

2018 IEEE 8th International Nanoelectronics Conference (INEC 2018)

**Kuala Lumpur, Malaysia
3-5 January 2018**



**IEEE Catalog Number: CFP18625-POD
ISBN: 978-1-5386-4251-1**

**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:	CFP18625-POD
ISBN (Print-On-Demand):	978-1-5386-4251-1
ISBN (Online):	978-1-5386-4250-4
ISSN:	2159-3523

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

RELIABILITY PERSPECTIVE ON THE IOT AND NANOELECTRONICS.....	1
<i>C. Tan</i>	
VERTICAL NANOWIRE TUNNELING FIELD-EFFECT TRANSISTORS ADOPTING CORE-SHELL STRUCTURE WITH STRAIN EFFECTS	3
<i>J.-S. Yoon, C.-K. Baek</i>	
DEVELOPMENT OF MALODOR MONITORING SYSTEM BASED ON ELECTRONIC NOSE TECHNOLOGY	5
<i>T. Pobkrut, S. Siyang, T. Thepudom, T. Kerdcharoen</i>	
THERMAL CHARACTERIZATION OF POLYCRYSTALLINE DIAMOND USING INFRARED THERMAL IMAGING MEASUREMENT	7
<i>B. Tay, Q. Kong, L. Bodelot, B. Lebental, D. Misra</i>	
A 2DOF MEMS VIBRATIONAL ENERGY HARVESTER.....	9
<i>K. Tao, L. Tang, J. Wu, J. Miao</i>	
HCI AND NBTI RELIABILITY SIMULATION FOR 45NM CMOS USING ELDO	11
<i>A. Jaafar, N. Soin, S. Hatta</i>	
A COMPENSATION METHOD FOR LONG-TERM ZERO BIAS DRIFT OF MEMS BYROSCOPE BASED ON IMPROVED CEEMD AND ELM.....	13
<i>H. Gu, X. Liu, B. Zhao, H. Zhou</i>	
EVOLUTION OF THE PHYSICS AND STOCHASTICS OF FAILURE IN ULTRA-THIN DIELECTRICS - FROM SiO_2 TO ADVANCED HIGH-K GATE STACKS	15
<i>N. Raghavan</i>	
STRATEGIES IN MICROFLUIDIC SELF-ASSEMBLED NANOPARTICLES.....	17
<i>C. Iliescu, G. Tresset, M. Ni, C. Marculescu</i>	
ELECTRICAL ANALYSIS OF INGAAS-BASED PLANAR AND TRI-GATE NMOSFET WITH S/D RESISTANCE DEPENDENCIES AT DIFFERENT DRAIN BIASES	19
<i>N. Othman, S. Hatta, N. Soin</i>	
FLUXLESS FLIP CHIP INTERCONNECTS FOR MEMS DEVICES FOR HETEROGENEOUS INTEGRATION	21
<i>T. Lee</i>	
AN ENHANCED HIGH-SENSITIVITY MICRO RESONANT THERMOMETER WITH AXIAL STRAIN AMPLIFICATION EFFECT	23
<i>Q. Shen, J. Yang, J. Xie, S. Ren, W. Yuan</i>	
ELECTROMECHANICAL PIEZORESISTIVE SENSING OF GRAPHENE-BASED INTRACRANIAL PRESSURE SENSOR	25
<i>M. Mohamad, N. Soin, F. Ibrahim</i>	
PIEZORESISTIVE EFFECT OF INTERDIGITATED ELECTRODE SPACING GRAPHENE-BASED MEMS INTRACRANIAL PRESSURE SENSOR.....	27
<i>S. Rahman, N. Soin, F. Ibrahim</i>	
MULTI-LAYER NONCONTACT DISK-SHAPED ELECTROSTATIC MICROGENERATOR	29
<i>B. Wang, Y. Chen, L. Tang, K. Tao</i>	
DISTRIBUTION OF SN IN STRAINED $\text{Ge}_{1-x}\text{Sn}_x$ (001): THE EFFECT OF SURFACE PASSIVATION	31
<i>S. Ong, E. Tok</i>	
CONCEPT, METHODOLOGIES AND TOOLS FOR CARBON FOR SENSING DEVICES.....	33
<i>M. Giorcelli, P. Savi, A. Tagliaferro</i>	
TUNING ENDOTAXIAL GROWTH OF CoSi_2 NANOWIRES AND NANODOTS	35
<i>B. Ong, E. Tok</i>	
AN IMPROVED SOI RESONANT PRESSURE SENSOR USING ATMOSPHERIC PACKAGING	37
<i>S. Ren, J. Xie, Q. Shen, F. Wang, W. Yuan, J. Zhang</i>	
FLEXIBLE PRESSURE AND FORCE SENSING SYSTEM FOR WEARABLE MEDICAL DEVICES	39
<i>N. Xue, C. Liu, J. Sun, C. Wang</i>	
PREPARATION OF MULTI-WALLED CARBON NANOTUBES/POLYDIMETHYLSILOXANE COMPOSITE FOR ELECTRONIC SKIN APPLICATION.....	41
<i>C. Chi, X. Sun, T. Li, N. Xue, C. Liu</i>	

WATER HARDNESS DETERMINATION USING DISPOSABLE MEMS-BASED ELECTROCHEMICAL SENSOR.....	43
<i>N. Wang, E. Kanhere, K. Tao, J. Wu, J. Miao, M. Triantafyllou</i>	
THE FABRICATION METHOD OF HIGH HEIGHT-TO-DIAMETER RATIO MICRO-WINEGLASS RESONATORS.....	45
<i>J. Xie, S. Ren, Q. Shen, L. Chen, H. Xie, W. Yuan</i>	
IN-PLANE ROTATIONAL TUNING OF POLYMER DIFFRACTION GRATING FOR DIVERSE IMAGING SPECTROSCOPY	47
<i>S. Muttikulangara, M. Baranski, S. Rehman, L. Hu, J. Miao</i>	
SENSITIVITY AND Q-FACTOR TRADE-OFF ANALYSIS OF MEMS PRESSURE SENSOR FOR BLADDER IMPLANTS.....	49
<i>N. Yusof, B. Bais, B. Majlis, N. Soin</i>	
EFFECT OF FLUORINE CIRCUMFERENCE OF ZINC-HEXADECAFLUOROPHTHALOCYANINE TOWARDS VOCs DETERMINATION BY USING LOW-COST OPTICAL ELECTRONIC NOSE	51
<i>T. Thepudom, T. Kerdcharoen</i>	
ANALYTICAL CAPACITANCE MODEL FOR IN-GA-ZN-O THIN-FILM TRANSISTORS INCLUDING DEGENERATION	53
<i>F. Zhuang, J. Fang, W. Deng, X. Ma, J. Huang</i>	
Author Index	