology, Poland)	39
Copper Sulfide Materials for Nonenzymatic Glucose Detection	
Anna Kusior (AGH University of Science and Technology, Poland)	43
MEMS Nanoleak Gas Injection System	
Tomasz Grzebyk (Wroclaw University of Science and Technology, Poland), Anna Górecka- Drzazga (Wroclaw University of Science and Technology, Poland)	47
Inkjet 3D Printing of Labs-On-A-Chip with Optical Detection	
Rafał Walczak (Wrocław University of Science and Technology, Poland)	51
A Concept of MEMS Mass Spectrometer	
Piotr Szyszka (Wroclaw University of Science and Technology, Poland), Tomasz Grzebyk (Wroclaw University of Science and Technology, Poland), Anna Górecka-Drzazga (Wroclaw University of Science and Technology, Poland), Jan Dziuban (Wroclaw University of Science and Technology, Poland)	55
Chemical sensors	
Point Defect Structure and Gas Sensing Properties of V2O5 Thin Films Deposited by Rf Reactive Sputtering	
Krystyna Schneider (AGH University of Science and Technology, Poland)	59
TiO2/SnO2 Gas Sensors of H2	
Marta Radecka (AGH University of Science and Technology, Poland), Katarzyna Zakrzewska (AGH University of Science and Technology, Poland)	63
Wavelet Transform Analysis of Temperature Modulated Gas Sensor Response	
Lukasz Wozniak (Gdansk University of Technology, Poland), Pawel Kalinowski (Gdansk University of Technology, Poland), Grzegorz Jasinski (Gdańsk University of Technology, Poland), Piotr Jasiński (Gdańsk University of Technology, Poland)	67
Gas Sensing Properties of Reduced Graphene Oxide Modified by Copper Oxide	
Tadeusz Pisarkiewicz (AGH University of Science and Technology, Poland), Wojciech Maziarz (AGH University of Science and Technology, Poland), Artur Malolepszy (Warsaw University of Technology, Poland), Leszek Stobiński (Warsaw University of Technology, Poland), Dagmara Michon (AGH University of Science and Technology, Poland), Artur Rydosz (AGH University of Science and Technology, Poland)	71
Inertial Measurements of Curling Stone Movement	, _
Bartosz Dzikowski (Warsaw University of Technology, Poland), Marek Pachwicewicz (Warsaw University of Technology, Poland), Jerzy Weremczuk (Warsaw University of Technology, Poland) Poland)	74
Optoelectronic sensors	/ 4
Fabrication and Testing of Smart Refractory for Energy System Monitoring in Harsh- Environments	
Edward Sabolsky (West Virginia University, USA), Katarzyna Sabolsky (West Virginia University, USA), Gunes Yakaboylu (West Virginia University, USA), Benjamin Buzzo (West Virginia University, USA)	77

	OLED Display as a Useful Tool Towards Real-Time On-Chip Photosensitivity Investigation of Microorganisms	
	Agnieszka Podwin (Wroclaw University of Science and Technology, Poland), Danylo Lizanets (Wroclaw University of Science and Technology, Poland)	81
	Strain Sensor Based on a Long Period Fiber Grating with Dual- Resonance Closed in the Interferometric Structure	
	Renata Zawisza (Military University of Technology, Poland), Predrag Mikulic (Université du Québec en Outaouais, Canada), Wojtek J. Bock (Université du Québec en Outaouais, Canada), Leszek Jaroszewicz (Military University of Technology, Poland)	85
	Concept Design: Multi-Sensing System to Prevent Renal Deterioration in Heart Failure Patients	
	Samah Atiyat (University of Alabama at Birmingham, USA), Shadi Karabsheh (King Faisal Specialist Hospital & Research Center, Saudi Arabia)	88
	Making Power over Fiber Supply of Microelectronic Sensor Devices Simpler	
	Pawel Zylka (Wroclaw University of Science and Technology, Poland), Michal Guzowski (Wrocław University of Science and Technology, Poland)	91
	Photonic Crystal Fiber Dynamic Pressure Sensor	
	Cezary Kaczmarek (Lublin University of Technology, Poland), Waldemar Wójcik (Lublin University of Technology, Poland), Muhtar Junisbekov (M. Kh. Dulaty Taraz State University, Kazakhstan)	95
Poster se	ssion 2	
	Influence of the Square Wave Voltage on Dynamical Properties of a Flat Voltammetric Electrode in the Time Domain by the Electrochemical Reversible Reaction	
	Krzysztof Suchocki (Technical University of Gdansk, Poland)	99
	CuO and CuO/TiO2-y Thin-Film Gas Sensors of H2 and NO2	
	Artur Rydosz (AGH University of Science and Technology, Poland), Wojciech Maziarz (AGH University of Science and Technology, Poland), Andrzej Brudnik (AGH University of Science and Technology, Poland), Adam Czapla (AGH University of Science and Technology, Poland), Katarzyna Zakrzewska (AGH University of Science and Technology, Poland)	103
	Spectral Dependence of the Sensitivity of Polarization Maintaining Optical Fibers to Temperature	
	Cezary Kaczmarek (Lublin University of Technology, Poland)	107
	Microfluidic Chip for Cyclical Continuous-Flow PCR - Preliminary Results of the Technology	
	Wojciech Kubicki (Wroclaw University of Science and Technology & Faculty of Microsystem Electronics and Photonics, Poland), Maciej Sasowski (Wroclaw University of Science and Technology, Poland), Arkadiusz Wala (Wroclaw University of Science and Technology,	111
	Poland)	111
	Marcin Urbanowicz (Nałęcz Institute of Biocybernetics and Biomedical Engineering PAS, Poland), Artur Jasiński (Gdańsk University of Technology, Poland), Dorota Pijanowska (Nalecz IBBE PAS, Poland), Maria Bocheńska (Gdańsk University of Technology, Poland)	114
	Mathematical Modeling of LTCC Based Microfluidic Type Chemical Microreactor	
	Elżbieta Remiszewska (IBBE PAS, Poland), Konrad Dudzinski (Institute of Biocybernetics and Biomedical Engineering, Poland), Karol Malecha (Faculty of Microsystem Electronics and Fotonics, PWR, Poland), Dorota Pijanowska (Nalecz IBBE PAS, Poland)	110
	Evaluation of Fluorescein as a Label in Electrochemical and Optical Measurements	110
	Agnieszka Paziewska-Nowak (Nalecz IBBE PAS, Poland), Tomasz Raczynski (Nalecz IBBE PAS, Poland), Daniel Janczak (Warsaw University of Technology, Poland), Malgorzata Jakubowska (Warsaw University of Technology, Poland), Dorota Pijanowska (Nalecz IBBE PAS, Poland)	121
	Skydiver Flight Parameters Recorder	
	Marek Pachwicewicz (Warsaw University of Technology, Poland), Stanisław Rzewuski (Warsaw University of Technology & RS Technologies LTD., Poland), Jerzy Weremczuk (Warsaw University of Technology, Poland)	125
	oniversity of reciniology, roland,	+23

Accuracy Estimation of the Sounding Rocket Navigation System	
Marek Pachwicewicz (Warsaw University of Technology, Poland), Jerzy Weremczuk (Warsaw University of Technology, Poland)	129
Evaluation of the Electronic Nose Used for Monitoring Environmental Pollution	
Grzegorz Jasinski (Gdańsk University of Technology, Poland), Pawel Kalinowski (Gdansk University of Technology, Poland), Lukasz Wozniak (Gdansk University of Technology, Poland), Piotr Jasiński (Gdańsk University of Technology, Poland)	133