



# Dr. Jahwarhar Izuan Abdul Rashid

Senior Lecturer & Research Fellow at National Defence University of Malaysia

Web of Science ResearcherID: J-1534-2019

- H-Index: 13 (Google Scholar)
- Publications: >30 articles, 3 book chapters
- Verified peer reviews: 50
- Verified editor record: 20

## My Contact



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## Education Background



Ph.D. in Sensor Technology Engineering, Universiti Putra Malaysia, 2016



Master of Science (Microbiology), National University of Malaysia, 2012



Bachelor of Science (Hons) in Microbiology, National University of Malaysia, 2008

## Speaking Engagements

- Invited speaker 2017- PutraConf: Sensors in medical diagnostics 2017
- Invited speaker 2021- AsiaSense 2021
- Invited speaker 2023- 15th Undergraduate Colloquium on Health Sciences 2023
- Invited speaker 2024 Online 2nd International Conference on Environment and Energy Materials

## About

He was appointed as a Senior Lecturer at UPNM's Centre for Defence Foundation Studies in 2016, where he uniquely blends his profound expertise in Biosensor Technology and Microbiology. His innovative research focuses on the construction of chemical and biological sensor devices, utilizing nanomaterials as sensing agents. He is advancing the development of diverse biosensor techniques, ranging from optical to electrochemical methods, aimed at the precise detection of microbes and chemical nerve agents. This pioneering approach has earned him two distinguished patents in the field of biosensor technology. In addition to his role as a lecturer, he currently serves as a research fellow at the Centre of Tropicalization (CENTROP), where his research is centered on fungal biology and its applications.

## Domain Research

- Science and Technology
- Medical and Health

## Area Expertise

- Biosensor Technology
- Microbiology

## Number of Patent & Copyright

- 2 Patent
- 3 Copyright

## Number of grants



14

(4 as project leader)

## Grants Accumulated



MYR 2,263,462.00



2

Ph.D



5

Master

## Editorial Membership

- International Journal of Medical Science and Health Research
- Asian Journal of Life Sciences
- Edorium Journal of Microbiology
- Biosciences Biotechnology Research Asia
- International Multidisciplinary Research Journal IRMJ-Biotechnology

# List of Publications

## 2024 (15/6/2024)

Abidin, A.Z., Norrrahim, M.N.F., Shakrin, N.N.S.M., Ibrahim, B., Abdullah, N., **Rashid, J.I.A.**, Kasim, N.A.M. and Shah, N.A.A., 2024. Amidine containing compounds: Antimicrobial activity and its potential in combating antimicrobial resistance. *Heliyon*.

Roslan, N.J., Jamal, S.H., **Rashid, J.I.A.**, Norrrahim, M.N.F., Ong, K.K. and Yunus, W.M.Z.W., 2024. Response surface methodology for optimization of nitrocellulose preparation from nata de coco bacterial cellulose for propellant formulation. *Heliyon*, 10(4).

Narayanasamy, D., Taufik, S., Azmi, A.F.M., Nor, S.A.M. and **Rashid, J.I.A.**, 2024. Modern technology advances of *Pseudomonas aeruginosa* based biosensor approach. *Biosensors and Bioelectronics*: X, p.100441.

## 2023

Nasruddin, M.I., Shakrin, N.N.S.M., Yunus, W.M.Z.W., Knight, V.F. and **Rashid, J.I.A.**, 2023. IDENTIFICATION OF MARINE IRON REDUCING BACTERIA (IRB) ISOLATED FROM PASIR PANJANG, PORT DICKSON, NEGERI SEMBILAN AND ITS ANTIMICROBIAL ACTIVITIES. *Zulfaqar Journal of Defence Science, Engineering & Technology*, 6(3).

Azizan, M.A.I., Taufik, S., Norizan, M.N. and **Rashid, J.I.A.**, 2023. A review on surface modification in the development of electrochemical biosensor for malathion. *Biosensors and Bioelectronics*: X, 13, p.100291.

Osman, M.J., Yunus, W.M.Z.W., Khim, O.K., **Rashid, J.I.A.**, Chieng, B.W., Kassim, N.A.M., Halim, N.A., Noor, S.A.M., Knight, V.F. and Ahmad, S.S.S., 2023. PRELIMINARY STUDY ON THE EFFECTS OF TEMPERATURE AND IONS ON THE DETECTION OF ACEPHATE. *EDITORIAL BOARD*, 220, p.169.

**Rashid, J.I.A.**, Yusof, N.A., Abdullah, J. and Shomiad, R.H., 2023. Strategies in the optimization of DNA hybridization conditions and its role in electrochemical detection of dengue virus (DENV) using response surface methodology (RSM). *RSC advances*, 13(27), pp.18748-18759.

## 2022

Dzulkurnain, N.A., Mokhtar, M., **Rashid, J.I.A.**, Knight, V.F., Wan Yunus, W.M.Z., Ong, K.K., Mohd Kasim, N.A. and Mohd Noor, S.A., 2021. A review on impedimetric and voltammetric analysis based on polypyrrole conducting polymers for electrochemical sensing applications. *Polymers*, 13(16), p.2728.

## 2021

Methylphosphonic Acid Detection using DNA Aptamer-Citrate Capped Gold Nanoparticles Enhanced by Digital Image Analysis Pojo, F.E., Zulkifli, N.A., Ong, K.K., Osman, M.J., **Abd Rashid, J.I.**, Yunus, W.M.Z.W., Jamal, S.H., Syed Ahmad, S.M.S., & Teoh, C.C. *Malaysian Journal of Chemistry*, 2022, Vol. 24(3), 1-14

Review on surface modification in the development of electrochemical biosensor for malathion Muhammad Amir Irfana SafuraTaufi Mohd Nurazzi Norizande **Jahwarhar Izuhan Abdul Rashid** *Biosensors and Bioelectronics*: X Available online 10 December 2022, 10029

Response Surface Methodology for Optimization of Nitrocellulose from Bacterial Cellulose Nata De Coco for Potential Propellant Application. N. Jori Roslan, S.H. Jamal, **J.I.A. Rashid**, O.K. Khim, W.M.Z.W. Yunus. Available at SSRN 4159345.

Osman, M.J., **Rashid, J.I.A.**, Khim, O.K., Yunus, W.M.Z.W., Noor, S.A.M., Kasim, N.A.M., Knight, V.F. and Chuang, T.C., 2021. Optimisation of a gold nanoparticle-based aptasensor integrated with image processing for the colorimetric detection of acephate using response surface methodology. *RSC advances*, 11(42), pp.25933-25942.

**Rashid, J.I.A.**, Kannan, V., Ahmad, M.H., Mon, A.A., Taufik, S., Miskon, A., Ong, K.K. and Yusof, N.A., 2021. An electrochemical sensor based on gold nanoparticles-functionalized reduced graphene oxide screen printed electrode for the detection of pyocyanin biomarker in *Pseudomonas aeruginosa* infection. *Materials Science and Engineering: C*, 120, p.111625.

## 2020

Che Sulaiman, I.S., Chieng, B.W., Osman, M.J., Ong, K.K., **Rashid, J.I.A.**, Wan Yunus, W.M.Z., Noor, S.A.M., Kasim, N.A.M., Halim, N.A. and Mohamad, A., 2020. A review on colorimetric methods for determination of organophosphate pesticides using gold and silver nanoparticles. *Microchimica Acta*, 187, pp.1-22.

Diauddin, F.N., Mohd Noor, S.A., **Abdul Rashid, J.I.**, Feizal Knight, V., Wan Yunus, W.M.Z., Ong, K.K., Mohd Kasim, N.A., Taufik, S., Samsuri, A., Shamsudin, I.J. and Latip, W., 2020. Preparation and Characterisation of Polypyrrole-Iron Oxyhydroxide Nanocomposite as Sensing Material. *Advances in Materials Science and Engineering*, 2020(1), p.8762969.

Osman, M.J., Wan Yunus, W.M.Z., Ong, K.K., Chieng, B.W., Mohd Kassim, N.A., Mohd Noor, S.A., Feizal Knight, V., **Abd Rashid, J.I.** and Teoh, C.C., 2020. Image Digitization of Colorimetric Detection of Acephate Based on Its Complexation with Citrate-Capped Gold Nanoparticles. *Journal of Chemistry*, 2020(1), p.8872048.

Osman, M.J., Yunus, W.M.Z.W., Khim, O.K., **Rashid, J.I.A.**, Chieng, B.W. and Teoh, C.C., 2020. EFFECT OF CITRATE CAPPED GOLD NANOPARTICLES VOLUME ON ACEPHATE DETECTION USING COLORIMETRIC ASSISTED IMAGE PROCESSING TECHNIQUE. *Defence S&T Technical Bulletin*, 13(2).

Pojol, F.E., Yusuff, S.M., Ong, K.K., **Rashid, J.I.A.**, Jamari, N.L.A., Noor, S.A.M., Kasim, N.A.M., Halim, N.A., Yunus, W.M.Z.W., Knight, V.F. and ChuangTeoh, C., 2020. OPTIMISATION OF COLOURIMETRIC APTASENSOR FOR DETERMINATION OF METHYLPHOSPHONIC ACID USING RESPONSE SURFACE METHODOLOGY. *Defence S&T Technical Bulletin*, 13(2).

Chapter 2: Labelling Strategies for Electrochemical and Optical Biosensor. **JIA Rashid**, NA Yusof. *Biosensors and Chemical Sensors: A Practical Approach*, 10-20

Chapter 1: Immobilisation Strategies for Biomolecules in Sensor Development **JIA Rashid**, NA Yusof. *Biosensors and Chemical Sensors: A Practical Approach*, 1-9

Azmi, A.F.M., Kannan, V., Yasin, N.S., **Rashid, J.I.A.**, Omar, A. and Salleh, E.M., 2020. Effect of time and temperature on reduced graphene oxide (rGO) layer stability and cyclic voltammetric behaviour of modified screen-printed carbon electrode (mSPCE) for biosensing purposes. *Malaysian Journal of Analytical Sciences*, 24(5), pp.800-809.

## 2019

Osman, M.J., Yunus, W.M.Z.W., Khim, O.K. and **Rashid, J.I.A.**, 2019. Recent advances techniques for detection of organophosphates: a review. *Zulfaqar Journal of Defence Science, Engineering & Technology*, 2(2).

Diauddin, F.N., **Rashid, J.I.A.**, Knight, V.F., Yunus, W.M.Z.W., Ong, K.K., Kasim, N.A.M., Halim, N.A. and Noor, S.A.M., 2019. A review of current advances in the detection of organophosphorus chemical warfare agents based biosensor approaches. *Sensing and Bio-Sensing Research*, 26, p.100305.

## 2018

LEONG, J.H., ONG, K.K., ZIN, W.Y.W.M., ANWAR, F., TEOH, C.C., **RASHID, J.I.A.** and AHMAD, M., 2018. Digital Image-Based Colorimetry for Enhancement of Arsenic (III) Determination. *Asian Journal of Chemistry*, 30(7).

**Rashid, J.I.A.** and Yusof, N.A., 2018. Laboratory diagnosis and potential application of nucleic acid biosensor approach for early detection of dengue virus infections. *Biosciences Biotechnology Research Asia*, 15(2), pp.245-255.

## 2017

**Rashid, J.I.A.** and Yusof, N.A., 2017. The strategies of DNA immobilization and hybridization detection mechanism in the construction of electrochemical DNA sensor: A review. *Sensing and bio-sensing research*, 16, pp.19-31.

Omar, A., **Rashid, J.I.A.**, Latif, A.A.A., Karim, K.A., Bakar, O.C., Bakar, M.A. and Yunus, W.M.Z.W., 2017. Development of cortisol immunosensor based reduced graphene oxide (rGO) for future application in monitoring stress levels among military personnel. *Science & Technology Research Institute for Defence (STRIDE)*, 10(2), pp.142-148.

## 2016

**Abdul Rashid** J.I., Yusof, N.A., Abdullah, J., Hashim, U. and Hajian, R., 2016. Surface modifications to boost sensitivities of electrochemical biosensors using gold nanoparticles/silicon nanowires and response surface methodology approach. *Journal of materials science*, 51, pp.1083-1097.

## 2015

**Abd Rashid, J.I.**, Yusof, N.A., Abdullah, J., Hashim, U. and Hajian, R., 2015. A novel disposable biosensor based on SiNWs/AuNPs modified-screen printed electrode for dengue virus DNA oligomer detection. *IEEE Sensors Journal*, 15(8), pp.4420-4427.

**Abdul Rashid, J.I.**, Yusof, N.A., Abdullah, J., Hashim, U. and Hajian, R., 2016. Surface modifications to boost sensitivities of electrochemical biosensors using gold nanoparticles/silicon nanowires and response surface methodology approach. *Journal of materials science*, 51, pp.1083-1097.

## 2014

**Rashid, J.I.A.**, Yusof, N.A., Abdullah, J., Hashim, U. and Hajian, R., 2014. The utilization of SiNWs/AuNPs-modified indium tin oxide (ITO) in fabrication of electrochemical DNA sensor. *Materials Science and Engineering: C*, 45, pp.270-276.

## 2013

**Abdul Rashid, J.I.**, Abdullah, J., Yusof, N.A. and Hajian, R., 2013. The development of silicon nanowire as sensing material and its applications. *Journal of Nanomaterials*, 2013(1), p.328093.

**Rashid, J.I.**, Samat, N. and Yusoff, W.M., 2013. Studies on extraction of mannanase enzyme by *Aspergillus terreus* SUK-1 from fermented palm kernel cake. *Pakistan journal of biological sciences: PJBS*, 16(18), pp.933-938.

## 2012

**Abd Rashid, J.I.**, Samat, N. and Yusoff, W.M.W., 2012. Screening and optimization of medium composition for mannanase production by *Aspergillus terreus* SUK-1 in solid state fermentation using statistical experimental methods. *Research journal of microbiology*, 7(5), p.242.

## 2011

**Rashid, J.I.**, Samat, N., Mohtar, W. and Yusoff, W., 2011. Optimization of temperature, moisture content and inoculum size in solid state fermentation to enhance mannanase production by *Aspergillus terreus* SUK-1 using RSM. *Pakistan journal of biological sciences: PJBS*, 14(9), pp.533-539.