



Ts. Dr. Azila Adnan

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QUALIFICATIONS

- Doctor of Philosophy (Bioprocess Engineering), University of Waikato, New Zealand
- Master of Science (Biotechnology), Universiti Malaysia Sarawak
- Bachelor of Science (Resource Biotechnology), Universiti Malaysia Sarawak

FIELD OF RESEARCH

- Bioprocess/Fermentation Technology
- Biopolymer Production
- Biotechnology

RESEARCH INTEREST

An exuberant academician and researcher at Faculty of Science & Marine Environment, UMT. Been working on biopolymer fermentation such as bacterial cellulose and potential polysaccharide in batch fermentation system. I have an interest in contributing to a deeper understanding of bacterial cellulose synthesis and other biopolymer applications. Adding value to an emerging biomaterial is vitally important recently. Hence, we need to identify the requirements of the end-user and tailor our products to meet current needs. Additionally, we need to understand the factors that affect the functionality of the biopolymer/biomaterial we synthesize from the fermentation process. My areas of research are in understanding the factors that affect the functionality of bacterial cellulose, and how to use bacterial cellulose in added-value products (e.g bioplastic). I am also interested in adding value to the co-products of certain biotechnological industry. The latter has traditionally been regarded as waste streams that need to be processed to reduce treatment costs. Other interests include identifying and improving the bioreactor parameters of a given process and related. Going into the teaching commitment, I have seven years' experience as a Biochemistry academician, with a belief that reaching students emotionally matters, a lot.

RESEARCH PROJECTS

- Elucidation of Surface Morphology Of Biodegradable Microbial Cellulose-Reinforced with P(3HB-CO-4HB) scaffold as potential chronic wound healing biomaterial.
- Elucidating the mode of action of essential oils from four plants against invasive red palm weevil and the defense mechanisms of the weevil.
- Corrosion and microbial inhibition characteristics of local herbs (Hempedu Bumi) on stainless steels (316L) in seawater.

EXPERT LINKAGES

- UNIVERSITI SAINS MALAYSIA
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PROFESSIONAL MEMBERSHIP

- Malaysia Board of Technologists (MBOT)
- International Association of Engineers

GRANTS

- | | | |
|------------|---|---|
| Project | : | Elucidation of Surface Morphology Of Biodegradable Microbial Cellulose-Reinforced with P(3HB-CO-4HB) scaffold as potential chronic wound healing biomaterial. |
| Position | : | Leader |
| Grant Name | : | FRGS Phase 1 2019 |
| Status | : | Active |
| Amount | : | RM92,200 |
| Project | : | Elucidating the mode of action of essential oils from four plants against invasive red palm weevil and the defense mechanisms of the weevil |
| Position | : | Co-researcher |
| Grant Name | : | FRGS Phase 1 2019 |
| Status | : | Active |
| Amount | : | RM104,800 |

Project : Formulating eco-friendly toothpaste hydroxyapatite extracted from fishery products
Position : Co-researcher
Grant : TAPE 2020
Name
Status : Active
Amount : RM20,000

Project : Corrosion and microbial inhibition characteristics of local herbs (Hempedu Bumi) on stainless steels (316L) in seawater.
Position : Co-researcher
Grant : FRGS Phase 1 2018
Name
Status : Completed
Amount : RM99,000

Project : A Strategy to degrade trehalose structure of Acanthamoeba Cyst: Protein Analysis and Morphological Characteristics of Cystic Acanthamoeba Exposed to Trehalase Enzyme
Position : Co-researcher
Grant : TAPE 2018
Name
Status : Completed
Amount : RM20,000

AWARDS

- Anugerah Inovasi Penyelidikan FSSM 2020
- Anugerah Inovasi Pengajaran FSSM 2020
- Anugerah Julangan Bakat (Pengajaran & Pembelajaran Muda) 2018

PUBLICATIONS

Journal Article

1. A. **Adnan**. (2020). The Use of Illustration in Biochemistry Teaching and Learning. MALIM SEA Journal of General Studies, 21: 139-146.
2. M.F.F. Maria, W.M.K.W.M. Ikhmal, M.N.N.S. Amirah, S.M. Manja, S.M. Syaizwadi, K.S. Chan, M.G.M. Sabri and A. **Adnan**. (2019). Green approach in anti-corrosion coating by using *Andrographis paniculata* leaves extract as additives of stainless steel 316L in seawater. International Journal of Corrosion and Scale Inhibition, 8(3), 644-658.
3. W.N, Kang. and A. **Adnan**. (2019). Effect of dual-saccharides on microbial cellulose (MC) production by *Pseudomonas aeruginosa*. Malaysian Applied Biology Journal, 48(1): 7-14.

Conference Publication

1. J.M. Chai, and A. **Adnan**. (2018). Effect of different nitrogen source combinations on microbial cellulose production by *Pseudomonas aeruginosa* in batch fermentation. IOP Conference Series: Materials Science and Engineering, 2018, 440(1), 012044.
2. Maria, M.F.F., Ikhmal, W.M.K.W.M., Sabri, M.G.M., Ibrahim, M.S.C. and A. **Adnan**. (2018). Identification of functional group present in *Andrographis paniculata* (kalmegh) leaves by FTIR analysis. IOP Conference Series: Materials Science and Engineering, 2018, 440(1), 012035
3. H. Ahamad Zakeri, A. **Adnan** and N.O. Harun. i-BEaM: An Interactive Biochemistry Book Series (IUCEL 2018)

Other Outputs

[Thesis, manuscript, books, reports, etc.]

1. Polychaetes: The Wiggly Heroes (Editor)
2. Polychaetes: The Wiggly Heroes (Author: Chapter in Book)
3. Modul Saintis Ulul Albab (Author: Chapter in Book)
4. Modul Saintis Islam 2018 (Author: Chapter in Book)
5. Modul STEM Plus (Author: Chapter in Book)

SUPERVISION

Doctor of Philosophy Degree

Thesis Title : Multifunctional protective ZnO nanocomposite coating with *Leucaena leucocephala* leaves extract for marine vessel protection.

Student Name : Wan Mohamad Ikhmal Bin Wan Mohamad Kamaruzzaman

Role : Co-Supervisor

Status : Active

Master Degree

Thesis Title : Enhancement of bacterial cellulose mechanical properties by incorporating P(3HB-co-4HB) for wound healing potential.

Student Name : Nurul Nadhirah Binti Ruzelan

Role : Main Supervisor

Status : Active

Thesis Title : Bacterial cellulose: biosynthesis by *Komagataeibacter xylinus* and application in wound healing with P(3HB-co-4HB) incorporation.

Student Name : Wan Syahiidah Binti Wan Abd Aziz

Role : Main Supervisor

Status : Active

COURSE TAUGHT

- Biochemistry (Sem II 2014/2015 – Present)
- Basic Microbiology (Sem 1 2015/2016)

LINKS

- SCOPUS: 57197887302
- WoS: Q-1468-2018
- Researchgate: https://www.researchgate.net/profile/Azila_Adnan
- ORCID: <https://orcid.org/0000-0003-4888-4012>
- Facebook: <https://www.facebook.com/azila.adnan.16>

OTHERS – Recent Innovation Awards

- Gold Medal – e-Telic 2020 (Low-bandwidth learning: Illustrative Mind-maps for Biochemistry Biomolecules Topic) - Leader
- Gold Medal – MPI 2020 (TrehEYE: Enzymatic Approach for Anti-Acanthamoeba Cyst Agent) - Member
- Gold-Medal – MPI 2020 (CREZ: Bye-bye Rust!) - Member
- Silver Medal - Airex 2020 (The Metabolic Town) - Leader
- Silver Medal – MPI 2020 (Hello DRAABY: They Need Help!) - Leader
- Silver Medal – kNOVASI 2020 (Mobile apps for Biochemistry Course) - Leader
- Silver Medal - DTLIC 2020 (Mind-maps: Still A Tool for The Brain? - Leader
- Bronze Medal – DTLIC 2020 – (Best practices of Teaching and Learning in New Norm) – Member.