

WAN WARDATUL AMANI WAN SALIM

CURRICULUM VITAE

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Summary

Multidisciplinary engineer and researcher, project manager, and educator with strong background in nanotechnology, biomedical, electrical, and materials engineering. Thrives under pressure with proven delivery and execution experience in time-sensitive, mission critical projects working with domain-leading organisations such as NASA. Passionate and engaging public speaker for youth and STEM engagement, addressing varied audiences such as K-12 students and corporate and government bodies. Currently pursuing entrepreneurship initiatives in scaling up and creating impact in clean water generation, medical and environmental monitoring, energy storage, security and defence, as well as other applications of current research work in order to drive sustainable radical innovation in Malaysia with a view towards global impact.

Education

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|-----------|--|--------------------|
| Dec 2009 | Ph.D. Biomedical Engineering
Purdue University
Dissertation: Biomolecule Patterning Techniques for Integrated Bio-systems.
Field of expertise: Micro/nanotechnology, bioMEMS/NEMS, biosensors | West Lafayette, IN |
| Sept 2003 | M.Sc. in Electrical Engineering
University of Minnesota
Dissertation: Inductive-link Modeling and Design Guidelines for Integrated Power Microsystems. | Minneapolis, MN |
| Sept 2001 | B.Sc. in Electrical Engineering
University of Minnesota
Senior Project: Anodic Cell for Porous Silicon Fabrication and its Application in RF MEMS. | Minneapolis, MN |

Professional Experiences

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|------------------------|--|------------------------|
| May 2014 –
current | Assistant Professor DS51
Associate Professor DS54 (effective within one month)
Department of Biotechnology Engineering (BTE), Faculty of Engineering
International Islamic University Malaysia (IIUM)
Research & Innovation:
Multidisciplinary approaches for the development of advanced sensor technologies, utilizing new materials through nanotechnology, biochemistry, and material science research.
Currently on industrial attachment – developing a non-invasive sensor technology for biomedical and environmental application with FDNANO Ventures Ltd, a nanotechnology-based company. | Kuala Lumpur, Malaysia |
| June 2020 –
current | Administrative
Deputy Director, Innovation and Commercialization, IIUM | |

- Involve in revision of policy for advancing commercialization at IIUM
- Analyzes research of IIUM academics that can be pushed to prototyping and commercialization stage
- Engaged with industries for potential commercialization of researchers' products
- Develop training for researchers on commercialization to fulfil IIUM strategic needs

Jan 2018- **Deputy Director, Research & Innovation, IIUM**

- July 2018
- Involved in revision of policy for advancing research and innovation at IIUM
 - Developed and presented a proposal on the formation of a mini-incubator at IIUM
 - Analyzed research of IIUM academics that can be pushed to prototyping and commercialization stage
 - Engaged with industries for potential commercialization of researchers' products
 - Founded and lead Pitch Your Product program at IIUM (<http://www.iium.edu.my/PYP/2017/>)

Jan 2017- **Deputy Director, Grants Initiatives, IIUM**

- Jan 2018
- Coordinate workshop on writing successful national and international grants
 - Solicit new grants opportunities
 - Initiate with new funders for grant opportunities (e.g. Islamic Development Bank, US\$500 million Science, Technology & Innovation (STI) fund)

Jan 2016- **Head of International, IIUM**

- Jan 2018
- Engage with international organizations to form collaboration with IIUM in aspect of education and research exchange programs
 - Coordinate students exchange programs
 - Coordinate visits from international visitors

March 2012-
May 2014

Principal Investigator of SporeSat (www.sporesat.org)

Department of Agricultural and Biological Engineering, Birck-Bindley Physiological Sensing Facility (PSF), Purdue University

Responsible for the leadership and management of SporeSat – an autonomous, free-flying 3U spacecraft that will be used to investigate the gravitational threshold for calcium ion channel activation in the fern spore, *Ceratopteris richardii*.

Worked with graduate students on the development of bioCD rotating assembly, a lab-on-a-chip with ion-sensing capability in a centrifuge format.

Performed testing of bioCD and integration with hardware and software at NASA Ames Research Center (ARC), Moffett Field, CA.

Presented project reviews to NASA management, engineers and scientists at NASA ARC, Moffett Field, CA.

SporeSat was launched for spaceflight on April 22, 2014 aboard a Falcon 9 launching from Cape Canaveral, Florida (see:

www.sporesat.org). The experiment takes ~ 4 days; data was telemetered to Earth over ~ 100 days.

West Lafayette, IN

Jan. 2010 **Postdoctoral Researcher, Faculty Fellow, Course Instructor**
May 2012 School of Engineering Education, Purdue University

West Lafayette, IN

Aug. 2007 **Teaching Assistant**
Dec 2007 School of Engineering Education, Purdue University

West Lafayette, IN

Aug 2005 Dec 2009	Graduate Research Assistant Weldon School of Biomedical Engineering, Purdue University	West Lafayette, IN
Jan 2004 Aug 2005	Graduate Research Assistant School of Electrical and Computer Engineering, Purdue University	West Lafayette, IN
Sept 2003 Jan 2004	Graduate Research Assistant Department of Electrical and Computer Engineering, University of Minnesota	Minneapolis, MN
Jan 2000 Sept. 2001	Undergraduate Research Assistant Department of Electrical and Computer Engineering, University of Minnesota	Minneapolis, MN
Jan 2000 Sept 2001	Intern Electrical Engineer Tenaga Nasional Berhad (TNB)	Penang, Malaysia

Awards/Honors and Activities

2019, Community Engagement Award from Kulliyah of Engineering, IIUM, TAKRIM 2019
2018, Iclif Leadership Energy Award (Corporate category, 2nd runner up)
2018, Organized a one-day program for Southeast Asian Scholars for Higher Education (SEASHEL) under AKEPT
2017, **Hijrah Innovation Award** from Penang State Government, Malaysia
2017, Calon Wirawati Negara
2017, Nominated Delegate, Commonwealth Royal Society Conference, Singapore
2017, Chairman, Pitch Your Product 2017
2016, Ikon Puteri Islam Kebangsaan
2016, Chairman, Pitch Your Product 2016
2016, Supervisor to the IIUM Chemical Engineering Car Competition
2016, IIUM Chemical Engineering Car Competition National Committee
2015, Nominated for Great Women of Our Time for Science & Technology Category for Malaysian Women's Weekly
2015, L'Oreal-UNESCO Women in Science Award. Project Title: Graphene-based Immuno-Biosensor for *In-situ* Water Assessment (International)
2015, TEDxKL Speaker
2015, Best Speaker Award for presenting the paper **entitled** *Ion-selective Electrode Biochip for Applications in a Liquid Environment*. In: International Conference for Innovation in Biomedical Engineering and Life Sciences, 6-8 December 2015, Pullman, Putrajaya, Malaysia.
2015, 2014 Academic Staff of IIUM (ASA) Committee, organized the first Save the River Innovation Competition for Earth Day 2015 (reported in Malaysia local news, Utusan Malaysia and Sinar Harian)
2015, Supervisor to the IIUM Chemical Engineering Car Competition (for the first time IIUM entered the and won 2nd place for Poster, and 13, 14 place out of 56 teams. Both cars were developed from RM 200 budget
2015, PROTON National Automobile technical talk, Invited Speaker
2014, The first Malaysian to launch Nanosatellite in Space microgravity (www.sporesat.org)
2013 Biosensors & Bioelectronics OMICS Conference Session Chair for the Sensors & Biosensors Division
2012 Thora W. Halstead Young Investigator Award, American Society for Gravitational and Space Research (International) *This award was established in 1994 to honor a young scientist who exemplifies Thora's drive and enthusiasm for science, and who has made significant contributions to the field of gravitational and space research. The award is dedicated to Dr. Thora Halstead in recognition of the years she spent encouraging young scientists to enter gravitational and space research.*
2012 Women in Aerospace Day at the Smithsonian (representative for women of NASA)
2012 Sigma Xi 2nd Place, Postdoctoral Researcher category best poster award (author)
2012, 2013 Institute of Biological Engineering (IBE) Session Chair for the Sensors and Biosensors Division
2012 Center for Instructional Excellence (CIE), Purdue University, Participant in the Engineering Focus Group
2012 Student Soybean and Corn Innovation Competition, Purdue University, Co-Advisor
2011 American Society and Space Biology (ASGSB) Honorable Mention poster award (co-author)
2011 Summer Undergraduate Research Fellowship (SURF), Purdue University, Research Mentor
2011 Biomedical Engineering Graduate Student Research Symposium, Purdue University, Panelist
2011, 2013 Birck Nanotechnology Center Nanodays, Purdue University, Volunteer
2011, 2012 Gifted Education Research Institute (GERI), Instructor
2010 NASA Facilitate Access to Space-Flight Technology (FAST) Flight Program, Participant (reported in Malaysia local news, Utusan Malaysia and Sinar Harian)
2010 American Society for Gravitational and Space Biology (ASGSB), Education Outreach

2010 Institute of Biological Engineering (IBE) 2nd Place poster award, (co-author)
2008 Gifted Education Research Institute (GERI) Instructor
2001 Electrical Engineering Honors Society Fellowship recognition
2001-2003 Malaysian Government Scholarship to pursue Masters of Science Degree
1996-2001 Malaysia National Electrical Power Company (TNB) Scholarship to pursue undergraduate education (50 students were accepted nationwide)

Selected Keynote/Invited Speaker/Public Speaker

2020, UNISZA Mawar Conference
2019, Sarawak Energy Leading Women Network (SELWN)
2019, Bank Negara Malaysian Insight Series
2019, IME Solidworks Innovation Day
2019, Engineering Technology Exhibition (EngiTex)
2019, 1st National Seminar on and Forum on Youth Empowerment
2019, FAB Leadership Symposium
2018, Iclif Leadership and Governance Center, Speaker at Leadership Energy Summit 2018
2018, Panelist, Muslim Youth Conference
2018, Keynote, The 6th ASEAN Future Leaders Summit
2018, Keynote Speaker, Johor Students Leaders
2018, Keynote Speaker, Halal Penang
2018, Keynote Speaker, Halal Bangkok
2018, Invited Speaker, UNITEN
2018, Invited Speaker, UKM (MajalahSains)
2017, Invited to teach a short course at University of Manchester. Talk title: Design and Fabrication of Biochemical Sensors for Environmental, Short Courses on Contaminated Land and Water, University of Manchester, UK
2017, Invited Speaker, 3rd ISTIC Biennial International Conference on Women in Science, Technology, and Innovation (STI). Innovative Solution by Women for UN Sustainable Development Goals 2016-2030
2017, Speaker, Malaysia Youth Council
2017, Speaker, Google Malaysia
2017, Invited Speaker, IEEE Women in Engineering Leadership Conference
2017 Invited Speaker, MOSTI NICE

Professional Affiliations

Academic Staff Association IIUM (ASA-IIUM)
American Society for Gravitational and Space Research (ASGSR)
American Society for Gravitational and Space Biology (ASGSB)
American Chemical Society (ACS)
Materials Research Society (MRS)
American Society for Engineering Education (ASEE)
Institute of Biological Engineering (IBE)
Engineering Medical and Biology Society (EMBS)
HKN Purdue Electrical Engineering Honors Society (HKN-Purdue)
Women in Engineering Program (WIEP)
Society of Women Engineers (SWE)
Weldon School Biomedical Engineering Alumni Association, Purdue University
Malaysian Student Association Purdue Chapter Alumni (MSA-Purdue)
University of Minnesota Alumni Association
Purdue University Alumni Association

Research Interests

Development of lab-on-a-chip microfabricated devices for physiological sensing.
Application of electrochemical sensor platforms in biomedical, agricultural, environmental, and space biology research areas.
Polarity development in plant and mammalian cell systems, especially looking into normal cells vs. mutant or cancer-like cells.

Packaging development of sensor platforms in applications in harsh environments (e.g. space environment, pipe distribution system)

Engineering education: Problem formulation of real-world engineering-based problem solving through the lenses of the novice-expert and structure-behavior-function frameworks.

Publications (Selected Peer Reviewed Journal Articles)

Zayd Ahmad Shahizam, Abdel Mohsen Benoudjit, Nurnazihah Mohamad, Firdaus Abd-Wahab, **Wan Wardatul Amani Wan Salim** (2020). Morphology of electrospun PVA nanofibers enhanced with graphene oxide, Poly (3,4-ethylenedioxythiophene): polystyrene sulfonate (PEDOT:PSS), and multiwalled carbon nanotubes. *Experimental and Theoretical Nanotechnology*.

Abdel Mohsen Benoudjit, Ihda Uswatun Shalihah Shohibuddin, Afidalina Tumian, **Wan Wardatul Amani Wan Salim** (2020). Comparative study of cyclic voltammetry and cycle stability of electropolymerized poly (3,4-ethylenedioxythiophene) poly(sodium 4-styrenesulfonate) on screen-printed carbon and platinum electrodes in aqueous media. *Test Engineering and Management*, 83 (May-June), pp. 1033-1040. ISSN 0193-4120

Firdaus Abd-Wahab, Habibah Farhana Abdul Guthoos, **Wan Wardatul Amani Wan Salim** (2019). Solid-State rGO-PEDOT:PSS Transducing Material for Cost-Effective Enzymatic Sensing. *Biosensors*, MDPI, 9(1), 36; <https://doi.org/10.3390/bios9010036>

Nur Alya Batrisya Ismail, Farrah Aida Arris, **Wan Wardatul Amani Wan Salim** (2019). Preliminary study on the effect of reduced graphene oxide, gold nanoparticles, and Nafion® concentration on redox peak current for electrochemical biosensing. *Journal of Engineering and Science Technology (JESTEC)*, *Taylors University*, 14(1), pp. 48-58.

Habibah Farhana Abdul Guthoos, Nik Nurfatun Noorin, Nur Alya Batrisya Ismail, Afidalina Tumian, and **Wan Wardatul Amani Wan Salim** (2018). Effect of gold nanoparticles and electrode drying time on reduced graphene oxide-based composite with respect to peak current of cyclic voltammetry. *ARPN Journal of Engineering and Applied Sciences*, 13 (4). pp. 1420-1426. ISSN 1819-6608

Abdel Mohsen Benoudjit, Mamoun M. Bader, **Wan Wardatul Amani Wan Salim** (2018). Study of electropolymerized PEDOT:PSS transducers for application as electrochemical sensors in aqueous media. *Sen. Biosens. Res.*, 18-24. ISSN 2214-1804.

Emir Aslam Thopatalam, Abdel Mohsen Benoudjit, Nasteho, Al, Nur Alya Batrisya Ismail, and **Wan Wardatul Amani Wan Salim** (2017). Effectiveness of multi-walled carbon nanotubes and activated carbon for capturing E. coli 0157:H7 for application in water filtration. *Journal of Engineering and Applied Sciences*. pp. 1-16. ISSN 1816-949x (In Press)

Fahmi Sanober, **Wan Wardatul Amani Wan Salim** (2017). Nanomaterial biocompatibility and antimicrobial effects on *Escherichia coli*. *Asia Pacific Journal of Molecular Biology*, 25(1), 1-4. ISSN 0128-7451.

Fathilah Ali, Jia Jia Long, **Wan Wardatul Amani Wan Salim** (2017). Electrochemical characterization of polylactic acid-block-poly (2-Vinylpyridine)/gold nanoparticle composites for glucose biosensor development. *IJUM Engineering Journal*, vol. 18, no. 2, 34-41. ISSN 1511-788X.

Abdel Mohsen Benoudjit, **Wan Wardatul Amani Wan Salim** (2017). PEDOT:PSS composite as a robust biosensor transducer for applications in liquid media. *IJUM Engineering Journal*, vol. 18, no. 2, 1-5. ISSN 1511-788X.

J. Park, M. L. Salmi, **W. W. A. Wan Salim**, A. Rademacher, B. Wickizer, A. Schooley, J. Benton, A. Cantero, P. F. Argote, M. Ren, M. Zhang, D. M. Porterfield, A. J. Ricco, S. J. Roux and J. L. Rickus (2017). An autonomous lab on a chip for space flight calibration of gravity-induced transcellular calcium polarization in single-cell fern spores. *Lab Chip*, 17, 1095-1103.

Silvia Chowdhury, Faridah Yusof, **Wan Wardatul Amani Wan Salim**, Nadzril Sulaiman & Mohammad Omer Faruck (2106). An Overview of Drug Delivery Vehicles for Cancer Treatment: Nanocarriers And Nanoparticles Including Photovoltaic Nanoparticles, *Journal of Photochemistry & Photobiology, B: Biology*, 164, 151-159, DOI: 10.1016/j.jphotobiol.2016.09.013

Wan Wardatul Amani Wan Salim, Andrew C. Hermann, Michael A. Zietchek, Jonathan E. Pfluger, Joon H. Park, Aeraj ul Haque, Fahmi Sanober, and D. Marshall Porterfield (2015). Ion-selective electrode biochip for applications in a liquid environment. In: *International Federation for Medical and Biological Engineering (IFMBE)*. Springer, Singapore, pp. 86-93. ISBN 978-981-10-0265-6

Chaturvedi, P., Taguchi, M., Burns, S. L., Hauser, B. A., **Salim, W. W. A. W.**, Clausen, J. C., McLamore, E. S. (2013). Emerging Technologies for Non-Invasive Quantification of Physiological Oxygen Transport in Plants. *Planta*, 238.

Wan Salim, W. W. A., Zeitchek, M. A., Hermann, A. C., Ricco, A. J., Tan, M., Selch, F., Fleming, E., Bebout, B. M., Bader, M. M., Ul Haque, A., Porterfield, D. M. (2013). Multi-analyte biochip (MAB) based on All-solid-state Ion-selective electrodes (ASSISE) for Physiological Research. *J. Vis. Exp.*, 74.

Wan Salim, W. W. A., Diefes-Dux, H. A. (2012). Problem Formulation within Open-Ended Problems: Looking through the Structure, Behavior, Function (SBF) and Novice-Expert (NE) Frameworks. *Procedia Social and Behavioral Sciences Journal*, 56.

Diefes-Dux, H. A., **Wan Salim, W. W. A.** (2012). Transforming the First-Year Engineering Experience through Authentic Problem-Solving: Taking a Models and Modeling Perspective. *Procedia Social and Behavioral Sciences Journal*, 56.

Ding, Z., **Salim, A.**, and Ziaie, B. (2009). Squeeze-film hydrogel deposition and dry micropatterning. *Analytical Chemistry*, 82(8).

Ding, Z., **Salim, A.**, and Ziaie, B. (2009). Selective nanofibers patterning via electric field-enhanced electrospinning. *Langmuir*, 25(17).

Salim, A., Ding, Z. and Ziaie, B. (2009). Micromachined Adjustable Hydrogel Stamper for Soft Printing of Biomolecules with Adjustable-Feature Dimensions. *Analytical Chemistry Technical Notes*, 81.

Salim, A., Son, C. and Ziaie, B. (2008). Selective Nanofiber Deposition via Electrodynamic Focusing. *Nanotechnology*, 19.

Research Books

Farrah Aida Arris, **Wan Wardatul Amani Wan Salim** (2017) Optimization and characterization of graphene nanocomposites for glucose biosensors. IIUM Press, International Islamic University Malaysia, Kuala Lumpur, Malaysia. ISBN 978-967-418-470-4

Fahmi Sanober, **Wan Wardatul Amani Wan Salim** (2017) Fabrication and characterization of graphene-based immunosensor. IIUM Press, International Islamic University Malaysia, Kuala Lumpur, Malaysia. ISBN 978-967-418-469-8

Benoudjit Abdelmohsen, **Wan Wardatul Amani Wan Salim** (2017) Robust electrochemical transducer using conductive polymer (PEDOT:PSS) composite for glucose biosensor application. IIUM Press, International Islamic University Malaysia, Kuala Lumpur, Malaysia. ISBN 978-967-418-471-1

Book Chapters

Jia Jia Long, Abdel Mohsen Benoudjit, Farrah Aida Arris, Fathilah Ali, **Wan Wardatul Amani Wan Salim** (2018). Polymers in Biosensors. In *Multifaceted Protocol in Biotechnology*, ISBN 978-981-13-2256-3. Springer

Farrah Aida Arris, Abdel Mohsen Benoudjit, Fahmi Sanober, **Wan Wardatul Amani Wan Salim** (2018). Characterization of Electrochemical Transducers for Biosensor Applications, ISBN 978-981-13-2256-3. In *Multifaceted Protocol in Biotechnology*. Springer

Nur Alya Batrisya Ismail, Firdaus Abd-Wahab, Nurul Izzati Ramli, **Wan Wardatul Amani Wan Salim** (2018). Electrochemical Methods to Characterize Nanomaterial-Based Transducers for the Development of Noninvasive Glucose Sensors. *Nanotechnology: Applications in Food and Energy*, ISBN: 978-3-319-99601-1, Springer.

Michael A. Daniele, Maria Pedrero, Stephanie Burrs, Prachee Chaturvedi, **Wan Wardatul Amani Wan Salim**, Filiz Kuralay, Susana Campuzano-Ruiz, Eric McLamore, and Jonathan C. Claussen (2015). Part III Nanomaterial Functionalization and Nanobioelectronics. Hybrid Metallic Nanoparticles: Enhanced Bioanalysis and Biosensing via Carbon Nanotubes, Graphene, and Organic Conjugation. *Nanobiosensor and Nanobioanalyses*, V1 (295), Springer.

Wan Salim, W. W. A., Park, J. H., Ul Haque, A., Porterfield, D. M. (2013). Lab-on-a-chip Approaches for Space-Biology Research. *Recent Patents on Space Technology*, 3(1), Bantam Press.

Selected Technical Conference Proceedings (peer reviewed)

Ismail, N. A. B., Abd-Wahab, F., **Wan Salim, W. W. A.** (2018). Cyclic Voltammetry and Electrochemical Impedance Spectroscopy of Partially Reduced Graphene Oxide-PEDOT:PSS Transducer for Biochemical Sensing. Proceeding of the IEEE EMBS Conference on Biomedical Engineering and Sciences (IECBES 2018), 3-6 December 2018, Sarawak, Malaysia.

Nurul Izzati Ramli, Firdaus Abd-Wahab, **Wan Wardatul Amani Wan Salim** (2018). Characterization of Enzymatic Glucose Biosensor in Buffer Solution, in Artificial Saliva, and in Potassium Ferricyanide by Linear Sweep Voltammetry. AIP Proc. of the 3rd International Sciences, Technology & Engineering Conference (ISTEC) – Material Chemistry, 17-18 April 2018, Penang, Malaysia.

Nasteho Ali Ahmed, Nurul Izzati Ramli, Nurfatin Azma Abdul Jalal, Firdaus Abd-Wahab, **Wan Wardatul Amani Wan Salim** (2018). Quantifying *E. coli* O157:H7 via Linear Sweep Voltammetry in Phosphate Buffered Saline and Tap Water. *Proc. of the: 5th International Conference on Biotechnology Engineering 2018 (ICBioE 2018)*, 18-19th September 2018, Kuala Lumpur.

Guthoos, H. F. A., Ramli, N. I., **Wan Salim, W. W. A.** (2018). Cyclic Voltammetry Study of Reduced Graphene Oxide-PEDOT:PSS Composite (2018). *Proc. of the 2th IEEE International Conference on Intelligent Systems Engineering (ICISE)*, 20-21 March 2018, Kuala Lumpur, Malaysia

Arris, F. A., Ithnin, M. H., **Wan Salim, W. W. A.** (2016). Characterizing Graphene-modified Electrodes for Interfacing with Arduino[®]-based Devices. *Proc. of the 38th The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'16)*, Disney's Contemporary Resort, Lake Buena Vista, Orlando, Florida, USA.

Arris, F. A., **Wan Salim, W. W. A.** (2016). Electrochemical Characterization of Graphene-based Transducers for Biosensor Development, *Proc. of the: 4th International Conference on Biotechnology Engineering 2016 (ICBioE 2016)*, 25th-27th July 2016, Kuala Lumpur.

Ithnin, M. H., Arris, F. A., **Wan Salim, W. W. A.** (2016). *Portable Arduino[®] Platform for Electrochemical Sensors*, *Proc. of the: 4th International Conference on Biotechnology Engineering 2016 (ICBioE 2016)*, 25th-27th July 2016, Kuala Lumpur.

Benoudjit, A M., Abdul Guthoos, H. F., Arris, F. A., **Wan Salim, W. W. A.** (2016). *PEDOT:PSS Composite Deposited on a Microplatinum Electrode as a Robust Biosensor Transducer for Applications in Liquid Media*. *Proc. of the: 4th International Conference on Biotechnology Engineering 2016 (ICBioE 2016)*, 25th-27th July 2016, Kuala Lumpur.

Sanober, F., Ahmad, S. K., **Wan Salim, W. W. A.** (2016) *Nanomaterial Biocompatibility and Antimicrobial Effects on Escherichia coli*. *Proc. of the: 4th International Conference on Biotechnology Engineering 2016 (ICBioE 2016)*, 25th-27th July 2016, Kuala Lumpur.

JiaJia, L., **Wan Salim, W. W. A.**, Ali, F. (2016). *Electrochemical characterization of polylactic acid-block-poly(2-vinylpyridine)/gold nanoparticle (aunp) composites for glucose biosensor development*. *Proc. of the: 4th International Conference on Biotechnology Engineering 2016 (ICBioE 2016)*, 25th-27th July 2016, Kuala Lumpur.

Wan Wardatul Amani Wan Salim (2015). Ion-selective Electrode Biochip for Applications in a Liquid Environment. *Proc. of the: International Conference for Innovation in Biomedical Engineering and Life Sciences (ICIBEL 2015)*, 6-8 December 2015, Pullman, Putrajaya, Malaysia. (Best Speaker Award)

Salim, A. (2015). Electrochemical Sensor Packaging for Integrated Microsystems, *International Microelectronics Packaging Society (IMAPS)*, Rutherford Appleton Laboratory, Didcot, UK, March 5th 2015 (Invited Speaker)

Salim, A., Park, J., Rickus, J., Benton, J., Brownston, L., Cote, M., Defouw, G., Henschke, M., Kitts, C., Luzzi, E., Mai, N., Martinez, A., Perez, M., Porterfield, M., Rademacher, A., Rasay, M., Ricco, A., Roux, S., Salmi, M., Schooley, A., Sweet, A., Wickizer, B. (2014). SporeSat : A Nanosatellite Platform Lab-on-a-chip System for Investigating gravity Threshold of Fern Spore Calcium Currents. *Proc. of Hilton Head Workshop 2014 : A Solid State Sensors, Actuators and Microsystems Workshop*, Hilton Head Island, South Carolina, USA. (Most selective)

Rakesh, A., Wu. Ruoxi, **Wan Salim, W. W. A.**, Bank, M. K. (2014). Operation of Mobile Sensors for Monitoring Municipal Drinking Water Distribution Systems. *Proc. of the World Environmental & Water Resources Congress*, Portland, OR. (Highly selective)

Wu, R., **Wan Salim, W. W. A.**, Malhotra, S., Brovont, A., Pekarek, S., Banks, M. K., Porterfield, D. M. (2013). Self-powered Mobile Sensor for in-pipe Potable Water Quality Monitoring. MicroTAS : *Proc. of the 17th International Conference on Miniaturized Systems for Chemistry and Life Science*, Freiburg, Germany. (Most selective)

Wan Salim, W. W. A., Park, J. J., Ricco, A. J., Martinez, A., Schooley, A., Ricks, B., Rademacher, A., Benton, J., Porterfield, D. M. (2013). SporeSat : A Micro-satellite Lab-on-a-chip System for Studying Single-Cell Electrophysiology. *ASIASENSE International Conference on Sensors*, Melaka, Malaysia.

Perelman, L, **Wan Salim, W. W. A.**, Wu, R., Park, J., Ostfeld, A., Banks, M. K., Porterfield, D. M. (2013). Enhancing Water Distribution System Security through Water Quality Mobile Sensor Operation. *Proc. of the World Environmental & Water Resources Congress*, Cincinnati, OH. (Highly selective)

Salim; A., Ding; Z., Ziaie, B. (2007). A hydrogel stamper with expandable height and built-in reservoirs for patterning biomolecules on 3D topologies. *Proc. of the IEEE 20th International Conference on MEMS*, pp. 513 - 516, Kobe, Japan. (Most selective)

Salim; A., Huang, X., Humad; S., Ziaie, B. (2005). An adjustable force soft-contact lithography for patterning biomolecules on 3D topologies. *Proc. of the IEEE 18th International Conference on MEMS*, pp. 770-774, Miami, Florida. (Most selective)

Lei, M., **Salim, A.**, Siegel, R., Ziaie, B. (2004). A hydrogel-actuated microvalve for smart flow control. *Proc. of the IEEE Engineering Medical Biology Society(EMBS) Vol. 5*, pp. 2041-4, San Francisco, California. (Most selective)

Salim, A., Baldi, A., Ziaie, B. (2003). Inductive link modeling and design guidelines for optimum power transfer in implantable wireless microsystems." *Proc. of the IEEE Engineering Medical Biology Society (EMBS) Vol. 4*, pp. 3368-3371, Cancun Mexico.

Engineering Education Conference Proceedings (peer reviewed)

Wan Salim, W. W. A., Diefes-Dux, H. A. 2012. Problem formulation within open-ended problems: looking through the structure, behavior, function (SBF) and novice-expert (NE) frameworks. *Regional Conference on Engineering Education & Research In Higher Education*, Technology University of Malaysia, Johor, Malaysia.

Wan Salim, W. W. A., Diefes-Dux, H. A. 2012. Problem formulation within open-ended problems: looking through the structure, behavior, function (SBF) and novice-expert (NE) frameworks. *Regional Conference on Engineering Education & Research In Higher Education*, Technology University of Malaysia, Johor, Malaysia.

Diefes-Dux, H., **Wan Salim, W. W. A.** 2012. Transforming the first-year engineering experience through authentic problem-solving: Taking a model and modeling perspective. *Regional Conference on Engineering Education & Research In Higher Education*, Technology University of Malaysia, Johor, Malaysia.

Salim, A., Diefes-Dux, H. 2011. Model-Eliciting-Activities (MEAs) as sites for postdoctoral researcher training in course instruction and development. *American Society of Engineering Education (ASEE) International Conference*, Vancouver, B. C., Canada.

Merugureddy, R., Diefes-Dux, H., Cardella, M., **Salim, A.** 2011. Feedback and assessment of student work on model-eliciting activities: Teaching assistants' perceptions and strategies. *American Society of Engineering Education (ASEE) International Conference*, Vancouver, B. C., Canada. (oral presentation)

Merugureddy, R., Cardella, M., Diefes-Dux, H., **Salim, A.** TA's assessment of grading and feedback in open-ended model eliciting problems. 2010. *Institute of Industrial Engineers Annual Conference, Reno, Nevada.*

Salim, A., Diefes-Dux, H. 2010. Graduate teaching assistants' assessment of students' problem formulation within model-eliciting activities. *American Society of Engineering Education (ASEE) International Conference, Louisville, Kentucky.* (oral presentation)

Diefes-Dux, H., **Salim, A.** 2009. Problem identification during model-eliciting activities: Characterization of first-year students' responses." *Research in Engineering Education Symposium (REES), Queensland, Australia.*

Professional Society Meetings (oral and poster)

Nurul Izzati Ramli, Firdaus Abd-Wahab, **Wan Wardatul Amani Wan Salim** (2018). Characterization of Enzymatic Glucose Biosensor in Buffer Solution, in Artificial Saliva, and in Potassium Ferricyanide by Linear Sweep Voltammetry. 3rd International Sciences, Technology and Engineering Conference (ISTEC 2018) Material Chemistry, 17-18 April 2018 (oral presentation)

Wan Wardatul Amani Wan Salim (2017). Design and Fabrication of Biochemical Sensors for Environmental Monitoring: Innovative Materials that Enhance Electrochemical Transduction. Short courses on Contaminated Land and Water, the University of Manchester, 20-21 March 2017 (teaching).

Wan Wardatul Amani Wan Salim (2016). Development of a Versatile Nanomaterial-based Electrochemical Sensor for *Escherichia coli* Detection and Ion Measurement, Water Remediation in Southeast Asia: Understanding Challenges, Opportunities and Decision-Making Frameworks, a 2-day workshop at the Royal University of Phnom Penh, Cambodia, 12th – 13th December 2016 (oral presentation)

Wan Wardatul Amani Wan Salim (2015). Electrochemical Sensor Centrifuge Platform for Single-cell Study. Asian Congress on Biotechnology 2015 (ACB2015), 15-19 November, Kuala Lumpur, Malaysia. (oral presentation)

Farrah Aida Arris, Habibah Farhana Abdul Guthoos, **Wan Wardatul Amani Wan Salim** (2015). Electrochemical Characterization of Graphene Nanocomposites for Development of Robust Biosensor. Asian Congress on Biotechnology 2015 (ACB2015), 15-19 November, Kuala Lumpur, Malaysia.

Siti Khadijah Ahmad, Farrah Aida Arris, **Wan Wardatul Amani Wan Salim** (2015). Low-cost Microcontact Printing for Direct Enzyme Patterning on Paper. Asian Congress on Biotechnology 2015 (ACB2015), 15-19 November, Kuala Lumpur, Malaysia.

Joon H. Park, **W. W. Amani Wan Salim**, Antonio J. Ricco, Andres Martinez, Aaron Schooley, Bob Ricks, Abraham Rademacher, Josh Benton, D. Marshall Porterfield (2014). A Lab-on-a-Chip Centrifuge Platform for Single-cell Electrophysiology Study. 2014 Institute of Biological Engineering Annual Conference. 6-8 March 2014, Lexington, Kentucky, USA.

Ruoxi Wu, **Wan W. Amani Wan Salim**, Muhammad Firdaus Razali, Joonhyeong Park, Aaron Brovont, Steven Pekarek (2014). Development of Mobile Sensor Technology for In-pipe Water Quality Monitoring. 2014 Institute of Biological Engineering Annual Conference. 6-8 March 2014, Lexington, Kentucky, USA.

P. F. Argote Corrales, J. H. Park, **W. W. A. Wan Salim**, J. L. Rickus, D. M. Porterfield (2014). Optimized Environmental Conditions for Germination of *C. Richardii* Spores in Space. 2014 Institute of Biological Engineering Annual Conference. 6-8 March 2014, Lexington, Kentucky, USA.

Wan Salim, W. W. A., Park, J. H., Porterfield, D. M. (2013). SporeSat: A Micro-satellite Lab-on-a-chip System for Studying Single-Cell Electrophysiology. *Biosensors & Bioelectronics OMICS Conference, Northbrook, IL.* (oral presentation)

Park, J. H., Perumal, D., **Wan Salim, W. W. A.**, Miswan, Z., Porterfield, D. M. (2013). Chinese Hamster Ovary Cell Culture on All-Solid-State Ion-Selective Electrodes. *Institute Biological Engineering Annual Conference, Raleigh, NC.* (oral presentation)

Wu, R., **Wan Salim, W. W. A.**, Brovont, A., Park, J. H., Pekarek, S. D., Rao. Govindaraju, S., Banks, M. K., Porterfield, D. M. (2013). A Mobile Sensor for Water Quality Monitoring in Water Distribution System. 2013. To be presented at Institute Biological Engineering Annual Conference, Raleigh, NC. (oral presentation)

Inn, K, **Wan Salim, W. W. A.**, Porterfield, D. M. (2013). Non-Destructive Optical Oxygen Sensing Using PtTFPP (Platinum Tetrakis(Pentafluorophenyl) Porphyrin) On Long Term Shelf-Life Study For Commercial Food Packaging. To be presented at Institute Biological Engineering Annual Conference, Raleigh, NC. (oral presentation)

Wan Salim, W. W. A., Park, J. H., Wu, R., Zeitchek, M., Brovont, A., ul Haque, A., Pekarek, S. D., Banks, M. K., Porterfield, D. M. (2013). Lab-on-a-Chip Technology utilizing All-solid-state Ion-selective Electrode (ASISE) Approaches for Microfabricated Biological Sensors. Institute Biological Engineering Annual Conference, Raleigh, NC. (oral presentation)

Wan Salim, W. W. A., Park, J. H, Zeitchek, M. A., Telesnicki, G. J. , Hermann, A. C., Ricco , A. J., Martinez, A., Weber , C. T., Schooley, A., Ricks, B., Rademacher, A., Benton, J., Diaz, O., Ford, P., Defouw, G., Sweet, A., Brownston, L., Cote, M. , Kitts, C., and Porterfield, D. M. (2012). Micro-satellite Space Biology Research using Lab-on-a-Chip Approaches for Cell Electrophysiology. American Society for Gravitational and Space Research, New Orleans, LA. (oral presentation)

Zeitchek , M. A., **Wan Salim, W. W. A.**, Park, J., Hermann, A.C., Ricco, A.J., Tan, M., Selch, F., Fleming, E., Bebout, B., Porterfield, D.M. (2012). Real Time Physiological Monitoring of Photosynthesis in *Chlorella vulgaris* on a All-solid-state Carbonate-selective Electrode. American Society for Gravitational and Space Research, New Orleans, LA. (oral presentation)

Park, J., Perumal, D., Miswan, Z., Zeitchek, M. A., Porterfield D. M., **Wan Salim, W. W. A.** (2012). Chinese Hamster Ovary Cell Culture on All-Solid-State Ion-Selective Electrodes. American Society for Gravitational and Space Research, New Orleans, LA.

Wan Salim, W. W. A., Hermann, A. C., Ricco, A. J., Tan, M., Selch, F., Fleming, E., Minnelli, G., Porterfield, D. M. (2012). Carbon-hydrogen-oxygen (CHO) Biochip: Micro-electro-chemical-sensor (MECS) Technology for Spaceflight Research on Photosynthetic Microalgae. *Biosensors World Congress on Biosensors*, Cancun, Mexico.

Park, J., **Wan Salim, W. W. A.**, Hermann, A. C., Porterfield, D. M. (2012). Analysis of Electromagnetic Interference on the Performance of Silicon Microfabricated Cell Biology Systems in the Spaceflight Environment. Sigma Xi (Scientific Research Community) Research Symposium at Purdue University, West Lafayette, IN. .

Wan Salim, W. W. A., Hermann, A. C., Zeitchek, M. A., Porterfield, D. M. (2012). Characterization of a PEDOT:PSS based Conductive Polymer as a Transducer Layer for Lab-on-a-chip Microfabricated Sensors. Sigma Xi (Scientific Research Community) Research Symposium at Purdue University, West Lafayette, IN. (Postdoctoral researcher poster award, 2nd place)

Hermann, A. C., **Wan Salim, W. W. A.**, Porterfield, D. M. (2012). Micro-Electro-Chemical-Sensor (MECS) Technology for Research of Biological Suspensions during Spaceflight. Sigma Xi (Scientific Research Community) Research Symposium at Purdue University, West Lafayette, IN.

Park, J., **Salim, A.**, Porterfield, D. M. (2012). Lab-on-a-chip Technology with Integrated Solid-state Ion-selective Microsensors and Multi-cellular Patch Clamp Arrays for Advanced Electro-physiological Sensing. Institute of Biological Engineering Annual Conference, Indianapolis, IN.

Hermann, A. C., **Wan Salim, W. W. A.**, Park, J., Ul Haque, A., Porterfield, D. M. (2012). Micro-Electro-Chemical-Sensor (MECS) Technology: A biochip Platform for Physiological Research. Institute of Biological Engineering Annual Conference, Indianapolis, IN.

Wu, R., **Wan Salim, W. W. A.**, Hermann, A. C., Staton, R., Porterfield, D. M., Banks, M. K. (2012). Real-Time Monitoring of Total Residual Chlorine in Water Distribution System based on Micro-electro-chemical-sensor. Institute of Biological Engineering Annual Conference, Indianapolis, IN.

Wan Salim, W. W. A., Hermann, A. C., Park, J., Ul Haque, A., Porterfield, D. M. (2012). Micro satellite-based Space Biology Research using Lab-on-a-chip Approaches for Cell Electrophysiology. Institute of Biological Engineering Annual Conference, Indianapolis, IN. (oral presentation)

Wan Salim, W. W. A., Hermann, A. C., Zeitchek, M., Porterfield, D. M. (2012). Lab-on-a-chip Technology utilizing Conductive Polymer approaches for Microfabricated Biological Sensors. Institute of Biological Engineering Annual Conference, Indianapolis, IN. (oral presentation)

Park, J. H., **Salim, A.**, Porterfield, D. M. (2011). Patch Clamp Arrays for Electro-physiological Neural Network Studies. The 5th ASIASENSE International Conference on Sensors, Jeju, South Korea. (oral presentation)

Wan Salim, W. W. A., Hermann, A. C., Park, J., Porterfield, D. M. (2011). Lab-on-a-chip Technology based on All-solid-state Micro-electro-chemical-sensor (MECS) for studying Biological System. Columbian-Purdue Advanced Research Institute International Collaboration Forum, Purdue University, West Lafayette, IN.

Claussen, J. C., Hengenius, J., Jaroch, D. B., **Salim, A.**, Kumar, A., Khawaja, M. H., Hibbard, A. B., Wickner, M. M., Umulis, D. M., Fisher, T. S., Porterfield, D. M. (2011). Controlling the Performance of Electrochemical Biosensors through Nanomaterials: Graphene, Carbon Nanotubes, Metallic Nanoparticles, and Surface Chemistry. Institute of Biological Engineering Annual Conference, Atlanta, GA. (Student poster award, 2nd place).

Hermann, A., **Salim, A.**, Claussen, J. C., Porterfield, D. M. (2011). Carbon-hydrogen-oxygen (CHO) MEMS Biochip: Electrochemical Characterizations. Institute of Biological Engineering Annual Conference, Atlanta, GA.

A Salim, A., Hermann, A., Jofre, P., Ul Haque, A., Claussen, J. C., Porterfield, D. M. (2011). The CEL-C2 Biochip: A New Non-invasive Electrophysiology Platform for Single Cells. 2011. Institute of Biological Engineering Annual Conference, Atlanta, GA. (oral presentation)

Park, J., **Wan Salim, W. W. A.**, Hermann, A. C., Porterfield, D. M. (2011). SporeSat Micro Satellite: CEL-C Advanced bioCD for Physiological Studies on Cells. American Society for Gravitational Space Biology (ASGSB) Conference, San Jose, CA.

Hermann, A., Pfluger, J., **Wan Salim, W. W. A.**, Mandangopal, R., Tan, M., Ricco, A. J., Selch, F., Porterfield, D. M. (2011). Carbonate-hydrogen-oxygen (CHO) Biochip: A Micro-electro-chemical-sensor (MECS) to monitor Cyanobacteria Photosynthetic's Activity. American Society for Gravitational Space Biology (ASGSB) Conference, San Jose, CA. (Student poster award, Honorable-mention).

Wan Salim, W. W. A., Hermann, A. C., Park, J., Ricco, A. J., Tan, M., Selch, F., Porterfield, D. M. (2011). Micro-electro-chemical-sensors (MECS) Lab-on-a-chip for Space-flight Life-science Research. American Society for Gravitational Space Biology (ASGSB) Conference, San Jose, CA.

Jofre, P., **Salim, A.**, Odoemene, K., Ul Haque, A., Hermann, A., Porterfield, D. M. (2010). CEL-C2 – A Second Generation Electrophysiology MEMS Lab-on-chip for Single Cell Calcium Gravisensing. American Society for Gravitational Space Biology Conference, National Harbor, MD.

Workshop/Department Presentation

Wan Salim, W. W. A. Nanobiosensor for *in vitro* Applications. *Kulliyah of Engineering, International Islamic University Malaysia*, December 2014.

Diefes-Dux, H., Verleger, M., **Salim, A.**, Carnes, M. 2010. Messy engineering problems: Not just authentic but strategic fulfillment of multiple learning objectives. *American Society of Engineering Education (ASEE), IN-IL Section*.

Wan Salim, W. W. A. Introduction on facilities: Physiological sensing facility (PSF). Birck Nanotechnology Center, and Bindley Bioscience Center Presentations to Purdue University Department of Food Science Corporate Affiliate, October 2011.

Published Technical Reports

The CEL-C 2 Biochip: An Advanced Technology for Fundamental Space Biology Research. NASA FAST-Program Final Report, NASA Life Science Report. August 2010.

Biomolecule Patterning Techniques for Integrated Systems. Qualifying Literature Analysis (QLA), Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN. Dec. 2009.

Anodic Cell for Porous Silicon Fabrication. Undergraduate Senior Design Project, Department of Electrical Engineering, University of Minnesota, Minneapolis, MN. Sept. 2003.

Postgraduate Student Supervision

Postgraduate (Main supervision, ongoing):

Abdel Mohsen Benoudjit, Ph.D. Optimization of PEDOT:PSS for the Development of Noninvasive Glucose Sensors. Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: FDNANO Ventures

Idha Uswatun Shalihah Shohibuddin, M. Sc. Solid-state Potassium Sensor for Monitoring Effect of Epilepsy Drugs on Mammalian Cell Ion-Channels

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: FDNANO Ventures

Nurul Izzati Ramli, M. Sc. Clinical Trial of a Graphene-based Noninvasive Glucose Sensor

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: FDNANO Ventures

Nur Alya Batrisya, M. Sc. Development of a Graphene- Conductive Polymer- based Noninvasive Glucose Biosensor

Funding Source: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) 2017, Ministry of Education, Malaysia.

Postgraduate (Main supervision, completed):

Nasteho Ali Ahmad, M. Sc. Concentration of bacteria with microfluidics for portable biosensors.

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: Royal Society

Habibah Farhana Abdul Guthoos, M. Sc. Reduced Graphene oxide and Conductive Polymer Composites for Glucose Sensing.

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) 2014, Ministry of Education, Malaysia.

Abdel Mohsen Benoudjit, M. Sc. Conductive Polymer Nanocomposites for the Development of Electrochemical Sensors.

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) 2014, Ministry of Education, Malaysia.

Fahmi Sanober, M. Sc. Graphene Oxide Based Amperometric Immunosensor for Detection of *Escherichia coli* 0157:H7.

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).

Funding Source: L'Oréal-UNESCO Award 2015.

Farrah Aida Arris, M. Sc. Thesis title: "Graphene Nanocomposites for Wearable Sensor Development". Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM).
Funding Source: RESEARCH ACCULTURATION GRANT SCHEME (RAGS) 2014, Ministry of Education, Malaysia.

Postgraduate (Co-supervision, completed):

Jia Jia Long, M.Sc.

Preparation for the enzymatic biosensor based on block copolymers.

Department of Biotechnology Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM). (Co-supervision with Dr. Fathilah Ali)

Sylvia Chowdury, M.Sc.

Photovoltaic Nanoparticle as Targeted Drug Carrier for Cancer Treatment". Department of Mechatronics Engineering (BTE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM). (Co-supervision with Prof. Dr. Faridah Yusof)

Postgraduate (Co-supervision, completed):

Ahmad Anwar Zainuddin, Ph.D.

Novel Theoretical Model of an electrochemical nanobiosensor for rapid detection of dengue

Department of Electrical and Computer Engineering (ECE), Kulliyah of Engineering, International Islamic University Malaysia (IIUM). (Co-supervision with Dr. Anis Nurashikin Nordin)

Purdue Students' Research Mentoring

Joon Hyeong Park, Ph.D. student, Department of Agricultural and Biological Engineering (ABE), Purdue University. Funding source: NIH, NASA, EPA

Michael A. Zeitchek, M.Sc. student, Department of Agricultural and Biological Engineering (ABE), Purdue University. Funding source: NIH, NASA, EPA

Ruoxi Wu, Ph.D. student, School of Civil Engineering, Purdue University.

Funding source: EPA

Kul Inn, Ph.D. student, Department of Agricultural and Biological Engineering (ABE), Purdue University.

Funding source: Nestle, NIH

Zulaika Miswan, B.Sc student, Senior, Department of Biochemistry, Purdue University. (Graduated May 2012)

Funding source: NIH Jonathan Pfluger, Summer Undergraduate Research Fellow (SURF) 2011, Forney School of Chemical

Engineering, Purdue University. Funding source: Purdue University, SURF

Andrea Burkhardt, B.Sc. Student, Senior, School of Aerospace Engineering, Purdue University.

Darius Elliot, B. Sc. Student, Sophomore, School of Electrical and Computer Engineering, Purdue University.

Darshini Perumal, B.Sc. student, Senior, Department of Biochemistry, Purdue University. (Graduated September 2013) Funding source: NIH

Journal Reviewing Assignments

International Journal of Biomedical Engineering (IJBE), *Editorial Board Member*

Applied Physics Letters (APL)

Frontiers in Engineering Education (FIE)

Electron Device Letters (IEDL)

IEEE Transactions in Biomedical Engineering (IEEE-BME)

Biomedical Physics and Engineering Express (IOP Publications)

Biotechnology Progress (Wiley)

The Analyst (Royal Society of Chemistry)

Journal of Cleaner Production (Elsevier)

Research Funding Awarded

International Islamic University Malaysia, Gombak, Kuala Lumpur, Malaysia (May 2014-Feb 2018)

Principle Investigator:

Project/Grant title: Validation of a biosensor technology performance in quantifying pathogenic and chemical contamination for assessment of water filtration system in Kuantan, Malaysia
Duration: February 2018 - February 2019
Grant type: The Royal Society
Amount awarded: RM 33,000

Project/Grant title: Investigation of Electrosprayed Carbon-based Nanomaterials as Electrodes in Energy Storage Devices for Improved Microbial Fuel Cell
Duration: August 2017- September 2019
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 64,200

Project/Grant title: Validation Study of a Portable Biosensor Technology in Quantifying E. Coli in Filtered River Water
Duration: January 2017- December 2017
Grant type: RESEARCH INDUCTION GRANT SCHEME (RIGS), IIUM Internal Grant
Amount awarded: RM 20,000

Project/Grant title: Conducting Polymer Nanocomposite as Transducer Layer for a Robust Biochemical Microsensor
Duration: December 2014- November 2016 (COMPLETED)
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 145,000

Project/Grant title: Electrochemical Characterization of Graphene-Nanoparticles-Cellulose Nanofibers Composites for the Development of Wearable Sensors (COMPLETED)
Duration: December 2014- November 2016
Grant type: RESEARCH ACCULTURATION GRANT SCHEME (RAGS), Malaysia Ministry of Education
Amount awarded: RM 76,100

Project/Grant title: Graphene-based Immuno-Biosensor for *In-situ* Water Assessment
Duration: January 2016- November 2017 (COMPLETED)
Award: L'Oréal-UNESCO Award 2015
Amount awarded: RM 30,000

Co-investigator:

Project/Grant title: Novel Theoretical Model of an electrochemical nanobiosensor for rapid detection of dengue
Duration: November 2015- November 2017
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 87,200

Project/Grant title: Magnetic Blood Cells Microseparator for Segregating and Harvesting of Single Cell on Lab on Chip Platform
Duration: October 2016- October 2018
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 106,000

Project/Grant title: Development of bionanocomposite reinforced with sugarcane bagasse nanocellulose and incorporated with natural antimicrobial agent for food packaging applications
Duration: August 2016- July 2018
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 106,000

Project/Grant title: A Qualitative Study on the Novel use of Electrical Stimulation for the Prevention of Pressure Ulcers due to Immobility
Duration: August 2016- July 2018
Grant type: FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS), Malaysia Ministry of Education
Amount awarded: RM 106,000

Project/Grant title: Storage Capacity Studies of Carbon Nanotubes (CNT) in Energy Storage Applications
Duration: January 2017- December 2017
Grant type: RESEARCH INDUCTION GRANT SCHEME (RIGS), IIUM Internal Grant
Amount awarded: RM 20,000

Purdue University, West Lafayette, IN, USA (2010-2014)

Principal investigator: Wan Wardatul Amani Wan Salim; Co-Principle investigator: Jenna L. Rickus
Project/Grant title: Sporesat Mission: Investigating the biophysical mechanisms of plant gravisensing using a lab-on-a-chip approach.
Duration: 3/1/2011-9/28/2014
Sponsor: NASA SALMON-MoO2 (HEOMD) NNX11AF48A.
Amount awarded: US \$700,000.