

## 2021 IEEE Regional Symposium on Micro and Nanoelectronics (RSM) Program

	Monday, August 2 2021	Tuesday, August 3 2021
9:00 - 9:30	<b>Opening Remarks</b>	<b>K2:</b> <i>Keynote: Security in Semiconductor Manufacturing</i>
9:30 - 9:45	<b>K1:</b> <i>Keynote : Democratized Wearable Electronics Using DIY Assembly of Paper and High Performance CMOS Electronics</i>	
9:45 - 10:15		
10:15 - 10:30	<b>Break</b>	
10:30 - 10:45		<b>Break</b>
10:45 - 12:50	<b>1A:</b> <i>Electronics Materials &amp; Device Fabrication</i>	<b>2A:</b> <i>Photonics Technology, Solar Cells &amp; Product development</i>
12:50 - 14:00	<b>Lunch Break</b>	<b>Lunch Break</b>
14:00 - 15:50	<b>1B:</b> <i>Device Physics &amp; characterization</i>	<b>2B:</b> <i>Modelling, Simulation &amp; Sensors</i>
15:50 - 16:00	<b>Break</b>	<b>Break</b>
16:00 - 17:50	<b>1C:</b> <i>IC Packaging and Testing</i>	<b>2C:</b> <i>VLSI Design, MEMS &amp; Nanoelectronics</i>
17:50 - 18:15		<b>Closing Ceremony</b>

### Monday, August 2 2021 9:00 - 9:30 Opening Ceremony

**MC:** Iskandar Yahya (Universiti Kebangsaan Malaysia, Malaysia)

### Monday, August 2 2021 9:30 - 10:15

#### **K1: Keynote 1: Democratized Wearable Electronics Using DIY Assembly of Paper and High Performance CMOS Electronics**

**Prof. Dr. Muhammad Mustafa**

**Chair:** P. Suthitha Menon (Universiti Kebangsaan Malaysia & Institute of Microengineering and Nanoelectronics (IMEN), Malaysia)

**Abstract:** We always hear about smart cities, but rarely, we hear about smart villages although nearly half of the world's population live in rural areas. While today's most advanced technologies are geared toward a more digital future, precision healthcare, enhanced convenience and safety - but they are mostly for those who can afford them easily and most probably they already live a more comfortable life. It might be alarming that in addition to gross income inequality, there is an increasing rise of gross technological inequality. Therefore, by developing accessible (affordable and simple) electronic technologies with sustainable materials and processes and for sustainable applications, we can assist those billions to augment the quality of their life. Therefore, we are singularly focused on developing and deploying democratized wearable electronics. Electronics which are carefully designed and optimally crafted using non-functionalized sustainable household materials, environmentally benign processes and assembled through Do-It-Yourself (DIY) integration strategies. Our objective is to develop electronics which are simple to learn and easy to use. Therefore, we are making them interactive thus anyone can use them - anyone from any age group without any language or financial barrier. We use a minimalist approach in the context of using fully flexible CMOS electronics for data and cost management. A few applications will be shown focusing on paper skin, paper watch, wearable stethoscope, and oddly enough how such low-cost technology can be used to fight against medication related overdose or addiction.

## 1A: Electronics Materials & Device Fabrication

Room: IEEE-RSM-WEBEX

**Chair:** Iskandar Yahya (Universiti Kebangsaan Malaysia, Malaysia)

### 10:30 *Evaluation of Monolayer Graphene Heat Spreader by Sensitive Micro-Coil Heater-Thermometer (invited)*

Mohd Faizol Abdullah and Nur Julia Nazim Bulya Nazim (MIMOS Berhad, Malaysia); Nurhidaya Soriadi (Universiti Teknologi PETRONAS, Malaysia); Siti Aishah Mohamad Badaruddin (MIMOS Berhad, Malaysia); Syono Mohd. Ismahadi (Mimos Berhad, Malaysia)

pp. 1-3

### 10:50 *Influence Of Annealing Temperature On Electrical And Physical Properties Of Tungsten Doped Vanadium Dioxide Thin Films*

Hashimah Hashim, Nurul Natasha Saliman and Puteri Sarah Mohamad Saad (Universiti Teknologi MARA, Malaysia)

pp. 4-7

### 11:05 *Effect of IDE Spacing on the Performance of ERGO Chemiresistive Humidity Sensor*

Norhazlin Khairudin (College of Engineering, Malaysia & UITM, Malaysia); Ahmad Sabirin Zoolfakar, Muhammad Afiq Ajwad Romli and Muhammad Haziq Bin Ilias (Universiti Teknologi MARA, Malaysia); Azrif Manut (Universiti Teknologi MARA); Norhafizah Burham (Universiti Teknologi Mara, Malaysia); Rozina Abdul Rani (Universiti Teknologi MARA, Malaysia); Dharma Aryani (State Polytechnic of Ujung Pandang, Indonesia)

pp. 8-11

### 11:20 *Plasma-Assisted Reduction and Substitutional Doping of Graphene Oxide Nanosheets with Low-Work-Function for Transparent Conducting Electrode Applications*

Muhammad Aniq Shazni Mohammad Haniff (Insititute of Microengineering and Nanoelectronics, Universiti Kebangsaan Malaysia, Malaysia)

pp. 12-15

### 11:35 *Evaluation of physicochemical characteristics and antimicrobial activities of copper oxide nanoparticles formed by the solution combustion method*

A. Jegatha Christy (Jayaraj Annapackiam College for Women (Autonomous), India); Suresh Sagadevan and Yasmin Abdul Wahab (University of Malaya, Malaysia); L. C. Nehru (Bharathidasan University, Trichy, Tamilnadu, India); Hanim Hussin (Universiti Teknologi MARA, Malaysia); Nurul Ezaila Alias (Universiti Teknologi Malaysia, Malaysia); Rozana Aina Maulat Osman, CEng (Universiti Malaysia Perlis, Malaysia)

pp. 16-19

### 11:50 *Structural and morphological properties of AlGaN thin films prepared by co-sputtering technique*

Nur Afiqah Othman (Universiti Tun Hussein Onn Malaysia, Malaysia); Nafarizal Nayan (Universiti Tun Hussein Onn Malaysia & Microelectronic and Nanotechnology - Shamsuddin Research Centre (MiNT-SRC), Malaysia); Mohd Kamarulzaki Mustafa (Universiti Tun Hussein Onn Malaysia, Malaysia); Zulkifli Azman (Universiti Tun Hussein Onn Malaysia & Microelectronics and Nanotechnology-Shamsuddin Research Centre (MiNT-SRC), Malaysia); Megat Muhammad Ikhsan Megat Hasnan (Researcher, Malaysia); Anis Suhaili Bakri (Universiti Tun Hussein Onn Malaysia, Malaysia); Siti Noryasmin Jaffar (UTHM, Malaysia); Ahmad Shuhaimi (University of Malaya, Malaysia); Mohamad Hafiz Mamat (Universiti Teknologi MARA, Malaysia); Mohd Zamri Mohd Yusop (Universiti Teknologi Malaysia, Malaysia); Muhammad Yazid Ahmad (Nanorian Technologies Sdn Bhd, 40 & 40, 1, Jln Kajang Perdana 3/2, Malaysia)

pp. 20-23

### **12:05 Inhomogenous Deposition of Vertical MoS<sub>2</sub> Grown by Chemical Vapor Deposition**

Muhammad Hilmi Johari and Mohamad Shukri Sirat (Universiti Kebangsaan Malaysia, Malaysia); Mohd Ambri Mohamed (Universiti Kebangsaan Malaysia (UKM), Malaysia); Abdul Rahman Mohamad (Universiti Kebangsaan Malaysia, Malaysia)  
pp. 24-26

### **12:20 Fabrication and Characterisation of Resistive Nanocrystalline Graphite**

Suhana Mohamed Sultan (Universiti Teknologi Malaysia); Pu Suan Hui (University of Southampton Malaysia, Malaysia); Sam Fishlock (Ulster University, United Kingdom (Great Britain)); Harold Chong (ECS, University of Southampton, United Kingdom (Great Britain)); Hing Wah Lee (Mimos Berhad, Malaysia); John McBride (University of Southampton Malaysia Campus, Malaysia)  
pp. 27-29

### **12:35 Effect of Zinc Precursor on Interdigitated Electrode using Electrochemical Deposition Method**

Khairunnisa Nasirah Ahmad Sakhairi (Universiti Teknologi MARA, Malaysia); Azrif Manut (Universiti Teknologi MARA & College of Engineering, Malaysia); Ahmad Sabirin Zoofakar and Maizatul Zolkapli (Universiti Teknologi MARA, Malaysia)  
pp. 30-33

## **Monday, August 2 2021 14:00 - 15:50**

### **1B: Device Physics & characterization**

Room: IEEE-RSM-WEBEX

**Chair:** Nafarizal Nayan (Universiti Tun Hussein Onn Malaysia & Microelectronic and Nanotechnology - Shamsuddin Research Centre (MiNT-SRC), Malaysia)

### **14:00 The Development of IoT-based Solar Battery Monitoring System (invited)**

Maizatul Zolkapli and Ahmad Sabirin Zoofakar (Universiti Teknologi MARA, Malaysia); Azrif Manut (Universiti Teknologi MARA & College of Engineering, Malaysia); Harnani Hassan (Universiti Teknologi MARA, Malaysia); Noor Ezan Abdullah (Universiti Teknologi Mara, Malaysia); Muhammad Asraf Hairuddin and Nurul Amira Anang Othman (Universiti Teknologi MARA, Malaysia)  
pp. 34-37

### **14:20 Simulation of Zinc Oxide, Barium Sodium Niobate, and Barium Titanate as Lead-Free Piezoelectric Materials**

Norhafizah Burham (Universiti Teknologi Mara, Malaysia); Anees Abdul Aziz, Norhazlin Khairudin and Nur Afiqah Fariah Zaki (Universiti Teknologi MARA, Malaysia)  
pp. 38-41

### **14:35 Simulation of Breakdown Voltage using LTspice for Boost Converter Application**

Puteri Sarah Mohamad Saad, Nur Aini Hussain and Hashimah Hashim (Universiti Teknologi MARA, Malaysia); Shafinaz Sobihana Shariffudin (Universiti Teknologi Mara, Malaysia)  
pp. 42-45

### **14:50 Determination of the pH sensitivity level of anodized Ta<sub>2</sub>O<sub>5</sub> nanotubular using pH buffer solution: Towards engine oil deterioration sensor**

Nur Lili Suraya Ngadiman, Rozina Abdul Rani, Zulasyraf Farhan Zulkifli, Muhammad Firdaus Abdullah, Siti Rabizah Makhsin, Maizatul Zolkapli and Ahmad Sabirin Zoofakar (Universiti Teknologi MARA, Malaysia); Majid Nour (King Abdulaziz University, Saudi Arabia)  
pp. 46-49

### **15:05 Facile microwave-assisted synthesis of agarose hydrogel for fibre optic biosensors application**

Muhammad Haziq Noor Akashah, Rozina Abdul Rani and Nor Hayati Saad (Universiti Teknologi MARA, Malaysia); Mohd. Kamil Abd. Rahman (Universiti Teknologi MARA Malaysia, Malaysia); Patricia J. Scully (National University of Ireland, Ireland); Siti Rabizah Makhsin (Universiti Teknologi MARA, Malaysia)  
pp. 50-53

**15:20 Effect of Sodium Nitrate on the Formation of Graphene Oxide via Modified Hummers Method for Sensors Application**

Mohd Rafal Sahudin, Siti Rabizah Makhsin, Muhammad Azmi Ayub, Rozina Abdul Rani and Nor Hayati Saad (Universiti Teknologi MARA, Malaysia); Muhammed Zourob (Alfaisal University, KSA, Saudi Arabia)  
pp. 54-57

**15:35 Effects of Different Oxide Thicknesses on the Characteristics of CNTFET**

Muhammad Faris Abdul Hadi (Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia); Hanim Hussin and Maizan Muhamad (Universiti Teknologi MARA, Malaysia); Norhayati Soin and Yasmin Abdul Wahab (University of Malaya, Malaysia)  
pp. 58-61

**Monday, August 2 2021 16:00 - 17:50**

**1C: IC Packaging and Testing**

Room: IEEE-RSM-WEBEX

**Chair:** Ir. Hazian Bin Mamat (Mimos Berhad, Malaysia)

**16:00 Addressing RDSon Challenges in PQFN for enhanced DRMOS performance (invited)**

Cheok Io Fong (ON Semiconductor, Taiwan); Beng Kuan Lim (ON Semiconductor, Singapore)  
pp. 62-65

**16:20 Metallization Reliability Assessment for Via related Defect Density**

Yew Huang Lau, Faizah Abu Bakar and Muhammad Haniff Mehat (Silterra Malaysia, Malaysia)  
pp. 66-68

**16:35 Elimination of Metal Etching Defects through the Experimental Design Process Characterization at Encapsulation and Electro-deflashing Processes**

Nadia Nor Ahmad Taufiq, Khirullah Abdul Hamid, Aiman Hakim Badarisman and Hamizan Ideris (Nexperia Malaysia Sdn Bhd, Malaysia); Azman Jalar (Universiti Kebangsaan Malaysia, Malaysia); Maria Abu Bakar (Universiti Kebangsaan Malaysia & UKM, Malaysia)  
pp. 69-72

**16:50 The Effect of Electrolytic Deflash Current on Delamination of Epoxy Mold Compound During Tin Plating Process**

Joon Shyan Tan (Nexperia Malaysia, Malaysia); Wai Wai Lee (Nexperia Malaysia Sdn Bhd, Malaysia); A. Atiqah (Universiti Kebangsaan Malaysia, Malaysia); Khirullah Abdul Hamid (Nexperia Malaysia Sdn Bhd, Malaysia); Azman Jalar (Universiti Kebangsaan Malaysia (UKM), Malaysia); Maria Abu Bakar (Universiti Kebangsaan Malaysia & UKM, Malaysia)  
pp. 73-75

**17:05 An Efficient March (5n) FSM-Based Memory Built-In Self Test (MBIST) Architecture**

Thomas Kong Sien Nguan (Universiti Teknologi Malaysia & Faculty of Engineering, Malaysia); Nurul Ezaila Alias, Afiq Hamzah, Izam Kamisian, Michael Loong Peng Tan and Usman Ullah Sheikh (Universiti Teknologi Malaysia, Malaysia); Yasmin Abdul Wahab (University of Malaya, Malaysia)  
pp. 76-79

**17:20 Signal Integrity Analysis and Noise Source extraction of Integrated Circuits using IBIS Models**

Tamana Baba, Nurul Arfah Che Mustapha and Nurul Fadzlin Hasbullah (International Islamic University Malaysia, Malaysia)  
pp. 80-83

**17:35 3-D Finite Element Modelling of Nanoindentation Event on Sn-3.5 Ag lead-free solder**

Kim S Siow (Universiti Kebangsaan Malaysia, Malaysia); Ben Beake (Micro Materials Ltd, Malaysia); Katta Mohan (Raghu Engineering College, Malaysia)  
pp. 84-87

Tuesday, August 3 2021 9:00 - 9:45

## K2: Keynote: Security in Semiconductor Manufacturing

*Ir. Ts. Bernard Lim*

**Chair:** Ahmad Sabirin Zoolfakar (Universiti Teknologi MARA, Malaysia)

**Abstract:** In our everyday life today, semiconductor plays a particularly important role. One could consider that most of our daily use devices will have semiconductor devices in it. For one instance, it could just be used as a simple device to turn on and off our light switch, but it also may play an important role in devices that keeps people alive. More so now, when we are talking about digitalization, our every day-to-day information has now been digitized and feedback into a centralize big data storage either physically or in the cloud. Another buzz word that has now play an important role is Internet of things, IoT. There is an increase in diversity and complexity of IoT applications that creates a lot of challenges in System on a Chip designers. One of the aspects that becomes crucial will be implementing security at the design phases, building hardware that incorporates hardened security features to ensure that devices are protected throughout their lifecycle from chip manufacturing to day-to-day deployment, to decommissioning. This presentation shares some of practices and challenges that are been used to ensure security hardening primarily in the hardware.

Tuesday, August 3 2021 9:45 - 10:30

## K3: Keynote: Printed Flexible and Stretchable Electronics Toward Wearable Sensing Devices

*Professor Ir. Dr. Norhayati Soin*

**Chair:** Ahmad Sabirin Zoolfakar (Universiti Teknologi MARA, Malaysia)

**Abstract:** The demand for printed, flexible and stretchable electronics is growing fast. The rapid expansion in smart wearable and integrated electronic devices has stimulated demand for advanced smart systems with high performance, micro size, high reliability, mechanical flexibility, and high-temperature stability for application as flexible and stretchable displays, personal health monitoring, human motion capturing, smart textiles, electronic skins, flexible energy source and others. The main requirement for these applications is flexibility and stretchability, as these devices are subject to various mechanical deformations including twisting, bending, folding, and stretching during operation.

The development of printed, flexible and stretchable conductors over the last decade has resulted in commercialization of flexible and stretchable sensors for various applications, circuits, displays, and energy harvesters for next-generation wearables and soft robotics. These systems must be able to conform to the shape of and survive the environment in which they must operate. They are typically fabricated on flexible plastic substrates or are printed/woven into fabrics.

This presentation will cover the development of current printable, flexible and stretchable devices using advanced materials. The research activities at Center of Printable Electronics. Universiti Malaya will also be highlighted.

## 2A: Photonics Technology, Solar Cells & Product development

Room: IEEE-RSM-WEBEX

**Chair:** Maizatul Zolkapli (Universiti Teknologi MARA, Malaysia)

### 10:45 *PLS predictive model for in-vivo non-invasive finger touch blood glucose NIR spectrosensor (invited)*

Katrul Nadia Basri (Photonics, MIMOS Berhad, Kuala Lumpur, Malaysia); Nur Azera Tuhaime (MIMOS Berhad, Malaysia); Mohd Hafizulfika Hisham (MIMOS BERHAD, Malaysia); Muhammad Hafiz Laili (MIMOS Berhad, Malaysia); Zalhan Md Yusof (Photonics, MIMOS Berhad, Kuala Lumpur, Malaysia); Fatin Suraini Mazni, Abdul Rauf Yusof and Norlaila Mustafa (Hospital Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia); Hyzan Mohd Yusof (OSA Technology Sdn. Bhd, Selangor, Malaysia)  
pp. 88-91

### 11:05 *Effect of Single-Mode and Hetero-core Macrobend Fiber Optics*

Noor Azie Azura Mohd Arif (UKM, Malaysia); Abang Annuar Ehsan (Universiti Kebangsaan Malaysia & NXPhotonics, Malaysia); Dilla Duryha (IMEN, UKM, Malaysia)  
pp. 92-95

### 11:20 *Numerical Analysis of Ultrathin TiO<sub>2</sub> Photoanode Layer of Dye Sensitized Solar Cell by Using SCAPS-1D*

Nur Syamimi Noorasid and Faiz Arith (Universiti Teknikal Malaysia Melaka, Malaysia); Ahmad Nizamuddin Muhammad Mustafa (University Teknikal Malaysia Melaka, Malaysia); Syazwan Hanani Meriam Suhaimy (Universiti Tun Hussein Onn Malaysia, Malaysia); Ahmad Syahiman Mohd Shah (Universiti Malaysia Pahang, Malaysia); Mohd Asyadi 'Azam bin Mohd Abid (Universiti Teknikal Malaysia Melaka, Malaysia)  
pp. 96-99

### 11:35 *Acetone Liquid Sensing Based on Fiber Optic Mach-Zehnder Interferometer*

Nur Fazeera Hani Zailani and Norazlina Saidin (International Islamic University Malaysia, Malaysia); Muhammad Farid Mohd Rusdi (Faculty of Engineering, University of Malaya, Kuala Lumpur, Malaysia); Sulaiman Wadi Harun (Uni Malaya, Malaysia); Punithavathi Thirunavakkarasu (Universiti Kuala Lumpur British Malaysia Institute, Malaysia)  
pp. 100-103

### 11:50 *Structural and Optical Properties Investigation of Graphene oxide coated ZnO nanorods for Enhanced Photocatalytic Effect*

Aini Ayunni Mohd Raub and Jumril Yunas (Universiti Kebangsaan Malaysia, Malaysia); Mohd Ambri Mohamed (Universiti Kebangsaan Malaysia (UKM), Malaysia); Syed Jamal Ahmed Kazmi and Jaenudin Ridwan (Universiti Kebangsaan Malaysia, Malaysia)  
pp. 104-107

### 12:05 *Hydrothermal Grow of Cu doped ZnO Nanorods for Large Spectrum Photocatalyst*

Jaenudin Ridwan, Jumril Yunas, Akrajas Ali Umar and Aini Ayunni Mohd Raub (Universiti Kebangsaan Malaysia, Malaysia)  
pp. 108-111

### 12:20 *An Investigation on NiO for Hole Transport Material in Perovskite Solar Cells*

Subathra Muniandy (University of Technical Malaysia Melaka, Malaysia); Muhammad Idzdihar Bin Idris (FKEKK, Universiti Teknikal Malaysia Melaka, Malaysia); Zul Atfyi Fauzan Mohammed Napiah (Universiti Teknikal Malaysia Melaka (UTeM) & Centre for Telecommunication Research & Innovation (CeTRI), Malaysia); Haziezol Helmi Mohd Yusof (Universiti Teknikal Malaysia Melaka, Malaysia); Siti Amaniah Mohd Chachuli (Universiti Teknikal Malaysia Melaka, Malaysia); Marzaini Rashid (School of Physics, Malaysia)  
pp. 112-115

**12:35 Performance Analysis of MoS<sub>2</sub>/h-BN/Graphene Photodetector: A Numerical Modelling Approach**

Umahwathy Sundararaju (Universiti Kebangsaan Malaysia, Malaysia); Muhammad Aniq Shazni Mohammad Haniff (Insitute of Microengineering and Nanoelectronics, Universiti Kebangsaan Malaysia, Malaysia); P. Susthitha Menon (Universiti Kebangsaan Malaysia & Institute of Microengineering and Nanoelectronics (IMEN), Malaysia)  
pp. 116-119

**Tuesday, August 3 2021 14:00 - 15:50**

**2B: Modelling, Simulation & Sensors**

Room: IEEE-RSM-WEBEX

**Chair:** Nurul Ezaila Alias (Universiti Teknologi Malaysia, Malaysia)

**14:00 Modeling and optimization of ISFET microsensor for the use of quality testing in food and pharmaceutical industry (invited)**

Chi Ye Tiong (Universiti Malaya, Malaysia); Sharifah Fatmadiana Wan Muhamad Hatta and Norhayati Soin (University of Malaya, Malaysia); Aznida Abu Bakar Sajak (Universiti Kuala Lumpur, Malaysia & University of Liverpool, United Kingdom (Great Britain))  
pp. 120-123

**14:20 Effect of Excitation Parameters on Fluxgate Sensing Element Response**

Mohamed Elsayed Elkattan (Nuclear Materials Authority, Egypt); Hassan Mostafa (University of Toronto, Canada); Ahmed Khalil (Cairo University, Egypt)  
pp. 124-128

**14:35 Enhancement of Performance for an SOI SiGe HBT with Si<sub>1-y</sub>Ge<sub>y</sub> Collector**

Kong Senlin and Guanyu Wang (Chongqing University of Posts and Telecommunications, China)  
pp. 129-132

**14:50 Effect of interdigital electrode material on the performance of an electrochemically Reduced Graphene Oxide chemiresistive humidity sensor**

Muhammad Haziq Bin Ilias (Universiti Teknologi MARA, Malaysia); Norhazlin Khairudin (Universiti Teknologi Mara); Muhammad Zamharir Ahmad (Malaysian Agricultural Research & Development Institute & MARDI, Malaysia); Azrif Manut (Universiti Teknologi MARA & College of Engineering, Malaysia); Maizatul Zolkapli, Rozina Abdul Rani and Ahmad Sabirin Zoolfakar (Universiti Teknologi MARA, Malaysia); Majid Nour (King Abdulaziz University, Saudi Arabia)  
pp. 133-136

**15:05 Simulation of Geometrical Parameters of Screen Printed Electrode (SPE) for Electrochemical-Based Sensor**

Nurul Amira Farhana Roslan (International Islamic University Malaysia & Kulliyah of Engineering, Malaysia); Rosminazuin Ab Rahim, Aliza Aini Md Ralib, Nor Farahidah Za'bah, Anis Nurashikin Nordin and Mohd Saiful Riza Bashri (International Islamic University Malaysia, Malaysia); Muhammad Irsyad Suhaimi, Zambri Samsudin and Lai Ming Lim (Jabil Circuit Inc, Malaysia); Gandi Sugandi (Research Center for Electronics and Telecommunications (PPET), LIPI, Indonesia)  
pp. 137-140

**15:20 Optimization of Symmetric Inductor Parameter for a High Q-factor Inductor for Wireless Application**

Nor Azirah Binti Hashim, Nazuhusna Khalid, Nurul Izza Mohd Nor, Shahrir Rizal Kasjoo and Zaliman Sauli (Universiti Malaysia Perlis, Malaysia)  
pp. 141-144

**15:35 A study of repeatability and reproducibility of amperometric sensor based on BOBzBT2 pentamer for creatinine detection**

Auni Afrina Muhammad Azlan Lim and Asilah Aisyah Mohamad Yusoff (The National University of Malaysia & Institute of Microengineering and Nanoelectronics, Malaysia); Muhammad Asif A. Khushaini (The National University of Malaysia, Malaysia); Ahmad Ghadafi Ismail and Tengku Hasnan Tengku Abdul Aziz (Universiti Kebangsaan Malaysia, Malaysia); Ahmad Rifqi Md Zain (Institute of Microengineering and Nanoelectronics (IMEN), UKM, Malaysia)  
pp. 145-148

**Tuesday, August 3 2021 16:00 - 17:50**

**2C: VLSI Design, MEMS & Nanoelectronics**

Room: IEEE-RSM-WEBEX

**Chair:** Nafarizal Nayan (Universiti Tun Hussein Onn Malaysia & Microelectronic and Nanotechnology - Shamsuddin Research Centre (MiNT-SRC), Malaysia)

**16:00 The Influence of Growth Method Towards Carbon Nanotube Field Effect Transistor Performance (invited)**

Iskandar Yahya (Universiti Kebangsaan Malaysia, Malaysia); Muhamad Azuddin Hassan (UKM, Malaysia); Seri Mastura Mustaza and Huda Binti Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Steven Clowes and S. Ravi P Silva (University of Surrey, United Kingdom (Great Britain))  
pp. 149-152

**16:20 A 2 Kbit Memory Array of Mixed-V<sub>T</sub> 3T GC-eDRAM Implemented in 130nm Standard CMOS Technology**

Hussien Abdelrauf Hussien Abdo (Technische Universität Kaiserslautern, Germany); Nurul Ezaila Alias, Afiq Hamzah, Izam Kamisian, Michael Loong Peng Tan and Usman Ullah Sheikh (Universiti Teknologi Malaysia, Malaysia)  
pp. 153-156

**16:35 Performance Analysis of VOCs Detection using Polyisobutylene and Chitosan Overlayed on QCM Sensor**

Nurul Liyana binti Lukman Hekiem, Aliza Aini Md Ralib, Maziati Akmal Mohd Hatta, Farah B. Ahmad, Rosminazuin Ab Rahim and Nor Farahidah Za'bah (International Islamic University Malaysia, Malaysia)  
pp. 157-160

**16:50 Beam parameters optimization of MEMS piezoresistive accelerometer by using response surface method**

Norliana Yusof (Universiti Kebangsaan Malaysia & Universiti Sultan Zainal Abidin, Malaysia); Badariah Bais (Universiti Kebangsaan Malaysia, Malaysia); Norhayati Soin (University of Malaya, Malaysia); Burhanuddin Yeop Majlis (Universiti Kebangsaan Malaysia, Malaysia)  
pp. 161-164

**17:05 Gain Enhancement techniques of 0.13 $\mu$ m CMOS Low Noise Amplifier**

Maizan Muhamad, Hanim Hussin, Nabila Husna Mohammad Amin and Jamilah Karim (Universiti Teknologi MARA, Malaysia); Ahmad Farhan (UiTM, Malaysia)  
pp. 165-168

**17:20 Effect of Channel Length on Single Walled Carbon Nanotubes Thin Film Characteristics Deposited via Spray Coating Technique**

Muhamad Azuddin Hassan (UKM, Malaysia); Mohd Ambri Mohamed (Universiti Kebangsaan Malaysia (UKM), Malaysia); Huda Binti Abdullah and Iskandar Yahya (Universiti Kebangsaan Malaysia, Malaysia)  
pp. 169-172



**17:35 *Simulation of various cylindrical size and inlet velocity affect the laminar flow in microchannel***

Ahmad Arsyad Mohd Noordin (University Teknologi Mara (UITM), Malaysia); Norhafizah Burham (Universiti Teknologi Mara, Malaysia); Marianah Masrie (Universiti Teknologi MARA, Malaysia & College of Engineering, Malaysia); Tuan Norjihan Tuan Yaakub (Universiti Teknologi Mara, Malaysia)  
pp. 173-176

**Tuesday, August 3 2021 17:50 - 18:15**

**Closing Ceremony**