



**FAKULTI : FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN, UTM**  
**TAJUK : PELANTIKAN PANEL PEMERIKSA BAHARU TESIS SARJANA – MUHAMMAD RAIHAN BIN ABDUL KADIR**

BUTIRAN PELAJAR	KETERANGAN PELAJAR	ULASAN DAN TINDAKAN FAKULTI	KELULUSAN																											
<p><b>NAMA : MUHAMMAD RAIHAN BIN ABDUL KADIR</b></p> <p><b>NO K/P @ ISID : 920831015361</b></p> <p><b>NO MATRIK : MMB153008</b></p> <p><b>PROGRAM : SARJANA FALSAFAH (KEJURUTERAAN BIOPERUBATAN)</b></p> <p><b>JENIS PENGAJIAN : PENYELIDIKAN</b></p> <p><b>BENTUK PENDAFTARAN : SEPENUH MASA</b></p> <p><b>PENYELIA : DR. DYAH EKASHANTI OCTORINA DEWI</b></p> <p><b>PENYELIA BERSAMA : DR. MOHAMED SULTAN MOHAMED ALI</b></p> <p><b>BIL SEM: 6/8</b></p> <p><b>STATUS : VIVA</b></p> <p><b>MUKASURAT : 1/1</b></p> <p><b>TAJUK TESIS : SHAPE MEMORY ALLOY-BASED ENDOSCOPIC SURGICAL INSTRUMENT</b></p>	<p>1.1 Notis Hantar Tesis pelajar telah diperakukan pada Mesyuarat JAPSU pada 26 Disember 2017.</p> <table border="1" data-bbox="573 469 1133 635"> <thead> <tr> <th>Bil</th> <th>Nama Calon Pemeriksa Dalam</th> <th>Perakuan Fakulti</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Prof. Madya Dr. Kahar bin Osman</td> <td>Dilantik</td> </tr> <tr> <td>2</td> <td>Dr. Yeong Che Fai</td> <td>Gantian</td> </tr> </tbody> </table> <table border="1" data-bbox="573 663 1133 842"> <thead> <tr> <th>Bil</th> <th>Nama Calon Pemeriksa Luar</th> <th>Perakuan Fakulti</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Prof. Madya Dr. Hanafiah bin Yusoff (UiTM)</td> <td>Dilantik</td> </tr> <tr> <td>2</td> <td>Dr. Asnor Juraiza binti Dato. Hj Ishak</td> <td>Gantian</td> </tr> </tbody> </table> <p>1.2 Pelajar telah menghantar tesis ke fakulti pada 31/1/2018 . Namun begitu calon pemeriksa luar yang dilantik tidak memberi sebarang respon persetujuan bagi menjadi panel pemeriksa. Manakala pemeriksa luar gantian bersetuju namun perlu mengambil tempoh masa yang lama kerana beliau sedang menilai beberapa tesis untuk dibaca.</p>	Bil	Nama Calon Pemeriksa Dalam	Perakuan Fakulti	1	Prof. Madya Dr. Kahar bin Osman	Dilantik	2	Dr. Yeong Che Fai	Gantian	Bil	Nama Calon Pemeriksa Luar	Perakuan Fakulti	1	Prof. Madya Dr. Hanafiah bin Yusoff (UiTM)	Dilantik	2	Dr. Asnor Juraiza binti Dato. Hj Ishak	Gantian	<p>1.1 Justifikasi pelantikan pemeriksa baharu adalah seperti berikut:</p> <ul style="list-style-type: none"> <li>i. Prof. Madya Dr. Nafarizal Nayan (UM)</li> <li>ii. Prof. Madya Dr. Ismail Saad (UMS)</li> <li>iii. Dr Najib Ribuan (UTHM)</li> </ul> <p><b>PROF. DATO' IR. DR. MOHAMMED RATIO DATO' ABDUL KADIR</b>  Dekan/ID. (Akademik)  &amp; Cop Rasmi</p> <p>1.2 Mesyuarat Jawatankuasa Akademik Fakulti (JKA) pada 18 April 2018 telah meluluskan nama panel pemeriksa luar yang baharu seperti berikut :</p> <table border="1" data-bbox="1178 668 1738 919"> <thead> <tr> <th>Bil</th> <th>Nama Calon Pemeriksa Luar</th> <th>Perakuan Fakulti</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Prof. Madya Dr. Nafarizal Nayan (UM)</td> <td>Dilantik</td> </tr> <tr> <td>2</td> <td>Prof. Madya Dr. Ismail Saad (UMS)</td> <td>Gantian</td> </tr> </tbody> </table> <p>1.3 Dokumen seperti dilampiran , CV dan cabutan minit Mesyuarat Jawatankuasa Akademik Fakulti (JKA) adalah seperti di lampiran.</p>	Bil	Nama Calon Pemeriksa Luar	Perakuan Fakulti	1	Prof. Madya Dr. Nafarizal Nayan (UM)	Dilantik	2	Prof. Madya Dr. Ismail Saad (UMS)	Gantian	<p>Disokong / Tidak disokong</p> <p align="center"></p> <p align="center"><b>DR. MOHAMMED RATIO DATO' ABDUL KADIR</b>  Dekan/ID. (Akademik)  &amp; Cop Rasmi</p> <p align="center">Fakulti Biosains dan Kejuruteraan Perubatan  Universiti Teknologi Malaysia  81310 UTM Johor Bahru  Tarikh : 19/04/2018</p> <p>Setuju / Tidak Setuju (Ulasan)</p> <p align="center"></p> <p align="center"><b>PROFESOR DR. ZAIDATUN TASIR</b>  Dekan  Sekolah Pengajian Siswazah  Universiti Teknologi Malaysia  81310 UTM Johor Bahru, Johor</p> <p align="center"><b>Pengerusi Mesyuarat Jawatankuasa Akademik Pengajian Siswazah Universiti (JAPSU) &amp; Cop Rasmi</b></p> <p>Tarikh : _____</p>
Bil	Nama Calon Pemeriksa Dalam	Perakuan Fakulti																												
1	Prof. Madya Dr. Kahar bin Osman	Dilantik																												
2	Dr. Yeong Che Fai	Gantian																												
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1	Prof. Madya Dr. Nafarizal Nayan (UM)	Dilantik																												
2	Prof. Madya Dr. Ismail Saad (UMS)	Gantian																												



**CABUTAN MINIT MESYUARAT JAWATANKUASA AKADEMIK  
FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN**

**Tarikh** : 17 April 2018 (Selasa)  
**Masa** : 2.30 Petang  
**Tempat** : Bilik Mesyuarat Dekan  
Fakulti Biosains dan Kejuruteraan Perubatan

**PASCA-SISWAZAH**

<b>BIL.</b>	<b>PERKARA</b>	<b>TINDAKAN/MAKLUMAN</b>
1.0	<p><b>PELANTIKAN PANEL PEMERIKSA BAHARU TESIS SARJANA - MUHAMMAD RAIHAN BIN ABDUL KADIR</b></p> <p>1.1 Ahli mesyuarat telah menelitiketerangan pelajar dan ahli mesyuarat telah meluluskan pelantikan pemeriksa baharu seperti berikut:-</p> <ul style="list-style-type: none"><li>• Prof. Madya Dr. Nafarizal Nayan (UM)</li><li>• Prof. Madya Dr. Ismail Saad (UMS)</li></ul>	Norhalisa



Perakuan Pemeriksa Tesis  
Certificate of Thesis Examiners

SEKOLAH PENGAJIAN SISWAZAH  
SCHOOL OF GRADUATE STUDIES

BIL: 3/2017/2018 TARIKH: 16 NOVEMBER 2017

Nama Pelajar Student Name	Pemeriksa Examiner		Perakuan Fakulti Faculty Certificate		Pengerusi Viva Viva Chairman
	Calon PD IE Candidates	Calon PL EE Candidates	PD IE	PL EE	
<b>STUDENT NAME</b> MUHAMMAD RAIHAN BIN ABDUL KADIR  <b>FACULTY</b> FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN  <b>MATRIC NO. &amp; IC            NO.</b> MMB153008 / 920831015361  <b>SUPERVISOR            NAME</b>  1. DR DYAH EKASHANTI OCTORINA DEWI (PENYELIA UTAMA)  2. IR. DR. MOHAMED SULTAN BIN MOHAMED ALI (BERSAMA)   <b>TITLE OF            RESEARCH</b> SHAPE MEMORY ALLOY-BASED ENDOSCOPIC SURGICAL INSTRUMENT	PROF. MADYA DR. AZLI BIN YAHYA (FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN)  DR. FAUZAN KHAIRI BIN CHE HARUN (CANSELERI)  DR YEONG CHE FAI (FAKULTI KEJURUTERAAN ELEKTRIK)  PROF. MADYA. DR KAHAR BIN OSMAN (FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN)	PROF. DR. TATI LATIFAH ERAWATI RAJAB MENGKO (INSTITUT TEKNOLOGI BANDUNG)  DR. ASNOR JURAIZA BT DATO HJ ISHAK (UPM)  PROF. MADYA DR. HANAFIAH BIN YUSSOF (UNIVERSITI TEKNOLOGI MARA (UITM))	(RECOMMENDED I) PROF. MADYA. DR KAHAR BIN OSMAN (FAKULTI BIOSAINS DAN KEJURUTERAAN PERUBATAN) <b>REMARKS :</b>  (SUBSTITUTE RECOMMENDED) DR YEONG CHE FAI (FAKULTI KEJURUTERAAN ELEKTRIK) <b>REMARKS :</b>	(RECOMMENDED I) PROF. MADYA DR. HANAFIAH BIN YUSSOF (UNIVERSITI TEKNOLOGI MARA (UITM)) <b>REMARKS :</b>  (SUBSTITUTE RECOMMENDED) DR. ASNOR JURAIZA BT DATO HJ ISHAK (UPM) <b>REMARKS :</b>	<b>CHAIRMAN</b> PROF.MADYA.DR NAZMIN SULTANA   <b>SUBSTITUTE</b> PROF. MADYA DR. TAN TIAN SWEE  <b>CHAIRPERSON</b> <b>ASSISTANT</b> DR. JAYSUMAN BIN PUSPPANATHAN

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## CURRICULUM VITAE

**Name** : ASSOC. PROF. DR. ISMAIL SAAD

**Date of Birth** : 06 December 1974

**I.C. No.** : 741206-12-5561

**Home Address** : 40, Lorong 6/3A,  
Taman Bukit Sepanggar,  
88450, Telipok, Kota Kinabalu, Sabah  
H/P: 016-8047166

**Correspondence Address** : Electrical & Electronics Engineering Program,  
School of Engineering & IT,  
Universiti Malaysia Sabah, Jalan UMS,  
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**e-mail's** : [ismail\\_s@ums.edu.my](mailto:ismail_s@ums.edu.my); [ismailsaad07@gmail.com](mailto:ismailsaad07@gmail.com); [ismail\\_saad03@yahoo.com](mailto:ismail_saad03@yahoo.com)

**blog's** : <http://ismailsaad.wordpress.com/>  
(Detail about me & my career life)

: <http://nicerig.wordpress.com/>  
(NanoEngineering & Materials Research group - NEMs)

## Academic Qualifications

15 August 2009 **Doctor of Philosophy (Electrical Engineering)**, Faculty of Electrical Engineering, Universiti Teknologi Malaysia (UTM).

11 February 2002 **MSc. in Microelectronics System Design**, School of Electronics and Computer Science, University of Southampton, UK.

23 August 1999 **BEng (Electronics/Computer)**, Faculty of Electrical Engineering, Universiti Putra Malaysia (UPM).

## Professional Affiliation

2002 – present Graduate Member Board of Engineers Malaysia (BEM).

2010 – present Graduate Member Institute of Engineers Malaysia (IEM).

2007 – present Member The Institute of Electrical & Electronics Engineers (IEEE) (No. 90269234).

2007 – present Life Member The Malaysian Solid State Science & Technology Society (MASS) (No. 258).

## Awards &amp; Recognitions

**Research & Innovation Awards**

- November 2014      **Bronze medal award** of BioInnovation Awards 2014 for project title "Real-time Myogram Controller for Nominal Appliance Switching (MyoSwitch)", [Project Leader].
- November 2014      **Bronze medal award** of BioInnovation Awards 2014 for project title "Burnt Oil Palm Shell (BOPS) and River Sand as Filtration Media for Green Stormwater Pavement", [Researcher].
- November 2014      **Bronze medal award** of BioInnovation Awards 2014 for project title "Dual Channel EMG Signal for Multi-Directional Maneuver System (MyoCar)", [Researcher].
- October 2014        **Gold Medal Award** of Research and Innovation Competition (PEREKA 2014) Universiti Malaysia Sabah for Innovation project title "Agility Test Kit System for Fitness Measurement", [Project Leader].
- September 2013     **Gold Medal Award** of Research and Innovation Competition (PEREKA 2014) Universiti Malaysia Sabah for Innovation project title "Electromyogram Signal for Cart Control", [Researcher].
- September 2013     **Gold Medal Award** of Research and Innovation Competition (PEREKA 2014) Universiti Malaysia Sabah for Innovation project title "Myogram ON/OFF Controller", [Researcher].
- February 2012       **Silver medal award** of Malaysia Technology Expo 2012 (MTE2012) for project title "Portable Power Output Optimizer for PV Modules", [Researcher].
- February 2012       **Bronze medal award** of Malaysia Technology Expo 2012 (MTE2012) for project title "Intelligent Online Programmer for Traffic Light System", [Researcher].
- May 2012            **Gold medal award** Research and Innovation Competition (PEREKA 2012) Universiti Malaysia Sabah for project title "Innovative University Transportation Multifunctional Support System via RFID Sensor Network", [Researcher].
- May 2012            **Gold medal award** Research and Innovation Competition (PEREKA 2012) Universiti Malaysia Sabah for project title "Organic Semiconductor Transistor for NanoMemory Application", [Researcher].
- May 2012            **Silver medal award** Research and Innovation Competition (PEREKA 2012) Universiti Malaysia Sabah for project title "An Innovative Advanced Driver Assistance System (ADAS) via Machine Vision in Passenger Vehicle Blind Spot Detection", [Researcher].
- June 2011            **Gold Medal Award** of Research and Innovation Competition (PEREKA 2011) Universiti Malaysia Sabah for project title "Custom Made RISC16 Processor Core Design Through ASIC Methodology", [Project Leader].
- June 2011            **Silver Medal Award** of Research and Innovation Competition (PEREKA2011), UMS, Optimized Roof Design and Isopleth Maps for Sabah", [Researcher].

- April 2010      **Silver Medal Award** of Research and Innovation Competition (PEREKA 2010) Universiti Malaysia Sabah for project title "New Physics-Based Nanomodelling of Ballistic Transport Phenomenon of NanoMosfet", [Project Leader].
- April 2010      **Bronze medal award** of Research and Innovation Competition (PEREKA 2010), Universiti Malaysia Sabah for project title "Design of an enhanced performance of vertical double-gate MOSFET (VDGM) using Oblique Rotating Implantation (ORI) Method", [Project Leader].

#### Academic Excellent Recognitions

- 15<sup>th</sup> May 2014      **Commendable Service Award** (Anugerah Perkhidmatan Terpuji) Year 2013, School of Engineering & IT, Universiti Malaysia Sabah.
- 16<sup>th</sup> May 2013      **Commendable Service Award** (Anugerah Perkhidmatan Terpuji) Year 2012, School of Engineering & IT, Universiti Malaysia Sabah.
- 24<sup>th</sup> June 2011      **Commendable Service Award** (Anugerah Perkhidmatan Terpuji) Year 2010, School of Engineering & IT, Universiti Malaysia Sabah.
- 24<sup>th</sup> May 2012      **Commendable Service Award** (Anugerah Perkhidmatan Terpuji) Year 2011, School of Engineering & IT, Universiti Malaysia Sabah.
- 24<sup>th</sup> May 2012      **Dedication Service Award** (Anugerah Jasa Bakti) (10 tahun bersama UMS), School of Engineering & IT, Universiti Malaysia Sabah.
- August 2009      **Best Student Award** based on Excellent Academic Achievements in the Electrical Engineering Doctoral (Ph.D) programme. 43rd Universiti Teknologi Malaysia (UTM) Convocation Ceremony.
- August 2009      **Canselor Award** Universiti Teknologi Malaysia (UTM) based on Excellent Academic Achievements in the Electrical Engineering Doctoral (Ph.D) programme. 43rd Universiti Teknologi Malaysia (UTM) Convocation Caremony.
- May 2008      **Winner of published International Journal** paper 2007 during UTM Recognition Ceremony 2007. Paper cited was : Vijay K. Arora, Michael L. P. Tan, Ismail Saad and Razali Ismail, "Ballistic quantum transport in a nanoscale metal-oxide-semiconductor field effect transistor", Applied Physics Letters, Vol. 91, No.10 (Impact Factor 3.977).
- November 2007      **Best Poster Award** in the 23rd Regional Conference on Solid State Science and Technology 2007, 27-29 Nov 2007(RCSSST2007), Paper Title : Zul Atfyi Fauzan M. N., Ismail Saad and Razali Ismail, "Scaling and Numerical Simulation Analysis of 50 nm MOSFET Incorporating Dielectric Pocket (DPMOSFET)"
- December 2007      **Best Student Paper Award** in the 2007 IEEE Regional Symposium on Microelectronics, 3-6 Dec 2007 (RSM2007), Paper Title: Zul Atfyi Fauzan M. N., Ismail Saad and Razali Ismail, "Process and Characterization of MOSFET Incorporating Dielectric Pocket (DP-MOSFET) Using TCAD Tools".

- December 2007 **Best Paper Presentation Award** in the 2007 IEEE Regional Symposium on Microelectronics, 3-6 Dec 2007 (RSM2007), Paper Title: Ismail Saad, Ing Hui Hii, Aaron Chii Enn Lee, Hui Hong Lau, Razali Ismail and Vijay K. Arora. "The Circuit Design Beyond Ohm's Law: Applications To Series, Parallel, And CMOS Configurations".
- June 2006 **Ph.D Scholarship Award** of SLAB (Sistem Latihan Akademik Bumiputera) by Ministry of Higher Education, Malaysia at UTM, Johor Bahru.
- 2000 **Master of Science Scholarship Award** of SLAB (Sistem Latihan Akademik Bumiputera) by Ministry of Higher Education, Malaysia at University of Southampton, UK.
- May 1997 **Dean List award** Bachelor of Engineering (Electronics/Computer), UPM.
- 1995 **Special Promotion Award** to Bachelor of Engineering (Electronics/Computer), UPM.

### Professional Experience

#### Working Experience

- October 2013 – present **Associate Professor**, Electrical & Electronics Engineering Program, Faculty of Engineering, Universiti Malaysia Sabah (UMS).
- Sept 2014 – Sept. 2016 **Head of Artificial Intelligence Research Unit (AiRU)**, School of Engineering & IT, Universiti Malaysia Sabah (UMS).
- Sept 2012 – Aug. 2014 **Head of Artificial Intelligence Research Unit (AiRU)**, School of Engineering & IT, Universiti Malaysia Sabah (UMS).
- 2011 – 2013 **Coordinator** of Ministry of Higher Education (MOHE) Guided IC Design Industrial Training Program, School of Engineering & IT, UMS
- 2009 – 2010 **Senior Lecturer**, Electrical & Electronics Engineering Program, School of Engineering & IT, Universiti Malaysia Sabah (UMS).
- July 2011 – June 2012 **Program Head (Business & Innovation)**, Centre of Co-curriculum & Student Development (PKPP), UMS
- 2002 – 2008 **Lecturer**, Electrical & Electronics Engineering Program, School of Engineering & IT, UMS.
- July 2003 – July 2005 **Program Head** of Electrical & Electronics Engineering Program, School of Engineering & IT, UMS

#### Leadership & Consultancy

#### Research & Industry Leadership

- 05<sup>th</sup> Sept. 2014      **Internal Evaluator Panel** Dana Penyelidikan Research Acculturation Collaborative Effort (RACE) 2014, Universiti Malaysia Sabah.
- 31<sup>st</sup> March 2014      **Internal Evaluator Panel** Fundamental Research Grant Scheme (FRGS2014-Fasa 1), Universiti Malaysia Sabah.
- 12<sup>th</sup> Sept. 2014      **Internal Evaluator Panel** Research Acculturation Grant Scheme (RAGS2014), Universiti Malaysia Sabah.
- 21<sup>st</sup> August 2014      **Internal Evaluator Panel** Fundamental Research Grant Scheme (FRGS2014-Fasa 2), Universiti Malaysia Sabah.
- 02<sup>nd</sup> May 2014      **Internal Evaluator Panel** Transdisciplinary Research Grant Scheme (TRGS 2014), Universiti Malaysia Sabah.
- 24<sup>th</sup> April 2014      **UMS Grant Evaluation Panel** for Engineering & Technology Cluster.
- 12<sup>th</sup> April 2013      **UMS Evaluation Panel** for Fundamental Research Grant Scheme (FRGS) and Research Acculturation Grant Scheme (RAGS).
- 18<sup>th</sup> – 21<sup>st</sup> February 2013      **e-Science Fund Project Leader Collaboration Visit** to Institute of Nano Electronics Engineering (INEE), Universiti Malaysia Perlis (UniMap).
- 2013 – 2015      **Panel Evaluation Member** of Universiti Malaysia Sabah Research Grant Application for Engineering & Technology and ICT Cluster.
- 1<sup>st</sup> November 2012      **Appointed as TCAD Application Consultant** for Trans-Dist Engineering Sdn Bhd, Putrajaya, Kuala Lumpur.
- 12<sup>th</sup> – 17<sup>th</sup> July 2012      **Universiti Malaysia Sabah Team Manager** of National ROBOCON 2012 Competition.
- 21<sup>st</sup> – 22<sup>nd</sup> June 2007      **Collaboration Visiting Academic** to Nanyang Technological University (NTU) and National University of Singapore (NUS).
- 26<sup>th</sup> – 27<sup>th</sup> March 2012      **Collaboration Visiting Academic** to Faculty of Electrical Engineering, Universiti Teknologi Malaysia, UTM, Skudai, JB.
- 2012      **Panel Member** of Fundamental Research Grant Scheme (FRGS2012) Proposal Evaluation Committee for Technology & Engineering Cluster, Universiti Malaysia Sabah.
- February 2012      **Session Chairman** of 3rd International Conference on Intelligent systems, Modelling and Simulation, (ISMS2012).
- July 2011      **Session Chairman** of 3<sup>rd</sup> IEEE International Conference on Computational Intelligence, Communication Systems & Networks, (CICSyN2011).
- 2011      **Panel Member** of Fundamental Research Grant Scheme (FRGS2011) Proposal Evaluation Committee for Technology & Engineering Cluster, Universiti Malaysia Sabah.

- 5<sup>th</sup> – 7<sup>th</sup> May 2011      **Collaboration Visiting Academic Advisor** to XFab Semiconductor Industries Sdn Bhd and Universiti Malaysia Sarawak (UniMAS), Kuching Sarawak.
- 7<sup>th</sup> May 2010      **Collaboration Visiting Academic Advisor** to XFab Semiconductor Industries Sdn Bhd and Universiti Malaysia Sarawak (UniMAS), Kuching Sarawak.
- June 2010      **Session Chairman** of IEEE International Conference On Semiconductor Electronics (ICSE 2010), Melaka, Malaysia.
- May 2010      **Session Chairman** of 4<sup>th</sup> IEEE Asia International Conference on Analytical Modeling & Computer Simulation (Asia Modeling Symposium 2010) (AMS2010).
- 28<sup>th</sup> February 2009      **Collaboration Visiting Academic** to Silterra Malaysia Sdn. Bhd and Fuji Electric (Malaysia) Sdn, Bhd.
- 12<sup>th</sup> July 2008      **Panel Member** of IC Didik program by ICMIC Microsystem Sdn Bhd, Putrajaya, Kuala Lumpur.
- 23<sup>rd</sup> – 27<sup>th</sup> August 2007      **Collaboration Visiting Academic** to Universiti Malaysia Perlis (UniMap).
- 13<sup>th</sup> March 2007      **Collaboration Visiting Academic and Collaboration presentation** to MIMOS Berhad (*Numerical Simulation Analysis of CMOS compatible process of sub-50nm Vertical Double gate (VDGM)*).
- 14<sup>th</sup> May 2007      **Collaboration Research Presentation** (*Design & Simulation of Nanoscale Vertical MOSFET*) of visiting Professor (Prof. Dr. Zhou Xing from NTU, Singapore) to UTM.
- 23<sup>th</sup> November 2007      **Collaboration Visiting Academic** to Institute of Microengineering and Nanoelectronics (IMEN), UKM, Malaysia.
- 23<sup>rd</sup> August 2006      **Collaboration Visiting Academic** to MIMOS Berhad & Telekom Malaysia (TM) R&D Department.
- 29<sup>th</sup> March – 4<sup>th</sup> Apr. 2006      **Trainers & Syllabus Developer** of M&E Technical Training For Nexus Karambunai Employee, (Maintenance Management, Air-Conditioning & Boiler, Internal Combustion Engine, Maintenance Of Mechanical Equipment, Basic Electrical, Electrical Power, Electrical Motor, Basic Electronic, Control System, Safety In Workplace).

#### Academic Excellent Development

- 24<sup>th</sup> Sept. 2014      **Panel Advisor member** of Electrical Engineering Department program, Politeknik Kota Kinabalu, Kementerian Pendidikan Malaysia.
- 24<sup>th</sup> May 2014      **Head of Evaluators** (Mechanical & Electrical), Sabah Invention & Design Exhibition (SINDEX2014), Kota Kinabalu, Sabah.

- 11<sup>th</sup> Oct. 2014 **Evaluator Panel** Arduino Robot Challenge & Exhibition (ROBONEO 2014), Robo Go Green, 11- 12 October 2014, Suria Sabah Shopping Mall, Kota Kinabalu, Sabah.
- 14<sup>th</sup> April 2013 **Invited Jury** for Innovation Competition, Voktek Carnival Sabah & WP Labuan Zone (Sekolah Menengah Teknik Likas, Kota Kinabalu).
- 14<sup>th</sup> Nov. 2012 **Invited Lecturer** for Soft Skill Centralize Lecture, Centre for Co-Curriculum & Student Development, UMS.
- 30<sup>th</sup> Nov. 2012 **Invited Evaluation Panel Member** for Student Assessment Center 2012 by Public Service Department (JPA), Malaysia.
- 8<sup>th</sup> Sept. 2012 **Chief Evaluation Panel** for Sabah Invention & Design Exhibition (SINDEX2012) Grand Finale.
- 21<sup>st</sup> March 2012 **Panel Member** of Ph.D Viva Voce (PK20078380), Universiti Malaysia Sabah.
- 19<sup>th</sup> – 20<sup>th</sup> Sept. 2012 **Electrical & Electronics Engineering Program Escorting Officer** for Engineering Accreditation Councils (EAC) Evaluation Panels, School of Engineering & IT, UMS.
- 13<sup>th</sup> Feb. 2012 **Invited Lecturer** External UMS Centre (PLUMS) in Labuan for Electronic & Microprocessor Subject.
- January 2012 **Invited Lecturer** of Bridging Programme Modul for Science Laboratory Assistance subject *Basic Electrical*.
- 2011 - 2012 **Member** of Postgraduate Committee School of Engineering & IT, UMS.
- 2011 - 2012 **Member** of External Relations & Student Affair Committee School of Engineering & IT, UMS.
- 2011 **Panel Member** of UMS Asset Disposal Evaluation Committee.
- 13<sup>th</sup> – 18<sup>th</sup> June 2011 **Universiti Malaysia Sabah Team Manager** of National ROBOCON 2011 Competition.
- 14<sup>th</sup> -15<sup>th</sup> September 2011 **Universiti Malaysia Sabah Team Manager** of National IEEE Freescale 2011 Smart Car Competition.
- 2011 **Interviewer Panel** for 2011 Oversea Scholarship Degree Program (PILN) Evaluation Committee, Public Service Department (JPA), Malaysia.
- 22<sup>nd</sup> – 27<sup>th</sup> June 2010 **Universiti Malaysia Sabah Team Manager** of National ROBOCON 2010 Competition.
- 2010 **Interviewer Panel** for 2011 Oversea Scholarship Degree Program (PILN) Evaluation Committee, Public Service Department (JPA), Malaysia.

- 22<sup>nd</sup> July 2010 **Panel Developer Member** of Bridging Programme Modul for Science Laboratory Assistance (*Basic Electrical & Electronics, Instrumentation Workshop*), Universiti Malaysia Sabah.
- 11<sup>th</sup> August 2009 **Panel Member** of Ph.D Viva Voce (PS02-008-540), Universiti Malaysia Sabah.
- 2009 **Invited Career Talk:** Excited World of BEE, PTPL College, Kota Kinabalu, Sabah.
- 2006 **Facilitator** for Open University Malaysia (OUM) Accreditation Evaluation Panels by LAN.
- 2004 **Head of Electrical & Electronics Engineering Program Engineering Accreditation Councils (EAC) Evaluation Panels**, School of Engineering & IT, UMS.
- 2000 **Felo** Kampung A College, Universiti Malaysia Sabah.
- 9<sup>th</sup> – 12<sup>th</sup> Sept. 1999 **Facilitator** for Academic Exhibition during UMS First Convocation Ceremony.
- 9<sup>th</sup> – 12<sup>th</sup> Sept. 1999 **Academic Escorting Officer** during UMS First Convocation Ceremony.
- 1999 **Felo** Jalan Tuaran Campus College, Universiti Malaysia Sabah.

#### International Journal & Conference Editor/Reviewer

- June 2011 **Guest Editor** International Journal of Simulation – Systems, Science and Technology (IJSST-V12, Volume 12, Number 3).
- June 2012 **Guest Editor** International Journal of Simulation – Systems, Science and Technology (IJSST-V13, Volume 13, Number 3A, 3B, 3C).
- Jan 2012 **Reviewer** of International Journal of IEEE Transaction on Electron Device (TED), paper title: "Two Dimensional Analytical Drain Current Model for Double Gate MOSFET Incorporating Dielectric Pocket (DP-DG)".
- February 2012 **Reviewer** of International Journal of Simulation – Systems, Science and Technology (IJSST-V13).
- October 2010 **Reviewer** of Microelectronic Journal, Elsevier, paper title: "Design and Performance Analysis of Cylindrical Surrounding Double-Gate MOSFET".
- March 2013 **Reviewer** of 15<sup>th</sup> IEEE International Conference on Modeling & Simulation (UKSIM2013).
- May 2010 **Reviewer** of International Journal of Simulation – Systems, Science and Technology (IJSST-V12).
- February 2013 **Reviewer** of 4<sup>th</sup> International Conference on Intelligent systems, Modelling and Simulation, (ISMS2013).

February 2012	Reviewer of 3rd International Conference on Intelligent systems, Modelling and Simulation, (ISMS2012).
May 2012	Reviewer of 6 <sup>th</sup> IEEE Asia International Conference on Analytical Modeling & Computer Simulation (Asia Modeling Symposium 2010) (AMS2012).
July 2012	Reviewer of 4 <sup>th</sup> IEEE International Conference on Computational Intelligence, Communication Systems & Networks, (CICSyN2012).
September 2012	Reviewer of 10 <sup>th</sup> IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2012).
March 2012	Reviewer of 14 <sup>th</sup> IEEE International Conference on Modeling & Simulation (UKSiM2012).
August 2012	Reviewer of 4 <sup>th</sup> IEEE International Conference on Computational Intelligence, Modeling & Simulation (CIMSIM012).
May 2011	Reviewer of 5 <sup>th</sup> IEEE Asia International Conference on Analytical Modeling & Computer Simulation (Asia Modeling Symposium 2010) (AMS2011).
July 2011	Reviewer of 3 <sup>rd</sup> IEEE International Conference on Computational Intelligence, Communication Systems & Networks, (CICSyN2011).
March 2011	Reviewer of 13 <sup>th</sup> IEEE International Conference on Modeling & Simulation (UKSiM2011).
August 2011	Reviewer of 3 <sup>rd</sup> IEEE International Conference on Computational Intelligence, Modeling & Simulation (CIMSIM011).
May 2010	Reviewer of 4 <sup>th</sup> IEEE Asia International Conference on Analytical Modeling & Computer Simulation (Asia Modeling Symposium 2010) (AMS2010).
July 2010	Reviewer of 2 <sup>nd</sup> IEEE International Conference on Computational Intelligence, Communication Systems & Networks, (CICSyN2010).

### Teaching & Supervision

#### Undergraduate Teaching

2009 – 2013	Electrical & Electronics Circuit, Microelectronics, VLSI Technology, Logic & Microelectronics Laboratory, Electronics & Microprocessor, VLSI Technology, Computer Architecture & Network, VLSI Design, Microprocessors, Computer Architecture & Microprocessors.
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- 2004 – 2006      Microelectronics, Computer Architecture, Microprocessors & Instrumentation, Electronics & Microprocessors, Digital Electronics & Communications, Digital Principles, VLSI Technology, Logic & Microelectronics Laboratory.
- 2001 – 2003      Physical Electronics, Measurement & Instrumentation, Electrical Technology, Engineering Mathematics, Digital System, Computer Architecture, Microprocessors & Instrumentation.

#### Undergraduate Supervision

- 2009 – 2012      *Siti Faezqan Noor Bt Mohamad Noor*, “Design & Simulation of Breakdown Voltage and the Temperature in the Reverse Characteristics of Zener Diode”, *Mohd Ahya Abdul Hadi*, “Design and Simulation of Advanced MOSFET using TCAD”, *Valario Nuvin*, “Design and Simulation of Nanodevice (Strained Si/SiGe) structure using TCAD”, *Siti Hahwani Binti Hamzah*, “Design and Simulation of Bipolar Junction Transistor (BJT) using TCAD”.
- 2002 – 2006      *Khairul Basrah Bin Parmin*, “Study of Designing the System Elements of Solar Energy Conversion Using Photovoltaic”, *Khairul Mohd Arshad*, “Electrical Analysis of NMOSFET for VLSI Application”, *Mohd Noorbisyam Nordin*, “Electrical Analysis of Vertical NPN BJT For VLSI Application”, *Shabrudin Jair*, “Threshold Voltage and Subthreshold Analysis of PMOSFET for VLSI Application”, *Khairunnizqa Bte Hasbin*, “Simulation of A Novel Lateral Bipolar Transistor on TFSOI (Device Simulation)”, *Sannoni Bte Mamat*, “Simulation of A Novel Lateral Bipolar Transistor on TFSOI (Process Simulation)”, *Soh Chee Chon*, “A 16-Bit RISC Microprocessor (Instruction Set Verification, Data Path Module and Random Number Application)”, *Wan Hoong Wai*, “A 16-Bit RISC Microprocessor with Verilog: Verification and Control Unit Design”, *Mohd Ebrahim Adanan*, “Fabrikasi Dan Pencirian Elektrik nMOS Dalam Aplikasi VLSI”.

#### Postgraduate Supervision

- 2010 – present      **Abu Bakar Bin Abd Rahman, PhD**, “Design and Analysis of Nanoscale Impact-Ionization MOSFET (I-MOS) Structure for Nanoelectronics Application”.
- 2012 – present      **Tang Zi Sheng, MEng**, “Nanofibers Fabrication via Electrospinning Process for Renewable Energy Application”.
- 2012 – present      **Chan Bun Seng, MEng**, “Development of Low Power and High Performance Nanoscale Vertical Impact Ionization MOSFET”.
- 2012 – 2014      **Mohd. Zuhir Hamzah, MEng**, “Design and Analysis of Nanoscale Impact-Ionization MOSFET (I-MOS) with Dielectric Pocket”.
- 2010 – 2013      **Kow Wei Yeang, MEng**, Thesis title: “Estimation of Microscopic Vehicle Motion with Markov Chain Monte Carlo”.
- 2010 – 2013      **Khong Wei Leong, MEng**, Thesis title: “Modeling and Estimation of Vehicle Tracking via Improved Particle Filter”.

- 2009 - 2011 Divya Pogaku Ravindra, MEng, Thesis title: "Design and Simulation of Vertical Strained SiGe Impact Ionization MOSFET (VESIMOS)".
- 2002 -2004 Abu Bakar Bin Abd Rahman, MEng, Thesis title: "Design and Optimization of RISC16 Microprocessor through ASIC Methodology".

#### Postgraduate Thesis Examiner

- February 2012 PhD Internal Examiner, Chee Fuei Pien (PS2008-8319) Universiti Malaysia Sabah, Thesis title: Effects of Total Dose Irradiation on Semiconductor Devices.
- July 2012 PhD External Examiner, Nirmal D, (Reg. No. 4081053119), Anna University of Technology, Coimbatore, India, Thesis title: Nanoscale Double Gate MOSFETs for Sub threshold Low Power Applications using High-K Dielectrics.
- November 2012 MEng Internal Examiner, Tan Min Keng (PK2010-8093) Universiti Malaysia Sabah, Thesis title: Evolutionary Algorithm for Optimization and Control of Exothermic Batch Process.
- November 2012 MEng Internal Examiner, Siew Zhan Wei (PK2010-8096) Universiti Malaysia Sabah, Thesis title: Energy Efficient Routing Protocol for Wireless Sensor Networks.

#### Research & Publication

##### Research Grant

- June 2014 – June 2016 FRG0405-TK-2/2014 (RM114,200.00): Feasibility Study of Hybrid Traffic Management Architecture with Multiagent System in Urban Traffic Network Optimization. [Researcher].
- March 2014 – Feb. 2016 SBK0152-TK-2014 (RM25,000): Modelling of a Novel Universal Hybrid Algorithm for Multi-operation Mode Sensorless Brushed DC Motor Speed & Position Estimation Using Artificial Intelligence
- Jan. 2014 – Dec. 2015 FRG0353-TK-2/2013 (RM 145,000.00): Fast-Switching Vertical Strained Impact-Ionization Transistor for Ultra-Sensitive Based Biosensors. [Project Leader]
- Jun 2013 – July 2015 FRGS0326-TK-1/2013 (RM 65,000.00): Synthesised Geopolymer Ceramic Membrane Fouling Reduction Analysis. [Researcher]
- Sept. 2013 – Aug. 2015 ERGS00305-TK-1/2013 (RM 100,000.00): – Potential Fabrication & Characterization of Vertical-Structure Field Effect Transistor Using Organic Semiconductor on Transparent Substrate. [Researcher]
- Dec 2012 – Nov 2014 KPT Sport Research Grant (SRGS - GI0087) (RM35,000) : Prototaip Instrumen Latihan dan Pengukuran Tangkasan. [Researcher].

- Dec. 2012 – Nov. 2014 **KPT Research Acculturation Collaborative Effort (RACE) Grant Schemes, RACE0006-TK-2012, (RM45,000):** Hybrid Activated Carbon-Nanofiltration Membrane for the Removal of Anthropogenic Chemicals In Surface Water Of Sabah, Malaysia. [Researcher].
- July 2012 - June 2014 **ERGS0023-TK-1/2012 (RM50,000.00):** Potential Production of a Transparent p-CuGaO<sub>2</sub>/ n-ZnO Heterojunction Thin Film Diodes. [Researcher].
- July 2012 – June 2014 **FRG0307-TK-1/2012 (RM 51,000.00):** Modeling of Enhanced Ultraviolet (UV) Band Detector Using Electrostatic Field Effect (ESF). [Researcher].
- July 2012 – June 2014 **SBK0026-TK-1/2012 (RM15,000.00):** Probabilistic Modelling of Dynamic Vehicles Flow at Roundabout Intersection. [Researcher].
- June 2012 – May 2014 **FRG0306-TK-1/2012 (RM 83,800.00):** Ballistic Transport in Organic Semiconductor Device: Modeling and Characterization. [Researcher].
- June 2012 – May 2014 **ERG0021-TK-1/2012 (RM70,000.00) :** Exploring the Potential of Dyna-Q Learning for Multi-Agent Systems to Solve Multi-Intersection Traffic Network Problems. [Researcher].
- April 2012 – March 2014 **e-Science Fund (3-01-10-SF175) (RM 327,500.00):** Design of Integrated Nanodevice Vertical Strained Impact-Ionization MOSFET (VESIMOS) for Nanoelectronics Application. [Project Leader].
- April 2012 – March 2014 **University Malaysia Sabah Research Grant Schemes (SBK0003-TK-1/2011) (RM20,000) :** Operation Performance Study Of Mobile Hollow Fiber Membrane Water Treatment System. [Researcher].
- April 2012 – March 2014 **FRG0311-TK-1/2012 (RM 62,150.00) :** An Improved Adaptive Fuzzy Computing in Maximum Power Point Tracking for Partially Shaded Condition of Solar Photovoltaic Arrays. [Researcher].
- April 2012 – March 2014 **SLB0014-TK-1/2011 (RM10,000) :** Exploratory Study of Energy Efficient Wireless Sensor Networks in Environmental Monitoring. [Researcher].
- Feb 2012 – Jan 2014 **University Malaysia Sabah Research Grant Schemes (SLB0042-TK-1/2011) (RM8,000) :** Design and Simulation of Top-Contact Structure Organic Thin-Film Transistor (OTFT) for Nanoelectronics Application. [Researcher].
- August 2011 – July 2013 **ERGS0002-TK-1/2011 (RM103,000.00):** Emerging Nanoelectronics Device Design Exploration Incorporating Vertical Impact –Ionization MOSFET and Strained (SiGe) Technology. [Project Leader].
- Oct 2010 - Sept 2012 **FRG0248-TK-2/2010 (RM39,000.00) (Completed):** Nano-Ballistic Saturation Velocity Modelling to Enhance Circuit Performances of Nano-MOSFET. [Project Leader].

- Feb 2010 – Jan 2012 **FRG0212-TK-1/2010 (RM40,000.00);** An Exploratory Investigation into Behavioral Theory Approach for Based Fault Tolerant Control System Analysis and Design. [Researcher].
- August 2007 – July 2009 **e-Science Fund, 03-01-06-SF0322 (Vot. No: 79178), (RM 248, 500.00), (Completed),** Design of Vertical MOSFET's for Future Development of Nanoelectronics Device Using TCAD Tools, [Researcher].
- Dec 2006 – Nov 2008 **e-Science Fund, 03-01-06-SF0052 (Vot. No: 79021), (RM 109, 998.00), (Completed);** The Development of Nanoelectronic Devices Using TCAD Tools, [Researcher].
- July 2002 – June 2004 **UMS- CR1 (RM60,000) ;** Development of Thin Film Strain Gauge Sensor. [Researcher].

**Publication****Thesis**

- 15 August 2009 Ismail Saad, Vertical Channel Structure and Ballistic Carrier Transport of Nanoscale MOSFET, Ph.D Thesis, Universiti Teknologi Malaysia (UTM).
- 11 February 2002 Ismail Saad, Design and Simulation of a High Performance Lateral BJT's on TFSSOI, MSc Thesis, University of Southampton, United Kingdom.
- 23 August 1999 Ismail Saad, Implementation and Application with the Real-Time Interface, BEng Thesis, Universiti Putra Malaysia (UPM).

**Journal Publication**

No. of Citations (Google Scholar 2015) : 252  
 No. of *h*-index (Google Scholar 2015) : 7

**Journals**

- [1] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Khairul A.M, Bablu Ghosh, N. Bolong and Razali Ismail (2014). *Doping Concentrations Analysis on the Performance of Vertical Strained-SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)*. International Journal of Simulation: Systems, Science & Technology, vol. 15(2), 2014. ISSN: 1473-804x online, 1473-8031 print. pp. 24-31.
- [2] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Khairul A.M, Bablu Ghosh, N. Bolong, Razali Ismail and Uda Hashim (2014). *Breakdown Voltage Reduction Analysis with Adopting Dual Channel Vertical Strained SiGe Impact Ionization MOSFET (VESIMOS)*. International Journal of Simulation: Systems, Science & Technology, vol. 15(2), 2014. ISSN: 1473-804x online, 1473-8031 print. pp. 40-45.
- [3] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Divya Pogaku and N. Bolong (2014). *In-Depth Design and Simulation Analysis of Vertical Strained Impact Ionization MOSFET (VESIMOS)*. International Journal of Simulation: Systems, Science & Technology, vol. 15(2), 2014. ISSN: 1473-804x online, 1473-8031 print. pp. 32-39.
- [4] Bolong N., Kumaresan S., Saad I., Thasan T., and Ramli R. (2014). *Tongkat Ali extraction using hollow fiber membranes modified by negatively charged-modifying macromolecules*. Jurnal Teknologi (Sciences and Engineering), vol. 70(2), 2014, pp. 7-10.
- [5] W.L. Khong, W.Y. Kow, I. Saad, C.F. Liao and K. Tze Kin Teo (2014). *Particle Filter Based Vehicle Tracking Approach with Improved Resampling Stage*. ICTACT Journal on Image and Video Processing, vol. 4(3), 2014.
- [6] L. Angeline, H.P. Yoong, H.K. Lau, I. Saad and K. Tze Kin Teo (2014). *Automatic License Plate Localisation and Identification via Signature Analysis*. ICTACT Journal on Image and Video Processing, vol. 4(3), 2014.
- [7] B.K. Ghosh, S.M.Z. Saiful, S. Ismail, A.M. Khairul and T. Kenneth (2014). *Current Density Modeling of Silicon UV Photo Detector*. Computer Applications in Environmental Sciences and Renewable Energy, vol. 24, 2014, pp. 87-91.

- [8] Khairul Anuar Mohamad, Afishah Alias, Ismail Saad, Bablu Kumar Ghosh, Katsuhiro Uesugi and Hisashi Fukuda (2014). *Mixed P3HT/PCBM Organic Thin-Film Transistors: Relation between Morphology and Electrical Characteristics*. Journal of Chemistry and Chemical Engineering, vol. 8(2014), 2014, pp. 476-481.
- [9] B.K. Ghosh, S.S.M. Zainal and I. Saad (2014). *Exploration of Interface Layer Aptness on Efficiency Aspect of InGaN/Si Double Junction Tandem Solar Cell*. Recent Advances in Energy, Environment and Financial Planning, vol. 6, 2014, pp. 267-271.
- [10] BK Ghosh, I Saad, A Yamamoto. *Optoelectronic properties of improved GaN semiconductor on Si (111) using growth approaches and different interlayer's*. International Journal of Materials Science and Applications 2013; 2(2) : 43-46, ISSN: 2327-2643, doi: 10.11648/j.ijmsa.20130202.12.
- [11] Bablu K. Ghosh, Ismail Saad, Khairul Anuar Mohamad, Saiful S. Mohd Zainal, "Intense UV Enriched Photo Detection By Higher Energy Edge Attuned Coating On Csi Detector, IJRET, 2013 (02)-11,ISSN-2319-1163, P.615-19
- [12] Ismail Saad, Khairul A. M., Nurmin Bolong, Abu Bakar A.R and Vijay K. Arora. *Numerical Evaluation of Low-Dimensional Energy Spectrum and Carrier Statistics for Nanostructure Device Application*. International Journal of Simulation – Systems, Science & Technology, IJSSST. ISSN: 1473-804x. June 2012. vol. 13, no. 3.
- [13] K. A. Mohamad, A. Alias, I. Saad, K. Uesugi, H. Fukuda. *Organic Field-Effect Transistors with Reversible Threshold Voltage Shifts for Memory Element*. International Journal of Simulation – Systems, Science & Technology, IJSSST. ISSN: 1473-804x. June 2012. vol. 13, no. 3.
- [14] S.E. Tan, Z.W. Siew, K.A. Mohamad, I. Saad, K.T.K. Teo. *Network Coding based Packets Queue Operation for Wireless Ad Hoc Networks*. International Journal of Simulation – Systems, Science & Technology, IJSSST. ISSN: 1473-804x. June 2012. vol. 13, no. 3.
- [15] Ismail Saad, Khairul A. M., Nurmin Bolong, Abu Bakar A.R and Vijay K. Arora, *Computational Analysis of Ballistic Saturation Velocity in Low-Dimensional Nano-MOSFET*, Int. Journal of Simulation, Sciences System and Technology (IJSSST-V12), ISSN: 1473-804x online, 1473-8031 print, Vol.12. No. 3 (June 2011), pg1-6.
- [16] Ismail Saad, Nurmin Bolong, P. Divya, Bablu K. Ghosh and Kenneth Teo Tze Kin, *Design and Simulation Analysis of Vertical Double-Gate MOSFET (VDGM) Structure for Nano-device Application*, Int. Journal of Simulation, Sciences System and Technology (IJSSST-V12), ISSN: 1473-804x online, 1473-8031 print, Vol.12. No. 3 (June 2011), pg 7-11.
- [17] Bolong N. Saad, I, Ismail A.R., Salim M.R., Rana D. and Matsuura T. *Charge Property Modeling of Nanofiltration Hollow Fiber Membranes*, Int. Journal of Simulation, Sciences System and Technology (IJSSST-V12), ISSN: 1473-804x online, 1473-8031 print, Vol.12. No. 3 (June 2011), pg 12-16.
- [18] Wei Yeang Kow; Wei Leong Khong; Hoe Tung Yew; Ismail Saad; Kenneth Tze Kin Teo, *Adapting Markov Chain Monte Carlo with CUSUM Path Plot for Overlapped Vehicle Tracking*, Int. Journal of Simulation, Sciences System and Technology (IJSSST-V12), ISSN: 1473-804x online, 1473-8031 print, Vol.12. No. 3 (June 2011), pg 36-43.

- [19] Wei Leong Khong; Wei Yeang Kow; Lorita Angeline; Ismail Saad; Kenneth Tze Kin Teo, *Overlapped Vehicle Tracking via Enhancement of Particle Filter with Adaptive Resampling Algorithm*, Int. Journal of Simulation, Sciences System and Technology (IJSST-V12), ISSN: 1473-804x online, 1473-8031 print, Vol.12. No. 3 (June 2011), pg 44-51.
- [20] Munawar A. Riyadi, Ismail Saad and Razali Ismail, "Investigation of filler thickness variation effects on oblique rotating implantation (ORI)- based vertical double gate MOSFET", *Microelectronic Journal*, Elsevier, Vol. 41 (2010) pp 827– 833.
- [21] Ismail Saad, Michael L. P. Tan, Mohammed Taghi Ahmadi, Razali Ismail, Vijay K. Arora, *The dependance of saturation velocity on temperature, inversion charge and electric field in a nanoscale MOSFET*, *International Journal of Nanoelectronics and Materials (IJNeM)*, Volume 3, Number 1, 2010, pp. 17-34.
- [22] Ismail Saad, Michael L.p Tan, Ing Hui Hii, Razali Ismail And Vijay K. Arora. *Ballistic Mobility And Saturation Velocity In Low-dimensional Nanostructures*. Vol. 40, No. 3 (2009) pp 540-542. www.elsevier.com: Microelectronics Journal.
- [23] Ismail Saad , Michael L. P. Tan, Aaron Chii Enn Lee, Razali Ismail And Vijay K. Arora. *Scattering-limited And Ballistic Transport In Nano-cmos Transistors*. Vol. 40, No. 3 (2009) pp 581-583. Wwww.elsevier.com: Microelectronics Journal.
- [24] Michael L. P. Tan, Vijay K. Arora, Ismail Saad, Mohammad Taghi Ahmadi And Razali Ismail. *The Drain Velocity Overshoot In An 80 Nm Metal-oxide-semiconductor*. American Institute of Physics: Journal Of Applied Physics (2009).
- [25] Ismail Saad , Razali Ismail. 2008-05-07. *Self-aligned Vertical Double-gate Mosfet (vdgm) With The Oblique Rotating Ion Implantation (ORI) Method*. Vol.39, No.12 (2008) pp 1538-1541. Wwww.elsevier.com: Microelectronics Journal.
- [26] Vijay K. Arora, Michael L. P. Tan, Ismail Saad, Razali Ismail.. *Ballistic Quantum Transport In a Nanoscale Metal-oxide-semiconductor Field Effect Transistor*. Jil. 91. American Institute Of Physics: Applied Physics Letter (APL 2007).
- [27] Michael L. P. Tan, Ismail Saad, Razali Ismail, Vijay K. Arora. *Enhancement in Nano-RC Switching Delay Due To the Resistance Blow-up In Ingaas*. Jil. 2. 4. World Scientific.com: World Scientific Publishing Company (nano 2007).
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- [29] Ismail Saad , Michael L. P. Tan, Razali Ismail, Vijay K. Arora. *Nano-physics Of Transient Phenomenon In Semiconducting Devices And Circuits*. Penerbit UTM 2009: Jurnal Teknologi.
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- [31] Zul Atfyi Fauzan M. N., Ismail Saad, Razali Ismail. *Scaling and Numerical Simulation Analysis of 50 nm MOSFET Incorporating Dielectric Pocket (DP-MOSFET)*, Malaysian Solid State Science And Technology Society (mass): Journal Of Solid State Science And Technology (2008).
- [32] Ismail Saad , Razli Ismail, Vijay K. Arora. *Investigation on the Effects of Oblique Rotating Ion Implantation (ori) For Nanoscale Vertical Mosfet*. Vol 15(2), pp 69 – 76 (2008). Malaysian Solid State Science and Technology Society (MASS): Solid State Science And Technology Letters.
- [33] M. T. Ahmadi, Ismail Saad, Razali Ismail and Vijay K. Arora, "Analytical Study of Drift Velocity in Low Dimensional Devices", Journal of Fundamental Sciences, Vol. 4 (2008), pg 403 - 413. Available online at <http://www.ibnusina.utm.my/jfs>
- [34] Ismail Saad, Razali Ismail. *Process and Characterization of 50 Nm Vertical Double Gate Mosfet (vdgm) With Filox Using Tead Tools*. Jil. 28. (2007). Malaysian Insitute Of Physics: Jurnal Fizik Malaysia (JFM).
- [35] Zul Atfyi Fauzan M. N, Ismail Saad, Razali Ismail. *Characterization of 50 Nm Mosfet With Dielectric Pocket*. Jil. 28. Malaysian Insitute Of Physics: Jurnal Fizik Malaysia (JFM). Vol. 28, No. 3 & 4, pp 93-98 (2007).

#### Proceedings

- [1] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Abu Bakar AR, N. Bolong, Khairul A.M, Bablu Ghosh and Razali Ismail (2014). Impact of Strained SiGe on the performance of Vertical Strained SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP). 2014 International Conference on Information Science, Electronics and Electrical Engineering (ISEEE 2014), pp. 1877-1881.
- [2] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Khairul A.M, Bablu Ghosh, N. Bolong and Razali Ismail (2014). Characterization of Vertical Strained SiGe Impact Ionization MOSFET for Ultra-Sensitive Biosensor Application. 2014 IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2014), pp. 154-157.
- [3] K. A. Mohamad, U. F. Shuib, A. Alias, T. A. Tabet, B. K. Gosh, I. Saad (2014). Modeling and Simulation Approach for Organic Thin-Film Transistor: The Effects of Contact Resistance and Voltage Dependent Mobility. 2014 International Congress on Natural Sciences and Engineering (ICNSE2014).
- [4] K. A. Mohamad, U. F. Shuib, A. Alias, T. A. Tabet, B. K. Gosh, I. Saad (2014). Modeling and Simulation Approach for Organic Thin-Film Transistor: The Effects of Contact Resistance and Voltage Dependent Mobility. 2014 International Materials Technology Conference and Exhibition (IMCTE2014).
- [5] Dzul Fahmi Mohd Husin Seria, Afishah Alias, Bablu K. Gosh, Ahmad Mukifza Harun, Ismail Saad and Khairul Anuar Mohamad (2014). Spray-Deposited Tips-Pentacene Organic Thin-Film on Pmma for Organic Transistor Applications. 2014 International Materials Technology Conference and Exhibition (IMCTE2014).

- [6] Fara Naila Rusnan, Afishah Alias, Bablu K. Gosh, Ahmad Mukifza Harun, Ismail Saad, and Khairul Anuar Mohamad (2014). Soluble 6,13-Bis(Triisopropylsilylethynyl) (Tips-Pentacene) Organic Semiconductor Layer Thin Film Analysis On Transparent Substrate. 2014 International Materials Technology Conference and Exhibition (IMCTE2014).
- [7] B.K. Ghosh, S.S.M. Zainal and I. Saad (2014). Investigation of Harmonized Layers Impact on Quantum Efficiency for N or P type emitter of cSi Solar detector. 2014 WSEAS Transactions on Environment and Development.
- [8] B.K. Ghosh, S.S.M. Zainal and I. Saad (2014). Performance Analysis Based on Different Indium Content for InGaN/Si Hetero-Junction Solar Cell. 2014 IET International Conference on Clean Energy and Technology (CEAT 2014).
- [9] Shuib, U.F., Mohamad, K.A., Saad, I., Gosh, B.K., Tabet, T.A. (2014). Simulation of temperature dependent characterization of charge transport in organic transistor. 2014 IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2014), pp. 202-205.
- [10] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Divya Pogaku, Abu Bakar AR, Khairul A.M, Bablu Ghosh, N. Bolong, Razali Ismail, U. Hashim, "Body Doping Analysis of Vertical Strained-SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)", IEEE Regional Symposium on Micro and Nano Electronics (IEEE-RSM2013), 25-27 September 2013, Langkawi, Malaysia.
- [11] Ismail Saad, Bun Seng C, Mohd Zuhir H, Abu Bakar AR, Divya Pogaku, N. Bolong, Khairul A.M, Bablu Ghosh, "Single and Dual Strained Channel Analysis of Vertical Strained-SiGe Impact Ionization MOSFET (VESIMOS)", IEEE Regional Symposium on Micro and Nano Electronics (IEEE-RSM2013), 25-27 September, Langkawi, Malaysia.
- [12] Ismail Saad, Zuhir Hamzah, Bun Seng, Khairul Anuar, Bablu Ghosh, Nurmin Bolong, Razali Ismail, "Performance Analysis of Vertical Strained-SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)", IEEE 5th International Conference on Computational Intelligent, Modelling and Simulation, (IEEE-CIMSIM2013), 24-26 September 2013, Seoul, Korea Selatan.
- [13] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Abu Bakar AR, N. Bolong, Khairul A.M, Bablu Ghosh, Razali Ismail, "Mobility Enhancement on Vertical Strained-SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)", IEEE Region 10 International Conference 2013, (IEEE-TENCON2013), 22-25 October 2013, Xian, China.
- [14] Ismail Saad, Mohd. Zuhir H., Bun Seng C., Abu Bakar AR, N. Bolong, Khairul A.M, Bablu Ghosh, Razali Ismail, "Impact of Strain and DP Position on the performance of Vertical Strained- SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)", IEEE Region 10 International Conference 2013, (IEEE-TENCON2013), 22-25 October 2013, Xian, China.

- [15] Ismail Saad, Zuhir Hamzah, Bun Seng, Khairul Anuar, Bablu Ghosh, Nurmin Bolong, Razali Ismail, "Effects of S/D Doping Concentrations on Vertical Strained-SiGe Impact Ionization MOSFET Incorporating Dielectric Pocket (VESIMOS-DP)", IEEE First International Conference on Artificial Intelligence, Modelling and Simulation (IEEE-AIMS2013), 03-05 December 2013, Kota Kinabalu, Sabah, Malaysia.
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- [103] Zul Atfyi Fauzan, Ismail Saad, Razali Ismail. *Process and Characterization Of MOSFET Incorporating Dielectric Pocket (DP-MOSFET) Using TCAD Tools*. Penang, Malaysia: Regional Symposium on Microelectronics 2007 ((RSM2007), December 3-6, 2007.
- [104] Ismail Saad , Razali Ismail. *Design and Simulation Of 50nm Vertical Double-gate MOSFET (VDGM)*. Kuala Lumpur, Malaysia: IEEE International Conference On Semiconductor Electronics (ICSE 2006), 29 Nov - 1 Dec 2006.

- [105] Ismail Saad , Razali Ismail. *Design and Simulation of A High Performance Lateral BJT's On TFSOI*. Kuala Lumpur, Malaysia: Ieee International Conference On Semiconductor Electronics (ICSE 2006), 29 Nov - 1 Dec 2006.
- [106] Wong, Y.J., Saad, I., Ismail, R.. *Characterization of strained silicon MOSFET using semiconductor TCAD tools*. Kuala Lumpur, Malaysia: Ieee International Conference On Semiconductor Electronics (ICSE 2006), 29 Nov - 1 Dec 2006.
- [107] Ismail Saad , Abu Bakar A.r, Pukhraj Vaya. *Automating the RISC Microprocessor Design through ASIC Methodology*. Grand Plaza Park Royal Penang Batu Ferringhi Beach 11100 Penang, Malaysia: International Conference on Robotics, Vision, Information & Signal Processing, ROVISP 2005, July 20 - 22, 2005.
- [108] Ismail Saad , Abu Bakar A.r, Pukhraj Vaya. *Effect of Register Insertion on Speed Performance of Microprocessor Datapath Unit Design*. Grand Plaza Park Royal Penang Batu Ferringhi Beach Penang, Malaysia: International Conference On Robotics, Vision, Information & Signal Processing, ROVISP 2005, July 20 - 22, 2005.
- [109] Ismail Saad, Nurmin Bolong. *Exploration on the Influence of Translation in Teaching & Learning Process in Engineering Subject*. Kota Kinabalu, Sabah.: 10th International Conference On Translation. August 2 - 4, 2005.
- [110] Ismail Saad , Pukhraj Vaya, Abu Bakar Abdul Rahman. *HDL-based Design Methodology Of 16-bit RISC Microprocessor*. Kuala Lumpur, Malaysia.: 3rd International Conference On Advanced Manufacturing Technology (icamt 2004), 11-13 May, 2004.
- [111] Ismail Saad , Pukhraj Vaya, Peter Ashburn. *Simulation of a Novel Lateral Bipolar Transistor with an Approximately 21 Ghz Ftmax on Thin Film SOI*. Indian Institute Of Technology Madras, Chennai, India: Twelfth International Workshop On The Physics Of Semiconductor Devices (IWPSD2003), December 16 - 20, 2003 .
- [112] Ismail Saad , Peter Ashburn. *Simulation of a High Performance Lateral BJT on TFSOI*. Kuching, Sarawak: The Xix Regional Conference on Solid State Science Technology, 30 Oktober -01 November, 2002.
- [113] Ismail Saad , Nurmin Bolong. *Expert System for Renewable Energy: Conceptual and Methodologies Approach*. Kota Kinabalu, Sabah: International Conference on Artificial Intelligence in Engineering & Technology (ICAIET 2002), June 17 - 18, 2002.
- [114] Ismail Saad , Razali Ismail.. *Process and Characterization Of 50nm Vertical Double-gate Mosfet (VDGM) With FILOX Using TCAD Tools*. Kuala Lumpur, Malaysia: National Physics Conference (PERFIK 2006), December 2006.
- [115] Ismail Saad , Pukhraj Vaya, Abu Bakar A.r. *A New 16-bits Risc Processor Architecture: Controller State Machines And Functional Verification Using Verilog HDL*. Kota Kinabalu, Sabah.: 3rd Seminar On Science And Technology, 10-11 August 2004.
- [116] Ismail Saad . *Computer Interfacing - A Descriptive Approach*. Sekolah Kejuruteraan Dan Teknologi Maklumat, Universiti Malaysia Sabah: Buletin Sktm, Jilid 1: Keluaran 2: September 2000.

## Conferences &amp; Seminars

## Paper Presenter

- 25<sup>th</sup> – 29<sup>th</sup> Sept. 2012 4<sup>th</sup> International Conference on Computational Intelligent, Modelling and Simulation, (CIMSIM2012), *Ballistic Saturation Velocity Modelling Beyond Ohm's Law*, Hyatt Regency hotel, Kuantan, Malaysia.
- 19<sup>th</sup> – 21<sup>st</sup> Sept. 2012 10<sup>th</sup> IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2012), *Enhanced Performance Analysis of Vertical Strained-SiGe Impact Ionization MOSFET (VESIMOS)*, Grand Millennium, Kuala Lumpur, Malaysia.
- 19<sup>th</sup> – 21<sup>st</sup> Sept. 2012 10<sup>th</sup> IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2012), *Investigation of Incorporating Dielectric Pocket (DP) on Vertical Strained-SiGe Impact Ionization MOSFET (VESIMOS-DP)*, Grand Millennium, Kuala Lumpur, Malaysia.
- 8<sup>th</sup> – 10<sup>th</sup> Feb. 2012 3<sup>rd</sup> International Conference on Intelligent systems, Modeling and Simulation, (ISMS2012), *Energy Spectrum and Carrier Statistics Numerical Analysis for Nanostructure Device Application*, Le Meridian Hotel, Kota Kinabalu, Sabah.
- 28<sup>th</sup> – 30<sup>th</sup> Sept. 2011 2011 IEEE Regional Symposium on Micro and Nanoelectronics (RSM2011), *Investigation on Effect of Tilt Angle Ion Implantation for Vertical Double Gate MOSFET*, Le Meridien, Kota Kinabalu, Malaysia.
- 26<sup>th</sup> – 28<sup>th</sup> July 2011 3<sup>rd</sup> International Conference on Computational Intelligence, Communication Systems & Networks, (CICSYN2011), *Enhancement of Particle Filter Approach for Vehicle Tracking Via Adaptive Resampling Algorithm*, Bali, Indonesia.
- 24<sup>th</sup> January 2011 2<sup>nd</sup> International Conference on Intelligent Systems, Modeling and Simulation (ISMS2011), *Performance Design and Simulation Analysis of Vertical Double Gate MOSFET (VDGM)*, Equatorial Hotel, Kuala Lumpur.
- 28<sup>th</sup> -30<sup>th</sup> June 2010 IEEE International Conference on Semiconductor Electronics (ICSE 2010), *Reduced Parasitic Capacitances Analysis of Nanoscale Vertical MOSFET*, Holiday Inn Hotel, Melaka, Malaysia.
- 28<sup>th</sup> -30<sup>th</sup> June 2010 IEEE International Conference on Semiconductor Electronics (ICSE 2010), *Feasibility study of Integrated Vertical, Lateral IMOS and TFET devices for Nanoscale Transistor*, Holiday Inn Hotel, Melaka, Malaysia.
- 26<sup>th</sup> – 29<sup>th</sup> May 2010 Fourth Asia International Conference on Mathematical/Analytical Modelling and Computer Simulation (AMS2010), *Analytical Analysis Of Ballistic Drift Velocity In Low-Dimensional Nano-Devices*, Le Meridian Hotel, Kota Kinabalu, Sabah.
- 25<sup>th</sup> – 29<sup>th</sup> May 2009 Third Asia International Conference on Modelling & Simulation (AMS2009), *Physics-based Modeling of Ballistic Transport in Nanoscale Transistor*, Bandung/ Bali, Indonesia.

- 10<sup>th</sup> – 12<sup>th</sup> August 2009 Regional Symposium on Microelectronics 2009 (RSM 2009), *Nanoscaling Analysis Of Multiple Gate Vertical Mosfet With Oblique Rotating Implantation (ori) Method*, Kota Bharu, Malaysia.
- 11<sup>th</sup> – 14<sup>th</sup> March 2008 2nd Conference on Nanostructures (NS2008), March 11-14, 2008, *High-Field Drift Velocity Limitation in Quasi-2D Nanostructures (1D Quantum Limit)*. Kish University, Kish Island, I.R. Iran.
- 27<sup>th</sup> -29<sup>th</sup> May 2008 Regional Annual Fundamental Science Seminar 2008 (RAFSS 2008), *Numerical Analysis Of Double Gate (DG) Vertical MOSFETS Incorporating Dielectric Pocket (DP) In Nanoscale Regime*, Ibnu Sina Institute for Fundamental Science Studies, UTM Skudai, Johor, Malaysia.
- 25<sup>th</sup> – 27<sup>th</sup> Nov. 2008 IEEE International Conference on Semiconductor Electronics (ICSE 2008), *Ballistic Carrier Transport in A Quasi-Two-Dimensional Nanoscale Field Effect Transistor (FET)*, Johor Bahru, Malaysia.
- 18<sup>th</sup> – 21<sup>st</sup> Nov. 2008 International Conference on Nanoscience & Nanotechnology 2008 (NANO- SciTech 2008), *Numerical Analysis of Vertical Double Gate MOSFETs (VDGM) With Dielectric Pocket (DP) Effects on Silicon Pillar for Nanoscale Transistor*, UITM, Shah Alam.
- 12<sup>th</sup> – 15<sup>th</sup> June 2007 ISESCO International Workshop and Conference on Nanotechnology (IWCN2007), *Scaling Of Vertical And Lateral NMOSFET In Nanometer Regime*, Kuala Lumpur, Malaysia.
- 29<sup>th</sup> May – 1<sup>st</sup> June 2007 International Conference on Advancement of Materials and Nanotechnology (ICAMN 2007), *Numerical Simulation Analysis Of CMOS Compatible Process Of 50nm Vertical Single And Double Gate Nmosfet*, Langkawi, Malaysia.
- 1<sup>st</sup> -6<sup>th</sup> July 2007 International Conference on Materials for Advanced Technologies (ICMAT 2007), *Characterization Analysis of Nanoscale Vertical Double Gate NMOSFET (VDGM) Using Tead*. Suntec City, Singapore.
- 3<sup>rd</sup> – 6<sup>th</sup> Dec. 2007 Regional Symposium on Microelectronics 2007 (RSM 2007), *The Ultimate Drift Velocity In Degenerately-doped Silicon*, Penang, Malaysia.
- 27<sup>th</sup> -29<sup>th</sup> Nov. 2007 23rd Regional Conference of Solid State Science & Technology (RCSSST 2007), *Investigation On The Effects Of Oblique Rotating Ion Implantation (ORI) For Nanoscale Vertical MOSFET*, Johor, Malaysia.
- 29<sup>th</sup> Nov – 1<sup>st</sup> Dec. 2006 IEEE International Conference on Semiconductor Electronics (ICSE 2006), *Design And Simulation of 50nm Vertical Double-Gate Mosfet (VDGM)*. Kuala Lumpur, Malaysia.
- 2<sup>nd</sup> – 4<sup>th</sup> August 2005 International Conference on Translation 2005, *Exploration on the Influence of Translation in Teaching & Learning Process In Engineering Subject*, Kota Kinabalu, Sabah.
- 20<sup>th</sup> – 22<sup>nd</sup> July 2005 International Conference on Robotics, Vision, Information and Signal Processing (ROVISIP2005), *HDL-Based Design Methodology Of 16-Bit Risc Microprocessor*, Penang, Malaysia.

- 16<sup>th</sup> – 20<sup>th</sup> Dec. 2003 Twelfth International Workshop on The Physics of Semiconductor Devices 2003 (IWPSD 2003), *Simulation Of A Novel Lateral Bipolar Transistor With An Approximately 21 GHz F<sub>max</sub> On Thin Film SOI*. IIT Madras, India.
- 30<sup>th</sup> Oct. – 1<sup>st</sup> Nov. 2002 The XIX Regional Conference on Solid State Science Technology 2002, *Simulation of A High Performance Lateral BJT on TF<sub>2</sub>SOI*, Kuching, Sarawak.
- 17<sup>th</sup> – 18<sup>th</sup> June 2002 International Conference on Artificial Intelligence in Engineering & Technology 2002 (ICAIET 2002), *Expert System for Renewable Energy: Conceptual and Methodologies Approach*. Kota Kinabalu, Sabah.
- Conference Secretariat**
- 25<sup>th</sup> – 29<sup>th</sup> Sept. 2012 **Program Chair** of 4th International Conference on Computational Intelligent, Modelling and Simulation, (CIMSIM2012), Hyatt Regency hotel, Kuantan, Malaysia.
- 19<sup>th</sup> – 21<sup>st</sup> Sept. 2012 **Committee Member** of 10<sup>th</sup> IEEE International Conference on Semiconductor Electronics (ICSE 2012), Grand Millennium, Kuala Lumpur, Malaysia.
- 8<sup>th</sup> – 10<sup>th</sup> Feb. 2012 **Conference Local Chair** of 3rd International Conference on Intelligent systems, Modeling and Simulation, (ISMS2012), Le Meridien Hotel, Kota Kinabalu, Sabah.
- 28<sup>th</sup> – 30<sup>th</sup> Sept. 2011 **Conference Co-Chair** of 2011 IEEE Regional Symposium on Micro and Nanoelectronics (RSM2011), Le Meridien, Kota Kinabalu, Malaysia.
- 26<sup>th</sup> – 28<sup>th</sup> July 2011 **Program Chair** of 3rd International Conference on Computational Intelligence, Communication Systems & Networks, (CICSYN2011), Bali, Indonesia.
- 24<sup>th</sup> January 2011 **Program Chair** of 2nd International Conference on Intelligent Systems, Modeling and Simulation (ISMS2011), Equatorial Hotel, Kuala Lumpur.
- 28<sup>th</sup> -30<sup>th</sup> June 2010 **Committee Member** of IEEE International Conference on Semiconductor Electronics (ICSE 2010), Holiday Inn Hotel, Melaka, Malaysia.
- 26<sup>th</sup> – 29<sup>th</sup> May 2010 **Program Chair** of Fourth Asia International Conference on Mathematical/Analytical Modelling and Computer Simulation (AMS2010), Le Meridien Hotel, Kota Kinabalu, Sabah.
- 10<sup>th</sup> -12<sup>th</sup> August 2009 **Scientific Committee** of 2009 IEEE Regional Symposium on Micro and Nano Electronics (IEEE-RSM2009), Renaissance Hotel, Kota Bharu, Malaysia.
- 3<sup>rd</sup> – 5<sup>th</sup> August 2004 **Co-Chairman Fund-Raising Committee** of International Conference on Artificial Intelligence in Engineering & Technology (ICAIET 2004), School of Engineering & IT, UMS.
- 18<sup>th</sup> -19<sup>th</sup> August 2003  
& 20<sup>th</sup> -22<sup>nd</sup> August 2003 **Co-organizer Committee** of 2nd Technical Seminar on Shoreline Management (TSSM 2003) & Short Course on Dredging for Land Reclamation, Sutera Harbour Resort, Kota-Kinabalu, Sabah.

17<sup>th</sup> – 18<sup>th</sup> June 2002 **Publicity & Fund-Raising Co-Chairman** of International Conference on Artificial Intelligence in Engineering & Technology (ICAIET 2002), School of Engineering & IT, UMS.

#### Professional Courses/Seminar/ Workshop Attended

##### Professional Development

31<sup>st</sup> Oct – 1<sup>st</sup> Nov 2012 Participant of Workshop on Sentaurus and TCAD Training by Trans-Dist Engineering Sdn Bhd, SKTM, UMS.

15<sup>th</sup> – 16<sup>th</sup> Feb. 2012 Participant of Engineering Management Practice Course by Institute of Engineers Malaysia (IEM), IEM Sabah Branch Office.

28 April 2012 Participant of Team Building Program at Kiulu Water Rafting by School of Engineering & IT, UMS.

25 June 2012 Participant of Majlis Amanat Sulung Naib Canselor UMS Ke IV (Professor Dr. Harun Abdullah), Universiti Malaysia Sabah.

17 May 2012 Participant of Syarahan Perdana Professor Dr. Harun Abdullah, School of Science & Technology, UMS.

6<sup>th</sup> – 8<sup>th</sup> Dec. 2011 Participant of NanoMalaysia Young Scientists Meeting by Ministry of Science, Technology and Innovation (MOSTI), Kuala Lumpur, Malaysia.

24<sup>th</sup> Sept. 2011 Participant of Professional Engineer Interview Workshop by Institute of Engineers Malaysia (IEM), IEM Sabah Branch Office.

14<sup>th</sup> Oct. 2011 Participant of Syarahan Umum Penyelidikan Sains Mikrograviti, MOHE, Pusat Penyelidikan dan Inovasi, UMS.

6<sup>th</sup> – 8<sup>th</sup> Aug. 2010 Participant of Bengkel Penggubal Modul CPD Akademik 2010 – Professional Ethics for Engineers, UMS, Novotel Hotel, KK, Sabah.

21<sup>st</sup> – 23<sup>rd</sup> June 2010 Participant of Bengkel Penilaian Tahap Kecekapan Tahap 5 (PTK5), Pejabat Pendaftar, UMS.

9<sup>th</sup> – 17<sup>th</sup> June 2010 Participant of Silvaco TCAD and EDA Software Training Course by IC Microsystem Sdn Bhd, Cyberjaya, Kuala Lumpur.

4<sup>th</sup> – 6<sup>th</sup> Sept. 2006 Participant of Research Methodology Course at UTM, Skudai, JB.

30<sup>th</sup> Aug – 3<sup>th</sup> Sept 2006 Participant of PCB Lab Equipment Laboratory Training, Germany, UMS.

12<sup>th</sup> Dec. 2005 Participant of Workshop on Roofing System Assessment, SKTM, UMS.

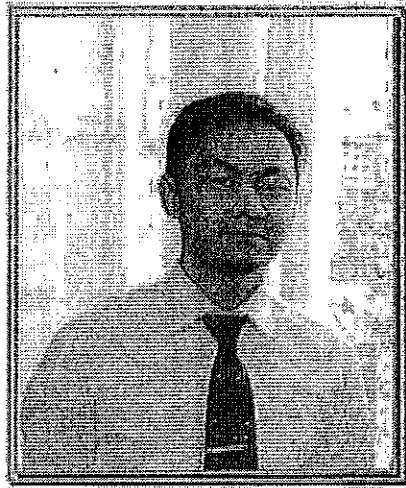
26<sup>th</sup> Sept – 1<sup>st</sup> Oct 2005 Participant of Bengkel Penilaian Tahap Kecekapan Tahap 3 (PTK3), Pejabat Pendaftar, UMS.

- 20<sup>th</sup> – 23<sup>rd</sup> Sept 2005 Participant of Training on TCAD Silvaco Software at Faculty of Electrical, UTM, Skudai, JB.
- 27<sup>th</sup> -28<sup>th</sup> March 2003 Participant of Training on XILINX Development & FPGA Board by Trans-Dist Engineering Sdn Bhd, SKTM, UMS.
- 17<sup>th</sup> – 18<sup>th</sup> March 2003 Participant of Training on TCAD Silvaco (Virtual Wafer Fabrication Tools) by Trans-Dist Engineering Sdn Bhd, SKTM, UMS.
- 11<sup>th</sup> -13<sup>th</sup> March 2003 Participant of Training on Tanner Tools Pro (IC Design Tools- Backend) by Trans-Dist Engineering Sdn Bhd, SKTM, UMS.
- 18<sup>th</sup> – 28<sup>th</sup> Feb 2003 Participant of Training on IC Design Software Technology: Synopsys by Trans-Dist Engineering Sdn Bhd, SKTM, UMS.
- 20<sup>th</sup> – 22<sup>nd</sup> Aug 2002 Participant of Training on Training for Trainers: Blackboard 5, SKTM, UMS.
- 18<sup>th</sup> April 2002 Participant of Training on Course on Solidworks 2001+ by IME Technology Sdn Bhd, SKTM, UMS.

**Academic Development**

- 8<sup>th</sup> June 2012 Participant of Program Kepimpinan Inovasi dan Transformasi Pensyarah Muda by AKEPT, Malaysia.
- 14 June 2012 Participant of Outcome Based Education (OBE) Talk Programme by Professor Dr. Mohammad, SKTM, UMS.
- 20 January 2012 Participant of Retreat Workshop Electrical & Electronics Engineering Program, School of Engineering & IT, UMS.
- 24 May 2012 Participant of Majlis Anugerah Kecemerlangan Staf UMS (MAKSUMS) 2012, Universiti Malaysia Sabah.
- 4<sup>th</sup> Nov. 2011 Participant of Student Centered Learning Workshop (PBL & Project Oriented PBL), UMS.
- 20<sup>th</sup> June 2011 Participant of Effective Post Graduate Supervision Course, UMTP, UMS.
- 27<sup>th</sup> – 28<sup>th</sup> Oct. 2011 Participant of Student Centered Learning (Case Study and Modular), UMS.
- 30<sup>th</sup> July 2012 Participant of Training on Trainers (Series 2) Course for Kejurulatihan Kokurikulum, PKPP UMS, Grand Borneo Hotel, KK, Sabah.
- 13<sup>th</sup> – 15<sup>th</sup> July 2011 Participant of Bengkel Kebangsaan Penilaian Keberkesanan Pelaksanaan Kokurikulum Berkredit 2011, MOHE, Seremban, Negeri Sembilan.
- 8<sup>th</sup> – 9<sup>th</sup> June 2005 Participant of Outcome Based Education Workshop, UMS, Shangri-La Resort, Kota Kinabalu, Sabah.
- 13<sup>th</sup> – 16<sup>th</sup> Jan 2005 Participant of 5<sup>th</sup> Workshop of Academic Management Matters & Quality Assurance, UMS, Hotel Perkasa, Kundasang, KK.
- 1<sup>st</sup> – 3<sup>rd</sup> May 2004 Participant of 4<sup>th</sup> Workshop of Academic Management Matters & Quality Assurance, UMS, Sabandar Resort, KK.

**CURRICULUM VITAE OF  
ASSOC. PROF. DR. N. NAFARIZAL,**  
*Senior Member IEEE, Member IET, Grad-IEM*



**BACKGROUND & BIOGRAPHY**

**Nafarizal Nayan** received the B. Eng., M. Eng. and PhD (Eng.) degrees in electrical and electronics engineering from Nagoya University, Japan, in 2003, 2005, and 2008, respectively. In 2005, he joined Universiti Tun Hussein Onn Malaysia (UTHM) as Lecturer during his Master Degree study at Nagoya University.

He is currently an Associate Professor at Faculty of Electrical and Electronic Engineering, Universiti Tun Hussein Onn Malaysia (UTHM). He is also the Head of Microelectronic and Nanotechnology - Shamsuddin Research Centre of UTHM. He has authored and co-authored more than 25 research papers in indexed journals and about 130 research papers in conference proceedings. In 2012, he was engaged to several national projects under Malaysian Technical Universities Network - Center of Excellence as Project Leader and Research Collaborator.

Between 2013 and 2015 he visited Hokkaido University, Japan as Foreign Researcher under Post-Doctoral Program of Ministry of Education Malaysia. His research project at Hokkaido University is on sputtering plasma using novel CZTS compound material. His current research interests include plasma diagnostics using optical spectroscopy techniques, thin film fabrication using plasma processing technique and development of new plasma device for surface modification.

## CURRICULUM VITAE OF ASSOC. PROF. DR. N. NAFARIZAL

### 1. PERSONAL DETAILS

Name: Nafarizal Bin Nayan  
Date of Birth: 30 December 1979 (38 year-old)  
Place of Birth: Bintong, Perlis  
Nationality: Malaysia  
Religion: Islam  
Marital Status: Married  
Office Address: Microelectronic and Nanotechnology – Shamsuddin  
Research Centre,  
Office for Research, Innovation, Commercialization and  
Consultation,  
Universiti Tun Hussein Onn Malaysia,  
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(+60)019-717-0001  
Fax: (+60)07-453-6060  
E-mail: nafa@uthm.edu.my  
nafarizal@gmail.com  
Webpage: <http://mint.uthm.edu.my/dryprocess>  
<http://mint.uthm.edu.my>  
<http://community.uthm.edu.my/nafa>

### 2. ACADEMIC QUALIFICATIONS

- \* Dr. Eng (Electrical Engineering and Computer Science), Nagoya University, Japan, March 2008
- \* M. Eng. (Electronics Engineering), Nagoya University, Japan, March 2005
- \* B. Eng. Electrical and Electronic Engineering and Information Engineering, Nagoya University, Japan, March 2003
- \* Rancangan Persediaan Khas ke Jepun, Asasi Sains Universiti Malaya, 1997-1998
- \* Sek. Men. Teknik Alor Star, Kedah, 1995-1996
- \* Sek. Men. Derma, Kangar, Perlis, 1992-1994
- \* Sek. Keb. Seri Tunjong, Chuping, Perlis, 1985-1991

### 3. PROFESSIONAL EXPERIENCE

April 2005 – 1 April 2009      Lecturer, Faculty of Electrical & Electronics  
Engineering, Universiti Tun Hussein Onn Malaysia

- |                            |  |
|----------------------------|--|
| 2 April 2009 – 28 May 2009 | Acting Senior Lecturer, Faculty of Electrical & Electronics Engineering, Universiti Tun Hussein Onn Malaysia   |
| 29 May 2009 – 24 July 2012 | Senior Lecturer, Faculty of Electrical & Electronics Engineering, Universiti Tun Hussein Onn Malaysia  |
| 4 Nov 2013 – 4 Nov 2015    | Foreign Researcher, Graduate School of Engineering, Hokkaido University, Japan   |
| 25 July 2012 – current     | <b>Associate Professor,</b><br>Faculty of Electrical & Electronics Engineering, Universiti Tun Hussein Onn Malaysia<br>&<br><b>Head and Principal Investigator,</b><br>Microelectronic and Nanotechnology - Shamsuddin Research Centre, Institute of Integrated Engineering, Universiti Tun Hussein Onn Malaysia |

#### 4. PROFESSIONAL AFFILIATIONS

1. Board of Engineer Malaysia (BEM), Graduate Engineer # GE-56285, Electrical
2. Institute of Engineers Malaysia (IEM), Graduate Member # G 42439, Electrical
3. Institute of Electrical and Electronics Engineers (IEEE), Senior Member # 90399836, Malaysia Section
4. Japan Society of Applied Physics (JSAP), Regular Member # 0062698
5. Association of Asia Pacific Physical Societies: Division of Plasma Physics #1348
6. The Institution of Engineering and Technology (UK), Member 1100452066
7. Asian African Association for Plasma Training, Designated Delegates
8. International Plasma Chemistry Society (IPCS)
9. IEEE Nuclear and Plasma Sciences Society
10. IEEE Industrial Electronics Society (2008-2010)
11. American Physical Society (APS)(2005-2011)
12. Institute of Electrical Engineering of Japan (2003-2008)

#### 5. MANAGEMENT & ADMINISTRATIVE POSTS

##### UNIVERSITY LEVEL

1. Head of Microelectronics and Nanotechnology – Shamsuddin Research Centre (MiNT-SRC), Office for Research, Innovation, Commercialization and Consultation, UTHM. Jan. 2013 - Sep. 2013 & Jan. 2017 - current
2. Head of Microelectronics and Nanotechnology – Shamsuddin Research Centre (MiNT-SRC), Faculty of Electrical and Electronic Engineering, UTHM. 2008-2012.
3. Head of Microelectronic Fabrication Laboratory/Clean Room, FKEE, UTHM. Jan 1, 2009-2012 & Jan 2017 - current
4. Member of Editorial Board of UTHM International Journal of Integrated Engineering. 2008-2013

5. Member of 'Center of Excellence' iPMO Universiti Tun Hussein Onn Malaysia. 2010-2013
6. Member of 'Research & Development' iPMO Universiti Tun Hussein Onn Malaysia. April 2009-2010.
7. Penasihat Akademik, FKEE, UTHM. Semester I Sesi 2008/2009-2013
8. Member of "Biro Aktiviti dan Persiapan Program Mesra Perdana", FKEE, UTHM, August 8, 2009
9. Member of Task Force for 'Development of Faculty of Integrated Medicine in UTHM', June 1, 2009.
10. Timbalan Ketua kumpulan CAP 'Center of Excellence' iPMO; Universiti Tun Hussein Onn Malaysia, 1 April 2011 – 31 Mac 2012.
11. Ahli Jawatankuasa Peperiksaan; Universiti Tun Hussein Onn Malaysia, 1 April 2011 – 31 Mac 2013.
12. Ahli Jawatankuasa Teknikal Inovasi, Pengkomersilan dan Perundingan; Universiti Tun Hussein Onn Malaysia, 20 Mei 2011 – 19 Jun 2013.
13. Ahli Jawatankuasa Teknikal Sebutharga Perkhidmatan Merekabentuk, Membekal, Menghantar, Memasang, Membuka dan Menguruskan Simpanan Booth untuk Pameran ITEX 2011 dan R&I Festival UTHM; 12 April 2011.
14. Perlantikan sebagai pensyarah, Fasilitator, Penyelia Projek Akhir, Penyelia Latihan Industri dan Penulis Modul INSEP 2010 Fasa 2.
15. Pegawai Penyelaras Hubungan Kerjasama Universiti antara Universiti Tun Hussein Onn Malaysia dan SHARP Manufacturing Sdn.Bhd.
16. Ahli Jawatankuasa Penilaian Teknikal Tender Universiti Tun Hussein Onn Malaysia.
17. Ahli Jawatankuasa Penerbitan Universiti Tun Hussein Onn Malaysia, 1 Nov 2010- 31 Nov 2012.
18. Pemeriksa dan Pengubal Kertas Jawapan Penilaian Pemahaman bagi Penilaian Tahap Kecekapan (Staf Bukan Akademik) Sesi 1 Tahun 2010.
19. Penggubal Soalan Penilaian Tahap Kecekapan (PTK) Staf Bukan Akademik Sesi I Tahun 2010.
20. Panel Penilai Pembentangan Program Doktor Falsafah (PhD) dan Sarjana secara Penyelidikan dan Kerja Kursus Semester II Sesi 2009/2010.
21. Ahli Jawatankuasa Perakuan Penerimaan Alat Fakulti Kejuruteraan Elektrik dan Elektronik.
22. Editor Buletin Teknikal Pusat Penyelidikan dan Inovasi (PPI).
23. Pensyarah Program Sarjana secara Kerja Kursus Semester 2 Sesi 2009/10.
24. Ahli Jawatankuasa Pembangunan Program Sarjana Sains Kejuruteraan Sistem Elektronik dan Instrumentasi Jabatan Kejuruteraan Elektrik, Fakulti Kejuruteraan Elektrik dan Elektronik.
25. Ahli Jawatankuasa Task Force Penuhunan Fakulti Sains Perubatan, Universiti Tun Hussein Onn Malaysia, 1 Jun 2009.
26. Panel Penilai Kertas Kerja Penyelidikan bagi MUCET 2009.
27. AJK Biro Aktiviti dan Persiapan Program Mesra Perdana: Penasihat Akademik (PA) dan Pelajar-pelajar PA Peringkat FKEE 2009.
28. Hakim Pertandingan Kreativiti dan Inovasi Semester 2 Sesi 2008/09; 6 April 2009.
29. Panel Pembentangan FKEE Industrial Experience Symposium 2009 (FIES'09); 1 April 2009.
30. Ahli Jawatankuasa Program Lawatan Profesor Pelawat Prof Madya Dr.Othman bin Sidek, Fakulti Kejuruteraan Elektrik & Elektronik Universiti Tun Hussein Onn Malaysia; 24 -28 Nov 2008.
31. Penasihat Akademik (PA); Semester 1 2008/09.

32. Panel Pembentangan FKEE Industrial Experiences Symposium 2008 (FIES 2008); 13-15 Ogos 2008.
33. Ahli Panel Akreditasi Program Sarjana Muda Kejuruteraan Elektronik (Mikroelektronik) dengan Kepujian (BED); 1 Mac 2012 – 28 Feb 2014.
34. Ahli Jawatankuasa Penyelidikan dan Inovasi FKEE: 1 Mac 2012 – 24 Okt 2013.
35. Organizing committee member at National Conference on Electrical and Electronic Engineering (NCEEE) 2012, Universiti Tun Hussein Onn Malaysia, 8-9 May 2012.

#### **NATIONAL AND INTERNATIONAL LEVEL**

1. Technical reviewer for IEEE Symposium on Industrial Electronics and Applications (ISIEA2009), October 4-6, 2009, Kuala Lumpur
2. Technical reviewer for IEEE Symposium on Industrial Electronics and Applications (ISIEA2010), October 3-6, 2010, Penang
3. Panel Penilaian Anugerah Mapim 2010; Kategori Makalah Jurnal Terbaik (Sains, Teknologi & Perubatan).
4. Chair Person, International Conferences on Nanotechnology-Research and Commercialisation (ICONT 2011), Grand Borneo, Sabah; 7-9 Jun 2011.
5. Chairperson, Malaysian Technical Universities International Conference (MUICET), Batu Pahat, 2011.
6. Committee and chair person, 2012 International Conference on Enabling Science and Nanotechnology (ESciNANO), Johor Bahru, Jan 5-7, 2012.
7. Session chair at the 2012 IEEE International Conference on Semiconductor Electronics (IEEE-ICSE2012), Kuala Lumpur Sept 19-21, 2012.
8. Technical committee for International Conference on Nanoscience and Nanotechnology 2013, Shah Alam, March 1-4, 2013.
9. Organizing committee for The 6<sup>th</sup> International Workshop on Plasma Application and Hybrid Functionally Materials, Park Royal Kuala Lumpur, March 8-11, 2013.
10. Technical committee and session chair for 2013 IEEE Regional Symposium on Micro and Nanoelectronics, Holiday Villa Langkawi, September 25-27, 2013.

#### **6. AWARDS**

- \* The most outstanding oral presenter in NANO-Scitech 2008, Malaysia
- \* Study leave award from UTHM, 2008
- \* Silver medal for the invention of "Digital IC Tester" at the R&I Fest 2008, UTHM, Malaysia. (co-researcher)
- \* Silver medal for the invention of "Fabrication of Dye-Sensitized Solar Cell Using Natural Dye Extracted Dragon Fruit" at Malaysia Technology Expo 2010.
- \* Bronze medal for the invention of "Mini Digital IC Tester" at Malaysia Technology Expo 2010. (co-researcher)
- \* Second prize for poster in Electrical and Electronic category at Malaysian Technical Universities Conference on Engineering and Technology (MUCEET) 2010.
- \* Best paper award in 2010 IEEE Student Conference on Research and Development (SCORED), 13-14 Dec 2010.

- Anugerah Penyelidik Universiti 2009.
- Silver medal for the "Precise Process Control for Nano-scale Thin Film PVD Deposition" at the 23<sup>rd</sup> International Invention, Innovation & Technology Exhibition ITEX 2012. Kuala Lumpur 17-19 May 2012.
- Bronze medal for "Nano-CuO: Highly sensitive and low power VOC sensor" at PECIPTA 2013, Kuala Lumpur 7-9 Nov 2013.
- Bronze medal for "Energy Saving Glass: Heat reduction and radio frequency selectivity for buildings" at UTHM R&I Festival, 20 Dec 2013.
- Anugerah Jasa Bakti 2014, 19 April 2015.
- Anugerah Khidmat Cemerlang 2016, 11 April 2017.

## 7. KEYNOTE/INVITED TALK

1. N. Nafarizal (2009), **Laser aided diagnostics of atoms ions and particulates in high pressure magnetron sputtering plasmas**. The 3<sup>rd</sup> International Meeting on Frontiers of Physics (IMFP). Awana Genting Highlands, Malaysia. January 12-16.
2. N. Nafarizal (2010), **When Engineer Meets Medical Scientist: Collaboration with Nanotechnology Research Center of UTHM Malaysia**. Workshop on Tissue Engineering in Universitas Gadjah Mada in conjunction with Asian BioCeramic Symposium, Yogyakarta, Indonesia. November 1-5.
3. N. Nafarizal (2012), **Microelectronic and Nanotechnology Research at MINT-SRC**. Sensor and Actuator Colloquium, Universiti Teknologi Malaysia, Skudai. 4<sup>th</sup> January 2012.
4. N. Nafarizal (2012), **Fundamental of plasma processing and its correlation with deposited thin film**. NET Colloquium, Universiti Teknologi MARA, Shah Alam. 24 February 2012.
5. N. Nafarizal (2015), **Issues of less-abundant composition of S atom in magnetron sputtered CZTS thin film**, The 20th Workshop on Advanced Plasma Processes and Diagnostics & The 7th Workshop for NU-SKKU Joint Institute for Plasma-Nano Materials, 27-29 Jan 2015.
6. N. Nafarizal (2016), **High pressure magnetron sputtering plasma for non-toxic and abundant CZTS thin film depositions**, International Seminar on Nanoscience and Nanotechnology 2016, 27 Feb 2016.
7. N. Nafarizal (2016), **KEYNOTE: Plasma processing technology for future solar device fabrication**, Joint International Conference - The 3rd International Conference on Nano Electronics Research and Education; The 8th Electrical, Electronics, Control, Communication, and Informatics Seminar (ICNERE-EEICIS 2016), 31 Oct - 2 Nov 2016.
8. N. Nafarizal (2017), **Study on titanium and compound CZTS films deposition processes using high-pressure magnetron sputtering plasmas**, The 8th International Conference On Nanoscience And Nanotechnology (NANO-SCITECH 2017), 24-27 Feb 2017.

## 8. PUBLICATIONS

*(Scopus Database, N. Nafarizal: Documents: 111, 210 total citations by 164 documents, H-index: 8)*

<http://www.scopus.com/authid/detail.url?authorId=8881976900>

[INTERNATIONAL JOURNAL]

1. Nafarizal N., Takada N., Nakamura K., Yoshida T. and Sasaki K. (2005). **Absolute densities of Ti atoms and Ti<sup>+</sup> ions in magnetron sputtering plasmas measured by laser-induced fluorescence.** *Trans. Mater. Res. Soc. Jpn.* 30(1): 299-302.
2. Gao J., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., Sugai H.. (2005). **Measurement of absolute Cu atom density in magnetron sputtering plasmas.** *Trans. Mater. Res. Soc. Jpn.* 30(1): 291-294.
3. Nafarizal N., Takada N., Shibagaki K., Nakamura K., Sago Y. and Sasaki K. (2005). **Two-dimensional distributions of Ti and Ti<sup>+</sup> densities in high-pressure magnetron sputtering discharges.** *Jpn. J. Appl. Phys.* 44(23): L737-L739.
4. Shibagaki K., Nafarizal N. and Sasaki K. (2005). **Spatial distribution of the velocity distribution function of Fe atoms in a magnetron sputtering plasma source.** *J. Appl. Phys.* 98(4): 043310.
5. Gao J., Nafarizal N., and Sasaki K. (2006). **Measurement of Cu atom density in a magnetron sputtering plasma source using a YBaCuO target by laser-induced fluorescence imaging spectroscopy.** *J. Vac. Sci. Technol. A* 24(6) Nov/Dec: 2100-2104.
6. Nafarizal N., Takada N., Nakamura K., Sago Y. and Sasaki K. (2006). **Deposition profile of Ti film inside a trench and its correlation with gas-phase ionization in high-pressure magnetron sputtering.** *J. Vac. Sci. Technol. A* 24(6) Nov/Dec: 2206-2211.
7. Nafarizal N., and Sasaki K. (2007). **Sticking probability of Ti atoms in magnetron sputtering deposition evaluated from the spatial distribution of Ti atom density.** *J. Vac. Sci. Technol. A* 25(2) Mar/Apr: 308-311.
8. Nafarizal N., Takada N. and Sasaki K. (2008). **Production of Ar metastable atoms in the late afterglow of pulse-modulated rf magnetron sputtering plasmas.** *J. Phys. D:Appl. Phys.* 41(3): 035206.
9. K. Sasaki, N. Nafarizal, J.-S. Gao and K. Shibagaki.(2008) **Are dominant sputtering products from metal target really monotomic?** *Vacuum* 83: 463-466.
10. N. Nafarizal, N. Takada and K. Sasaki (2009) **Investigations of production processes of Ti<sup>+</sup> in high-pressure magnetron sputtering plasmas.** *Jpn. J. Appl. Phys.* 48 (2009) 126003.
11. N. Nafarizal, N. Takada, K. Sasaki (2009) **Laser-aided diagnostics of atoms and particulates in magnetron sputtering plasmas.** *AIP Conference Proceedings* 1150: 174-179.
12. K. Sasaki and N. Nafarizal (2010) **Enhancement of Ti<sup>+</sup> density in high-pressure magnetron sputtering plasmas.** *J. Phys. D : Appl. Phys.* 43 (2010) 124012.
13. S. Isrihetty, S. Hashim and N. Nafarizal (2010) **Structural and electrical properties of TiO<sub>2</sub> thin film derived from sol-gel method using titanium (IV) butoxide.** *International Journal of Integrated Engineering* Vol.2 No. 3 pg 55-62 (Dec 2010).
14. M. A. Riyaz Ahmad and N. Nafarizal (2010) **Fabrication and analysis of dye-sensitized solar cell using natural dye extracted from dragon fruit.** *International Journal of Integrated Engineering* Vol.2 No. 3 pg 29-35 (Dec 2010).

15. Mohd Ezree Abdullah, Kemas Ahmad Zamhari, Nafarizal Nayan, Mohd Rosli Hainin and Madi Hermadi (2012) **Physical Properties and Storage Stability of Asphalt Binder Modified With Nanoclay and Warm Asphalt Additives**. World Journal of Engineering Vol. 9 No. 2 pg155-160.
16. N. Nafarizal and K. Sasaki (2012) **Synthesis characteristics of Cu particulates in high-pressure magnetron sputtering plasmas studied by in-situ laser-light scattering**. Journal of Physics D: Applied Physics. Vol. 42 Iss. 50 (2012) 505202.
17. Zulkifli Mohd Rosli, Zainab Mahamud, Jariah Mohamad Juoi, Nafarizal Nayan, Kwan Wai Loon, Yusliza Yusof and Hairul Effendy Ab Maulod (2013) **Corrosion behavior of AZ91 Mg-Alloy coated with AlN and TiN in NaCl and Hank's solution**. Advanced Materials Research Vol. 626. pg 275-279.
18. Zulkifli Mohd Rosli, Kwan Wai Loon, Jariah Mohamad Juoi, Nafarizal Nayan, Zainab Mahamud, Yusliza Yusof (2013) **Characterization of TiAlBN nanocomposite coating deposited via radio frequency magnetron sputtering using single hot-pressed target**. Advanced Materials Research Vol. 626. pg 298-301.
19. Soon C.F. Khaghani S. A., Youseffi M., Nayan N., Salm H., Britland S., Blagden N., Denyer M. C. T., (2013) **Interfacial study of cell adhesion to liquid crystals using widefield surface Plasmon resonance microscopy**. Colloids and Surfaces B: Biointerfaces Vol. 110 pg 156-162.
20. Jia Wei Low, Nafarizal Nayan, Mohd Zainizan Sahdan, Mohd Khairul Ahmad, Ali Yeon Md Shakaff, Ammar Zakaria, Ahmad Faizal Mohd Zain (2015) **Spectroscopic studies of magnetron sputtering plasma discharge in Cu/O<sub>2</sub>/Ar mixture for copper oxide thin film fabrication**. Jurnal Teknologi Vol. 73:1 pg 11-15.
21. Mohd Ezree Abdullah, Kemas Ahmad Zamhari, Rosnawati Buhari, Nurul Hidayah Mohd Kamaruddin, Nafarizal Nayan, Mohd Rosli Hainin, Norhidayah Abdul Hassan, Ramadhansyah Putra Jaya, Nur Izzati Md. Yusoff (2015) **A review on the exploration of nanomaterials application in pavement engineering**. Jurnal Teknologi Vol. 73:4 pg 69-76.
22. N. Nafarizal, S. Kikuchi, K. Sasaki (2015) **Sticking probabilities of Cu, Zn, Sn, and S atoms in magnetron sputtering plasmas employing a Cu<sub>2</sub>ZnSnS<sub>4</sub> stoichiometric target**. Vacuum Vol. 121 pg 26-31.
23. N. Nafarizal and K. Sasaki (2016) **Absolute densities of Cu, Zn, Sn and S atoms in magnetron sputtering plasmas employing a Cu<sub>2</sub>ZnSnS<sub>4</sub> target**. Japanese Journal of Applied Physics 55, 07LC02
24. M. H. Mamat, M. F. Malek, N. N. Hafizah, M. N. Asiah, A. B. Suriani, A. Mohamed, N. Nafarizal, M. K. Ahmad, M. Rusop (2016) **Effect of oxygen flow rate on the ultraviolet sensing properties of zinc oxide nanocolumn arrays grown by radio frequency magnetron sputtering**. Ceramics International, Vol 42, Issue 3, pg 4107-4119.
25. Lias, J. , Shahadan, S.A., Rahim, M.S.A., Nayan, N., Ahmad, M.K., Sahdan, M.Z. (2016) **Influences of deposition time on TiO<sub>2</sub> thin films properties prepared by CVD technique**. Jurnal Teknologi, Vol 78, Issue 10-3, pg 1-5.
26. Amiri, I.S. , Ahmad, H., Ghasemi, M., Ismail, M.F., Aidit, S.N., Soltanian, M.R.K., Nafarizal, N. (2016) **Silicon-based microring resonators for multi-solitons generation for THz communication**. Optical and Quantum Electronics Vol 48, Issue 8, 415.

[CONFERENCE ABSTRACTS AND PROCEEDINGS]

1. Nafarizal N., Shibagaki K., Nakamura K., Yoshida T. and Sasaki K. (2004), **Density distributions of titanium atoms and titanium ions in sputtering plasma employing a titanium target.** *21st Symposium on Plasma Processing*, Hokkaido, Japan, January 28-30, p.110-p.111.
2. Shibagaki K., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Visualization of density and velocity distributions of atoms in sputtering plasmas by laser-induced fluorescence imaging spectroscopy.** *21st Symposium on Plasma Processing*, Hokkaido, Japan, January 28-30, p.58-p.59.
3. Nafarizal N., Shibagaki K., Takada N., Sasaki K., Nakamura K. and Yoshida T. (2004). **Ionization processes of metal atoms in magnetron sputtering plasmas.** *Abstracts of 51<sup>st</sup> Spring Meeting, The Japan Society of Applied Physics and Related Society.* Tokyo, Japan. March 28-31.
4. Nakamura K., Nafarizal N., Sasaki K, and Yoshida T. (2004), **Plasma diagnostics of copper sputtering plasmas.** *Abstracts of 51<sup>st</sup> Spring Meeting; The Japan Society of Applied Physics and Related Society.* Tokyo, Japan. March 28-31.
5. Shibagaki K., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Two-dimensional LIF imaging spectroscopy of atom velocity distributions in magnetron sputtering plasmas.** *Abstracts of 51<sup>st</sup> Spring Meeting; The Japan Society of Applied Physics and Related Society.* Tokyo, Japan. March 28-31.
6. Shibagaki K., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Distribution of Fe atom density in a dc magnetron sputtering plasma source measured by laser-induced fluorescence imaging spectroscopy.** *Abstracts of 56th Annual Gaseous Electronics Conference*, San Francisco, USA, October 21-24, 47.
7. Nafarizal N., Shibagaki K., Takada N., Sasaki K., Nakamura K. and Yoshida T. (2004). **Density distributions of titanium atoms and titanium ions measured by laser-induced fluorescence in magnetron plasmas.** *Proceedings of International COE Forum on Plasma Science and Technology.* Nagoya, Japan. April 5-7, 137-138.
8. Shibagaki K., Nafarizal N., Sasaki K., Toyoda H., Kato T., Iwata S., Tsunashima S., and Sugai H. (2004). **Visualization of density and velocity distributions of atoms in dc magnetron sputtering plasmas by laser-induced fluorescence imaging spectroscopy.** *Proceedings of International COE Forum on Plasma Science and Technology.* Nagoya, Japan. April 5-7, 19-20.
9. Nafarizal N., Shibagaki K., Takada N., Nakamura K., Kobayashi M. and Sasaki K. (2004). **Visualization of metal sputtering plasmas by laser-induced fluorescence imaging spectroscopy.** *Abstracts of 7th Asia Pacific Conference on Plasma Science and Technology & Symposium on Plasma Science for Materials.* Fukuoka, Japan, June 29-July 2, 149.
10. Shibagaki K., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Visualization of spatial velocity distribution of atoms in magnetron sputtering plasmas by laser-induced fluorescence imaging spectroscopy.** *Abstracts of 7th Asia Pacific Conference on Plasma Science and Technology & Symposium on Plasma Science for Materials.* Fukuoka, Japan. June 29-July 2, 150.

11. Nafarizal N., Takada N., Nakamura K., Sasaki K. and Kobayashi M. (2004). Spatial distributions of Ti density, Ti<sup>+</sup> density, and plasma parameters in magnetron sputtering Ti plasmas. *65th JSAP Autumn Meeting*, Tohoku, Japan, September 1-4.
12. Gao J., Nafarizal N., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Density and velocity distributions of copper atoms in sputtering plasmas measured by laser-induced fluorescence spectroscopy.** *65th JSAP Autumn Meeting*, Tohoku, Japan, September 1-4.
13. Nafarizal N., Takada N., Nakamura K., Kobayashi M. and Sasaki K. (2004). **Ionization processes of Ti atoms in magnetron sputtering plasmas studied by laser-induced fluorescence imaging spectroscopy.** *Abstracts of 57th Annual Gaseous Electronics Conference*. Bunratty, Ireland. September 26-29, 33.
14. Gao J., Nafarizal N., Shibagaki K., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Visualized measurements of densities and velocities of Fe and Cu atoms in magnetron sputtering plasmas.** *Abstracts of 57th Annual Gaseous Electronics Conference*. Bunratty, Ireland. September 26-29, 52.
15. Kadota H., Namakura K., Nafarizal N., Sasaki K., and Kobayashi M. (2004). **Anomalous ionization of copper atoms in argon-based sputtering plasmas.** *Abstracts of AVS 51st International Symposium and Exhibition*, Anaheim, USA. November 14-19, 77.
16. Nafarizal N., Shibagaki K., Takada N., Nakamura K., Kobayashi M. and Sasaki K. (2004). **Ionization processes of metal atoms in high-pressure dc magnetron sputtering discharges.** *Abstracts of AVS 51st International Symposium and Exhibition*. Anaheim, USA. November 14-19, 77.
17. Sasaki K., Shibagaki K., Nafarizal N., Toyoda H., Kato T., Iwata S., Tsunashima S., and Sugai H. (2004). **2D-imaging measurements of sputtered atom velocities in dc magnetron discharges by Doppler-shifted LIF.** *Abstracts of AVS 51st International Symposium and Exhibition*. Anaheim, USA. November 14-19, 120.
18. Nafarizal N., Takada N., and Sasaki K. (2004). **Ionization of Ti atoms in high-pressure magnetron sputtering plasmas.** *15th Symposium of The Materials Research Society of Japan*, Tokyo Japan, December 23-24.
19. Gao J., Nafarizal N., Shibagaki K., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2004). **Measurement of absolute density of metal atoms in magnetron sputtering plasmas.** *15th Symposium of The Materials Research Society of Japan*, Tokyo Japan, December 23-24.
20. Nafarizal N., Takada N., Nakamura K., Yoshida T. and Sasaki K. (2005). **Effect of gas pressure on degree of ionization and fine-pattern deposition in ionized sputtering.** *Proceeding of Plasma Science Symposium 2005 / The 22nd Symposium on Plasma Processing*, Nagoya Japan, January 26-28, p.333-p.334.
21. Gao J., Nafarizal N., Shibagaki K., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2005). **Two-dimensional measurements of density and velocity distributions of metal atoms in magnetron sputtering plasmas.** *Proceeding of Plasma Science Symposium 2005 / The 22nd Symposium on Plasma Processing*, Nagoya Japan, January 26-28, p.81-p.82.
22. Nafarizal N., Takada N., Nakamura K., Sago Y. and Sasaki K. (2005). **Correlation between deposition characteristics on fine patterns and the results of plasma diagnostics using high-pressure magnetron sputtering plasmas.** *Extended Abstracts of 52nd JSAP Spring Meeting*, Saitama Japan, March 29-April 1.

23. Gao J., Nafarizal N., Shibagaki K., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2005). **Spatial distributions of absolute copper atom density in magnetron sputtering plasmas as a function of discharge parameters.** (In Japanese). *Extended Abstracts of 52nd JSAP Spring Meeting*, Saitama Japan, March 29-April 1.
24. Sasaki K., Nafarizal N., Gao J. S., Nakamura K. (2005), **Observations of copper particles in high-pressure magnetron sputtering plasmas.** (In Japanese). *Extended Abstracts of 52nd JSAP Spring Meeting*, Saitama Japan, March 29-April 1.
25. Nafarizal N., Takada N., Gao J. S., Nakamura K., Sago Y. and Sasaki K. (2005). **Diagnostics of ionized sputtering plasmas by two-dimensional laser-induced fluorescence.** *Proceedings of 8th International Symposium on Sputtering and Plasma Processing*. Kanazawa, Japan. June 8-10, 177-180.
26. Nakamura K., Kadota H., Nafarizal N., Sasaki K., and Yoshida T. (2005). **Efficient ionization of copper atoms and anisotropic deposition in trench employing argon-based sputtering plasma.** *Proceedings of 8th International Symposium on Sputtering and Plasma Processing*. Kanazawa, Japan. June 8-10, 250-253.
27. Gao J., Nafarizal N., Shibagaki K., Sasaki K., Toyoda H., Iwata S., Kato T., Tsunashima S., and Sugai H. (2005). **Two dimensional measurement of the uniformity of sputtered Cu atom density in magnetron sputtering plasmas.** *Proceedings of 8th International Symposium on Sputtering and Plasma Processing*. Kanazawa, Japan. June 8-10, 439-442.
28. Nafarizal N., Takada N., Nakamura K., Sago Y. and Sasaki K. (2005). **Enhancement of ionization efficiency by high-pressure discharge of a conventional magnetron sputtering plasma source.** *Abstracts of 27th International Conference on Phenomena in Ionized Gases*. Eindhoven, The Netherlands. July 17-22, 37.
29. Nafarizal N., Takada N., Sasaki K., Nakamura K. and Sago Y. (2005). **Effects of the gas pressure and the distance between the target and the substance to the deposition profiles in fine-patterns by ionized sputtering technique.** *Proceedings of "Deutschland in Japan Jahr" Plasma Science and Technology Symposium*. Nagoya, Japan. September 19, 1.
30. N. Nafarizal, N. Takada, K. Nakamura, Y. Sago and K. Sasaki (2005). **Effects of the gas pressure and the distance between the target and the substrate to the deposition profiles in fine-patterns by ionized sputtering technique.** *2005 Autumn JSAP Annual Meeting*, Tokushima, Japan, 7-11 September 2005.
31. J. S. Gao, N. Nafarizal, K. Sasaki, H. Toyoda, M. Inoue, A. Fujimaki, S. Iwata and H. Sugai, **Temporal variation of the spatial distribution of the Cu atom density in magnetron sputtering plasmas using a YBaCuO target.** *2005 Autumn JSAP Annual Meeting*, Tokushima, Japan, 7-11 September 2005.
32. N. Nafarizal and K. Sasaki, **Sticking probability of Ti atoms in sputtering deposition evaluated from precise measurement of the density distribution.** *2005 IEEE-J Tokai-branch Annual Meeting*, Nagoya, Japan, 15-16, September 2005.
33. J. S. Gao, N. Nafarizal, K. Sasaki, H. Toyoda and H. Sugai, **Optical emission intensities of copper and yttrium in magnetron sputtering plasmas using a YBaCuO target.** *2005 IEEE-J Tokai-branch Annual Meeting*, Nagoya, Japan, 15-16, September 2005.
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  39. Nafarizal N. and Sasaki K. (2006). **Sticking probability of Ti atoms in magnetron sputtering plasmas evaluated from the precise measurement of the density distribution.** *Proceedings of 6th International Conference on Reactive Plasmas and 23rd Symposium on Plasma Processing*. Matsushima, Japan. January 24-27, 121-122.
  40. Gao J., Nafarizal N., Sasaki K., Toyoda H., Inoue M., Fujimaki A., Iwata S., and Sugai H. (2006). **Temporal variations of the Cu atom density in magnetron sputtering plasmas using a YBaCuO target and pure Ar or Ar/O<sub>2</sub> mixture.** *Proceedings of 6th International Conference on Reactive Plasmas and 23rd Symposium on Plasma Processing*. Matsushima, Japan. January 24-27, 763-764.
  41. N. Nafarizal and K. Sasaki, **Experimental evaluation of the sticking probability of Ti atoms in sputtering deposition.** *2006 Spring JSAP Annual Meeting*, Tokyo, Japan, 22-26 March 2006.
  42. Nafarizal N. and Sasaki K. (2006). **Surface loss coefficient of sputtered Ti atoms on planar substrate investigated by laser-induced fluorescence technique.** *Proceedings of 2nd International COE Forum on Plasma Science and Technology*. Potsdam, Germany. May 3-6, 29.
  43. Nafarizal N. and Sasaki K. (2006). **Experimental evaluation of sticking probability of titanium atoms in magnetron sputtering deposition.** *Abstracts of 18th Europhysics Conference on the Atomic and Molecular Physics of Ionised Gases*. Lecce, Italy. July 12-16, 427-428.
  44. N. Nafarizal, N. Takada, K. Nakamura, Y. Sago and K. Sasaki. (2006) **Temporal and spatial distributions of Ti and Ti<sup>+</sup> densities in pulsed rf sputtering plasmas.** *67<sup>th</sup> JSAP Autumn Meeting*, Ritsumei University, Shiga, 29 August – 1 September 2006.
  45. K. Sasaki, N. Nafarizal, J. S. Gao, K. Shibagaki, H. Toyoda, S. Iwata, T. Kato, S. Tsunashima, and H. Sugai. (2006) **Experimental evidence showing gas-phase production of metal atoms in magnetron sputtering plasmas.** *67<sup>th</sup> JSAP Autumn Meeting*, Ritsumei University, Shiga, 29 August – 1 September 2006.
  46. J. S. Gao, K. Sasaki, N. Nafarizal, H. Toyoda, S. Iwata, T. Kato, S. Tsunashima, and H. Sugai, (2006) **Comparison between Cu atoms densities at the**

- metastable and ground states in magnetron sputtering plasmas. 67<sup>th</sup> JSAP Autumn Meeting, Ritsumei University, Shiga, August 2006.
47. N. Nafarizal, N. Takada, K. Nakamura, Y. Sago and K. Sasaki, (2006) **Ti and Ti<sup>+</sup> density distributions in the afterglow of pulse rf sputtering plasma.** 2006 IEEE-J Tokai-branch Annual Meeting, Gifu, Japan, 28-29 September 2006.
  48. J. S. Gao, K. Sasaki, N. Nafarizal, H. Toyoda, S. Iwata, A. Fujimaki, S. Tsunashima, and H. Sugai, (2006) **Absolute density measurements of Cu atoms at ground and metastable states in magnetron sputtering plasmas.** 2006 IEEE-J Tokai-branch Annual Meeting, Gifu, Japan, 28-29 September 2006.
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  50. Nafarizal N. and Sasaki K. (2006). **Evaluation of sticking probability of Ti atoms in sputtering deposition.** *Proceedings of AVS 53rd International Symposium.* San Francisco, USA. November 12-17, 156.
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139. N. Nafarizal and K. Sasaki (2015), **Ratio of Cu, Zn, Sn and S densities in magnetron sputtering plasma employing a stoichiometric  $\text{Cu}_2\text{ZnSnS}_4$  target.** 68 th Annual Gaseous Electronics Conference/9th International Conference on Reactive Plasma/33rd Symposium on Plasma Processing, Honolulu, Hawaii, 12-16 October 2015.
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141. Nafarizal Nayan, Mohd Khairul Ahmad, Mohd Zainizan Sahdan, Low Jia Wei, Jais Lias, Ali Yeon Md Shakaff, Ammar Zakaria and Ahmad Faizal Mohd Zain (2015), **Sputter Deposition of Cuprous and Cupric Oxide Thin Films Monitored by Optical Emission Spectroscopy for Gas Sensing Applications.** 11th Asian Conference on Chemical Sensors (ACCS 2015), Penang, 16-18 November 2015.
142. Nafarizal Nayan, Mohd Zainizan Sahdan, Low Jia Wei, Mohd Khairul Ahmad, Jais Lias, Soon Chin Fhong, Ali Yeon Md Shakaff, Ammar Zakaria and Ahmad Faizal Mohd Zain (2015), **Correlation between Microstructure of Copper Oxide Thin Films and Its Gas Sensing Performance at Room Temperature.** 11th Asian Conference on Chemical Sensors (ACCS 2015), Penang, 16-18 November 2015.

## 9. COURSES, TRAINING AND WORKSHOPS ATTENDED

1. Basic and leading edge technology of laser and plasma technology, 22 December 2006, by The Japan Society of Plasma Science and Nuclear Fusion Research, at Tokyo University, Japan
2. Canon ANELVA Internship Program, 2008, Tokyo Japan. (person in charge: Mr. Yasumi Sago, Manager of Process Technology Dept.)
3. Innovation & Commercialization : Showcase & Seminar 2008, 9 April 2008, by PPI, at DTII UTHM

4. Kursus Asas Pengajaran dan Pembelajaran Staf Akademik Baru, 29 May – 26 June 2008, by CAD, at Universiti Tun Hussein Onn Malaysia
5. Kursus Induksi Khusus & Umum Kumpulan Pengurusan dan Profesional, 15-26 June 2008, by Universiti Tun Hussein Onn Malaysia, at Bidara Putri Beach Resort, Melaka
6. E-learning Blackboard 8.0 Course, 10 July 2008, by CAD, UTHM, at MKE 2, UTHM
7. Kursus Biro Tatanegara, 17-21 July 2008, by Biro Tatanegara Jabatan Perdana Menteri, Felcra Tebing Tinggi, Johor
8. 5S Training Course, 31 July 2008, by FKEE, UTHM, at UTHM
9. Kursus Kenegaraan Khusus, 16 September 2008, by Akademik Kepimpinan Pengajian Tinggi, at Putrajaya International Convention Center
10. NI Labview and ELVIS training, 2 December 2008, by National Instruments Singapore, at MRSD, UTHM
11. Bengkel Perdana Sciencefund 2008, by UTHM; 4-5 Jun 2008
12. Seminar Raman Spectroscopy; Bilik Seminar 3 UTHM; 30 Jul 2008
13. Workshop on X-Ray Diffraction application techniques, 16 December 2008, by Bruker Malaysia Sdn. Bhd., at Katerina Hotel, Batu Pahat
14. Program Kenegaraan "Towards A Glorious Nationhood"n Anjuran AKEPT; PICC; 16 Sept 2008
15. Forum Kelestarian Masyarakat, 12 February 2009, by CEC, UTHM at DTII, UTHM
16. Awareness Seminar on Nanotechnology : Promise and Risk, 26-27 May 2009, SIRIM Training Services, Shah Alam
17. NANotech Malaysia 2009, 26-29 October 2009, Kuala Lumpur Convention Center, Kuala Lumpur
18. Bengkel Perkongsian Maklumat Kepakaran Sains Perubatan Universiti Tun Hussein Onn Malaysia, 31 Julai – 1 Ogos 2009.
19. Peserta 8<sup>th</sup> Malaysia Invention & Innovation Awards 2009 Sempena Pameran Malaysia Technology EXPO 2009 (MTE'09); Pusat Dagangan Dunia Putra, Kuala Lumpur; 19-21 Feb 2009.
20. Seminar on Research-LED Universities by Sir Brian Smith, Cardiff University, United Kingdom Anjuran Akademi Kepimpinan Tinggi (AKEPT); Hotel Marriot, Putrajaya; 18 Feb 2009.
21. Training on DC & RF magnetron sputtering system, 29 April 2010, MiNT-SRC, UTHM, Johor.
22. Malaysia Technology Expo 2010, 4-6 February 2010, PWTC, Kuala Lumpur
23. Training on Reactive Ion Etching (RIE) BEP. 5002 SNTEK, 29 April 2010, MiNT-SRC, UTHM, Johor.
24. Thin Film Technology Workshop, 7&8 April 2011, organized by Zectron Sdn Bhd, University of Malaya.
25. Leadership Development and Teambuilding Course, 26-28 June 2011, organized by Pushing Boundary, M Suite Hotel, Johor Baru.
26. Kursus Biro Tatanegara-Jabatan Perdana Menteri, 21-24 October 2011, Akademi Kenegaraan, Kuala Lumpur.
27. Kursus Effective Googling, 19-20 Mac 2012, Makmal Komputer PTM 1, UTHM.
28. Kursus Perlindungan Sinaran Mengion, 26-27 September 2012, Pejabat Pendaftar UTHM.
29. Research Methodology & Supervision by Prof. Dr. Zainai UMK, 11 Jan. 2013, UTHM.

## 10. TEACHING

- UTHM, BEE 2113 Electronic Principles, Semester 1 Session 2008/2009 and Semester 1 & 2, Session 2009/2010
- UTHM, BEE 2191 Electrical Engineering I Laboratory, Semester 1 Session 2008/2009
- UTHM, BEE 2273 Electronic Devices and Applications, Semester 2 Session 2008/2009 and Semester 1 & 2, Session 2010/2011
- UTHM, BEE 2291 Electrical Engineering II Laboratory, Semester 2 Session 2008/2009
- UTHM, MKE2233 Nanoelectronics Technology, Semester 1, Session 2009/2010
- UTHM, MKE1233/MEN10503 Nanoelectronics Technology, Semester 2, Session 2009/2010 and Semester 2 Session 2010/2011
- UTHM, MKE 2012 Master's Laboratory, Semester 1 Session 2009/2010
- UTHM, MKE 1011 Master's Laboratory, Semester 2 Session 2010/2011
- UTHM, BPK 4032 Engineers and Society, Semester 1, Session 2010/2011
- UTHM, BEL 10103 Electric Circuits, Semester 1, Session 2011/2012
- UTHM, BEE 1803 Asas Elektrik dan Elektronik, Semester 1, Session 2011/2012
- UTHM, MEE 10900 Research Methodology, Semester 1, Session 2011/2012
- UTHM, BED 40603 Micro Fabrication, Semester 3, Session 2011/2012
- UTHM, BEL 10103 Electric Circuits, Semester 1, Session 2012/2013
- UTHM, BED 30203 Digital IC Design, Semester 1, Session 2012/2013
- UTHM, BEL 10103 Electric Circuits, Semester 1, Session 2012/2013
- UTHM, MEN10503 Nanoelectronics Technology, Semester 2, Session 2012/2013
- UTHM, BDA 143030 Electric and Electronic Technology, Semester 1, Session 2016/2017
- UTHM BED 40801 Microelectronics Engineering Laboratory, Semester 1, Session 2016/2017.
- UTHM BEE 22302 Entrepreneurship, Semester 2, Session 2016/2017.

## 11. SUPERVISIONS

### [PHD LEVEL]

*As co-supervisor,*

1. Budi Astuti; Universiti Teknologi Malaysia, 2009/2010-graduated
2. Mohd Ezree bin Abdullah; Universiti Tun Hussein Onn Malaysia, 2010-graduated
3. Sharul Ashikin bte Kamaruddin; Universiti Tun Hussein Onn Malaysia, 2011-on going
4. Shaharin Fadzli Abd Rahman; Universiti Teknologi Malaysia, 2011-graduated
5. Farahiyah Mustafa; Universiti Teknologi Malaysia, 2011-graduated

6. Masturah Shafinaz binti Zainal Abidin; Universiti Teknologi Malaysia, 2011-graduated
7. Foo Kai Loong; Fabrication and Characterization of SOI based Biologically Sensitive Field-Effect Transistor (Bio-FET) for Bio-Molecule Detection; Universiti Malaysia Perlis, 2009/10-graduated

**[MASTER LEVEL]**

*As main supervisor;*

1. Riyaz Ahmad Bin Mohamed Ali; Fabrication of metal oxide thin film using high-pressure magnetron sputtering deposition.2009/2010-graduated
2. Farisal Bin Abdullah; Optimization of fault isolation and localization tools for integrated circuit failure analysis technique.2009/2010-graduated
3. Lim Huey Sia; Fabrication of FSS structure and evaluation of microwave transmission on e-saving glass. 2012-graduated
4. Low Jia Wei; Copper oxide deposition using magnetron sputtering for gas sensor application. 2012-graduated
5. Elfa Rizan binti Rizon HE150028; Dielectric Barrier Discharge System as a New Technique of Sterilization on Dental Tools. 2015-on going

*As co-supervisor;*

1. Sharul Ashikin Binti Kamaruddin; Zinc oxide nanostructure: Effects of deposition parameter on the electrical properties using Sol-Gel method. Graduated 2008/2009
2. Isrihetty @ Siti Salmah Binti Senain; Fabrication and characterization of TiO<sub>2</sub> thin film using low cost sol-gel technique for solar cell application.2009/2010
3. Zainab binti Mahamud; Characterisation Studies of TiAlB(N) PVD Nanocomposite Hardcoating. Universiti Teknikal Melaka, 24 Ogos 2010.
4. Nurul Izni binti Rusli; Universiti Teknologi Malaysia, 2011.
5. Kwan Wai Loon; Characterisation studies of TiAlB (N) PVD Nanocomposite hard coating;Universiti Teknikal Melaka; 27 April 2011.
6. Amir bin Sidek. (Penyelia Utama: Dr Rashidah Arsat, FKE) Universiti Teknologi Malaysia, 2012.
7. Mas Elyza binti Mohd Azol (Penyelia Utama: Dr Rashidah Arsat, FKE) Universiti Teknologi Malaysia, 2012.
8. Soo Ren How (Penyelia Utama: Dr. Jais Lias UTHM), 2014-on going

**[BACHELOR LEVEL]**

*As main supervisor;*

1. Nurul Hana Binti Abu Hassan; Fabrication and characterization of Al thin film in Al evaporation process. 2008/2009
2. Nurul Ikhwan Binti Adnan; Characterization of diffusion process in diffusion furnace module of NMOS transistor fabrication. 2008/2009
3. Riyaz Ahmad Bin Mohamed Ali; Effect of thermal processes on Al thin film fabricated by Al evaporation. 2008/2009
4. Shahrmy Azurfin Bin Abdul Samad; A prototype of low-cost gas flow measurement unit. 2008/2009
5. Shafinaz Binti Ismail; Fabrication and characterization of oxidation thin film in oxidation furnace module. 2008/2009

6. Mohd Khairul Muzhafar Bin Md. Nor; Fabrication of thin film using a modified Physical Vapor Deposition (PVD) module. 2008/2009
7. Siti Hajar Binti Mangsor; Development of new rice processing technique using nanotechnology.2009/2010
8. Norhayati Binti Mahat; Development of zinc oxide thin film and zinc oxide nanostructure using vacuum evaporator. 2009/2010
9. Mohd Faez Bin Md Yusof; Development of security system for microelectronic laboratory of UTHM.2009/2010
10. Al Qadir Mohamoud Jibril; Optimization of electrical and morphology properties on TiO<sub>2</sub> film for solar cell application.2009/2010
11. Andreas Albert Anak Raniah; Optimization of DC and RF magnetron sputtering plasma using Zn target. 2010/2011
12. Ang Tse Terk; Fabrication of ZnO thin film using RF magnetron sputtering plasma deposition. 2010/2011.
13. Sharifah Amirah binti Amir Shariffuddin; Microelectronic and Nanotechnology, 2010/11.
14. Salwa binti Omar; Microelectronic and Nanotechnology, 2010/11.
15. Norhadilla binti Hassan; Microelectronic and Nanotechnology, 2010/11.
16. Siti Azulainey binti Mhd Aslan; Microelectronic and Nanotechnology, 2010/11.

## **12. PANEL EXAMINER / REVIEWER**

### **[SYMPOSIUMS AND CONFERENCES]**

1. Session chairperson at National Conference on Electrical and Electronic Engineering (NCEEE) 2012. Universiti Tun Hussein Onn Malaysia. 8-9 May 2012.
2. Technical reviewer for IEEE Symposium on Industrial Electronics and Applications (ISIEA2010), October 3-6, 2010, Penang
3. Technical reviewer for IEEE Symposium on Industrial Electronics and Applications (ISIEA2009), October 4-6, 2009, Kuala Lumpur,
4. Examiner for Pertandingan Kreativiti dan Inovasi Semester II Sesi 2008/2009, April 6, 2009, Dewan Terbuka, UTHM
5. Examiner for FKEE Industrial Experience Symposium 2009 (FIES 2009), April 1, 2009, FKEE Complex, UTHM
6. Examiner for FKEE Industrial Experience Symposium 2008 (FIES 2008), August 13-15, 2008, FKEE Complex, UTHM

### **[PHD LEVEL EXAMINER]**

1. Pratama Jujur Wibawa, Investigation on the Physical Changes of Irradiated Phystry Change, 2010.

### **[MASTER LEVEL EXAMINER]**

1. Aiza Mahyuni Binti Mozi, An Evaluation on the Contribution of Common Mode and Differential Mode Currents in Radiated Emission.2009
2. Nabillah Binti Adam, Quality of Service Routing for Mobile Ad Hoc Network using Fuzzy Logic.2009
3. Intan Sue Liana Binti Abdul Hamid, Reynolds Number Effects in Designing a Micromixers for Bio MEMS Application.2008
4. Radzi bin Ambar, Design & Development of Monitoring Device for Arm Rehabilitation. 2010

5. Farizan Binti Mohamad, Fabrication of periodic nanoparticles arrays as biological material trapping devices for application as biosensor. 2010
6. Mohd Ubaidillah Bin Mustaffa, Investigation of Electron Beam Penetration Into Polystyrene Experimental and Simulation. 2010
7. Nor Rashidah Binti Juremi, Electrically Enhancement of Methane Oxide Chemical Reaction with Periodic Nanoparticle Arrays Catalyst. 2010

**[BACHELOR LEVEL EXAMINER]**

1. Azhar Bin Ramli, Auto Selecting Recycle Rubbish (ASRR). 2008/2009
2. Mohd Aizar Bin Abdullah@Dollah, Ampaian Pintar Menggunakan PIC 16F87. 2008/2009
3. Wan Muhammad Riddwan Bin Wan Ahmad, Sistem Meramal Kehadiran Banjir. 2008/2009
4. Ahmad Luqman@Firdaus Bin Ab Patah, CMOS Cantilever Sensor Systems. 2008/2009
5. Syazmir Bin Jamaludin, Characterization of Silicon Isotropic Etching for Microneedle Design. 2008/2009
6. Saifuddin Bin Yahaya, Survival Detector at the Site of Disaster. 2008/2009.
7. Al Qadir Mohamoud Jibril, Optimization of Electrical and Morphology Properties of TiO<sub>2</sub> Film for Solar Cell Application. 2010/2011.
8. Mohd Akmal bin Adam; Electrically Enhance Chemical Reaction System Fabrication of Automated Gas Value System. 2009/10
9. Mohd Arman bin Jamaludin; Fabrication of Chemical Reaction Chamber with Multi Sensor System. 2009/10
10. Muhammad Uzair bin Esa'; Design and Simulation of Shear Stress Piezoresistive Sensor for Flow Control. 2009/10
11. Noor Saimidatul bt Sais; Fabrication of PMOS with Doping Characteristic. 2009/10
12. Halimah bt Halim; Characterization of SU-8 Etching for Microchannel Fabrication. 2009/10
13. Muhamad Huzaimi bin Abdul Ghafar; Characterization of Glass Etching for Via Fabrication. 2009/10
14. Mohd Ihsan Ramlan; Automatic Fishing Reel Using PIC16F84A. PSM2, Sem 1 Sesi 2011/2012
15. Mohd Najib Suleiman; Silicon Etching using RIE (2D analysis). PSM2, Sem 1 Sesi 2011/2012
16. Mohd Nashmen Hasan; Silicon Etching using RIE (3D analysis). PSM2, Sem 1 Sesi 2011/2012
17. Helmi Anuar Bin Md Ali; Portable Solar Data Logging Device. PSM2, Sem 1 Sesi 2011/2012
18. Mohamad Fikri Ismail; Egg Incubator using Fuzzy Logic System. PSM2, Sem 1 Sesi 2011/2012

**13. AS JOURNAL REVIEWER**

1. Reviewer for Plasma Sources Sciences and Technology, IOP Publishing (2010).
2. Reviewer for International Journal of Integrated Engineering Vol 1 No 3 (2010) and Vol 2 No 3 (2011).
3. Reviewer for International Journal of Green Energy (2011).
4. Reviewer for Plasma Source Science and Technology, IOP Publishing (2015).

5. Reviewer for Journal of Physics D: Applied Physics, IOP Publishing (2015).

#### 14. RESEARCH GRANTS

1. UTHM Short Term Grant - RM 10,000.00: Studies on high-pressure magnetron sputtering plasmas for thin film deposition. (**Project Leader**) 1 Julai 2008 – 30 Jun 2009.
2. Fundamental Research Grant Scheme (FRGS): Fabrication, characterization and optimization of first in-house MOSFET transistor using spin on dopant technique. (**Researcher**) 2007-2009
3. Graduate Incentive Scheme (GIS), UTHM – RM 74,700: Fabrication of metal and metal oxide thin films using high-pressure magnetron sputtering deposition (HP-MSD). (**Project Leader**) 1 August 2009- 31 July 2011.
4. Fundamental Research Grant Scheme (FRGS) – RM 50,000: Characterization and optimization of metal and metal oxide thin films fabricated by high-pressure magnetron sputtering deposition technique. (**Project Leader**) 1 November 2009- 31 October 2011.
5. Fundamental Research Grant Scheme (FRGS): Fabrication and characterization of aluminum doped zinc oxide (ZnO) thin films using chemical vapor deposition. (**Researcher**) 1 November 2009- present
6. Contract Grant by Ministry of Higher Education: Kajian berkaitan kaedah penerimaan ahli sains sebagai ahli badan professional kejuruteraan. (**Researcher**) 1 Oktober 2009 – 30 September 2010.
7. Fundamental Research Grant Scheme (FRGS): Fundamental studies on the effect of magnetic field on stem cells behavior and differentiation. (**Researcher**) 1 March 2010 – 28 February 2012.
8. Exploratory Research Grant Scheme (ERGS) – RM 231,000.00: Investigation on vapor phase epitaxy processes for growth of nitride-based wide bandgap semiconductor thin-films. (**Researcher**) July 2011-June 2014.
9. Exploratory Research Grant Scheme (ERGS) – RM 150,000.00: High isoelectric point nanorod arrays for quantum wire based biosensor and ultraviolet detection. (**Researcher**) 1 July 2011-30 June 2013.
10. UTHM Short Term Grant Vot 1076– RM10,000.00; Optical emission spectroscopy analysis in copper sputtering plasma during the fabrication of cuprous oxide thin film. (**Project Leader**) 1 Julai 2012 – 31 Disember 2013.
11. COE MTUN FASA 1/2012 C023 – RM 58,000.00; Program in collaboration with UniMAP and UMP: Nature inspired solutions for green building system. (**Project Leader**) 1 Julai 2012 – 30 Jun 2014.
12. COE MTUN FASA 1/2012 C020– RM 38,200.00; Program in collaboration with UniMAP and UMP: Development of nano lab on chip diagnostics system for E-coli pathogen detection. (**Researcher**) 1 Julai 2012 – 30 Jun 2014.
13. COE MTUN FASA 1/2012 C024 – RM 62,500.00; Program in collaboration with UTeM and UniMAP: Microwave transmission friendly E-saving glass: Fabrication of FSS structure and evaluation of microwave transmission on E-saving glass. (**Project Leader**) 1 Julai 2012 – 30 Jun 2014.
14. FRGS FASA 1/2013 – RM 107,000.00; Ionization mechanism of titanium atom during the growth of titanium nitride thin film in reactive magnetron sputtering plasma (**Project Leader**) 1 April 2013 – 31 March 2016.

15. ERGS 2013 – RM 130,000.00; Dielectric barrier discharge system as a new technique of sterilization on dental tools (**Project Leader**) 1 Jun 2013 – 31 May 2016.
16. CREST 2017 - RM779,100.00; Development of highly ionized physical vapor plasmas system for controlled III-V compound thin film deposition (**Project Leader**) September 2017 – August 2020.

## 15. RESEARCH INTERESTS

1. Plasma processes technology – Magnetron sputtering plasma, Plasma-enhanced CVD, Atmospheric pressure plasma.
2. Plasma diagnostics technology – Laser Induced Fluorescence (LIF), Laser Light Scattering (LLS), Langmuir Probe Measurement, Optical Emission Spectroscopy (OES).
3. Thin film deposition technology – Spin coating, Furnace system, PVD system.
4. Thin film analysis – Scanning electron microscope, Atomic force microscope.
5. Low cost and green solar cell fabrication using plasma process.

## 16. SKILLS

- Japanese Language Proficiency Test - Level 1 (highest level)
- Microsoft Office (Word, Excel, PowerPoint, Outlook)
- C programming and LATEX language
- CANVAS graphic design
- Kaleida Graph & Origin data analysis software
- Hiden Langmuir Probe analysis and measurement

## 17. CONSULTATIONS

1. Instructor for Industrial Skills Enhancement Programme (INSEP) 2008.
2. Penceramah untuk program "Surviving a PhD"; 26 Mac 2009.
3. Technology provider for Japanese Associate Degree program by Yayasan Ilmuwan. Appointed on January 10, 2010.
4. Instructor for "Training on Microelectronics, Semiconductor Process, and Nanotechnology for VLSI Application", 2-6 August 2010.
5. Instructor for "Training on Langmuir Probe analysis for Sputtering System in UITM Shah Alam": Nanorian Technologies Sdn Bhd, 22-23 October 2010.
6. Instructor for Industrial Skills Enhancement Programme (INSEP) 2010.
7. Perunding bagi Ketua Makmal Fabrikasi Mikroelektronik dari KuTECH Sdn Bhd, April 2010 – Disember 2010.
8. Instructor for Digital VLSI Logic Circuit using Tanner Tools for ADTEC Taiping, 14-17 Jun 2011.
9. Penyelaras Kursus; VLSI Failure Analysis, IC Fabrication and Microelectronic Packaging, 25 April – 6 Mei 2011.

10. Instructor for VLSI Failure Analysis, IC Fabrication and Microelectronic Packaging for KKTM Beranang, 25 April – 6 Mei 2011.
11. Penilai Luar Bagi Sistem Pentaksiran Pengajian Politeknik, KPT. 26 Ogos 2011 – 26 Ogos 2013. Ruj. KPT.JPP(O).602-1/1/7/1(70)

#### **18. OTHER CONTRIBUTIONS**

1. Vice-president of UMNO Club, Tokai-Region Japan, Session 1999/2000.
2. Organizing Committee for International Student Workshop on Plasma Science and Technology, November 28<sup>th</sup>, 2006.
3. Organizing Committee of Program Motivasi Pelajar di Nagoya Jepun, 2005-2008.
4. Invited speaker on 'Student's Life in Malaysia' for Japanese students in Nihon Fukushi University (preparation orientation for an exchange program). Nihon Fukushi University (NFU), Aichi, Japan, and August 2, 2005.
5. Invited speaker on "Surviving a PhD", FKEE, Universiti Tun Hussein Onn Malaysia, Mac 26, 2009.
6. Co-organize with Academy of Science Malaysia: 11<sup>th</sup> Dr Ranjeet Bhagwan Singh Memorial Lecture in Institute for Medical Research, Kuala Lumpur, 14 July 2009.
7. Ahli Jawatankuasa Majlis Jalinan Mesra (KOURYUKAI) bersama Konsulat Jepun, 18 Jun 2010.
8. Pengadil Jemputan Pertandingan Rekacipta Kejohanan antara Teknik (KAT) 2010, 8 Mei 2010.
9. Speaker at Knowledge Sharing Seminar Series 1/2012, FKEE Complex, 27 June 2012.

