



DR. WAN RAFIZAH BINTI WAN ABDULLAH @ WAN ABD. RAHMAN

Faculty of Ocean Engineering Technology,
Universiti Malaysia Terengganu, 21030 Kuala Nerus, Terengganu, MALAYSIA

Tel: +6096683863 **Mobile:** +60197439698

E-mail: wanrafizah@umt.edu.my

Scopus ID: 55194913400 **Researcher ID:** V-9432-2018 **ORCHID ID:** 0000-0001-7806-3640

EDUCATION

PhD. Nanomaterials & Nanotechnology
Universiti Putra Malaysia
2010-2014

MEng (Gas)
Universiti Teknologi Malaysia
2004-2007

BEng. (Hons) Chemical
Universiti Teknologi Malaysia
1999-2004

EMPLOYMENT

Head of Programme

**Bachelor of Technology (Environment),
Faculty of Ocean Engineering Technology,
Universiti Malaysia Terengganu**
2020 - 2025

Senior Lecturer (DS52)

**Faculty of Ocean Engineering Technology,
Universiti Malaysia Terengganu**
Oct 2014 - Present

Lecturer (DS45)

**School of Ocean Engineering Technology,
Universiti Malaysia Terengganu**
May 2007- Oct 2014

Tutor (DA41)

**Faculty of Science and Technology,
Universiti Malaysia Terengganu**
Oct 2004 - May 2007

EXPERTISE

- **Nanomaterial Synthesis**
- **Sol-gel & Citrate Gel Based Nanofabrication**
- **Environmental Nanotechnology**
- **Photocatalytic Nanofeatures for Corrosion and Water Treatment.**

Publications

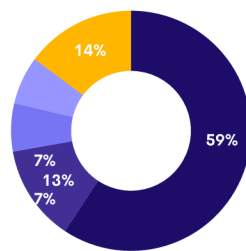
	Scopus	Google Scholar
Total Publications	40	40
Total Citations	396	396
h-index	11	10

Research, Consultation & Innovation

14 Research Grants
RM 1,283,500.00

4 Consultation Projects

4 Copyrights Filed



Type of Grants Received

- UNIVERSITY (59%)
- FRGS (13%)
- LRGS (7%)
- NRGs (7%)
- INDUSTRY (14%)

*Percentage by the total number of grant.

Teaching & Supervision

Undergraduate Courses

- Materials Engineering
- Environmental Nanotechnology
- Chemical Process Safety
- Principles of Environmental Analysis
- Mathematics for Technology
- Thermodynamics
- Final Year Projects

Postgraduate Courses

- Research Methodology

Supervision

- 1 PhD. & 7 MSc. Graduated
- 3 PhD & 1 MSc. on-going

Academic Recognition

- 4 Thesis Examiner
- 19 Journal Reviewer
- 2 Editorial Board Member

Awards

- Makalah Jurnal Terbaik Indeks Antarabangsa, Anugerah MAPIM-KPT Ke 14 (2023)
- Anugerah Perkhidmatan Cemerlang 2016
- Anugerah Perkhidmatan Cemerlang 2010
- Sijil Perkhidmatan Cemerlang (2015 - 2023)
- Silver Medalist, Seoul International Invention Fair 2018
- Silver Medalist, PECIPTA 2019
- Gold Medalist, International Invention, Innovation & Technology Exhibition (ITEX 2018)
- Gold, Silver and Bronze Medalists, Minggu Penyelidikan & Inovasi 2018
- Silver Medalist, Pertandingan Amalan Inovasi Pengajaran & Pembelajaran 2019

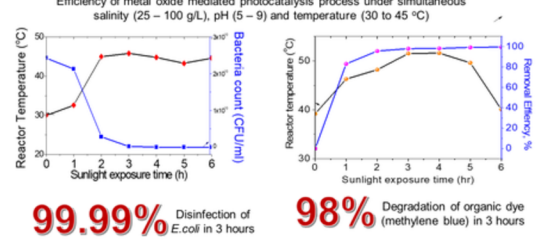
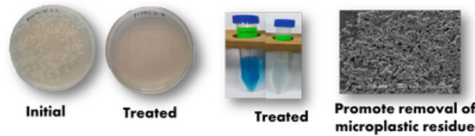
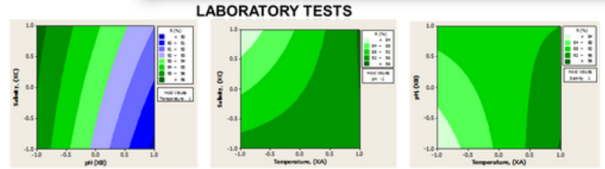
[0000-0001-7806-3640](https://orcid.org/0000-0001-7806-3640)

Current Research Interest

Fabrication and modification of nanostructured metal oxide based functional materials for environmental applications.

WATER & WASTEWATER TREATMENTS

- 01 Simple operation, easy installation & energy saving
- 02 Possible scale-up
- 03 Proven disinfection effectiveness
- 04 Excellent performance for freshwater & seawater

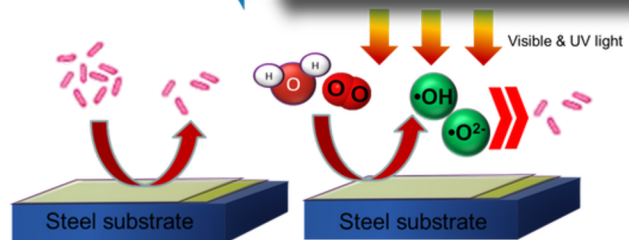


FIELD TESTING >99.9 % Removal of Total Bacteria from Groundwater, Seawater, Surface water (< 30 min)

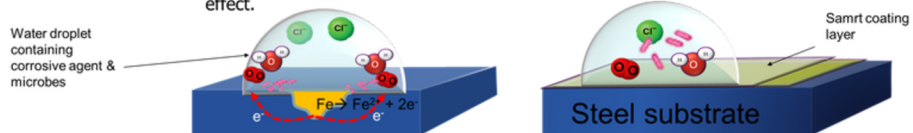
Water and wastewater treatment by metal oxide based photocatalyst

SMART COATING APPLICATION

- Hygienic effects
- Photoresponsive & UV protection
- Promote Self-healing
- Anticorrosive
- Antibiofouling



Smart Coating formulation contains antibacterial and photoresponsive ZnO based microparticles that capable of inhibiting bacteria attachment through contact-active response and photocatalytic bacterial inactivation effect.



Epoxy matrix isolates the protected surface from moisture, corrosive agents, organic and microbial contaminants. Dispersion of PEDOT:PSS-ZnO based microparticles hybrid composite increases dual anticorrosion & anti-biocorrosion protection on steel surface through cathodic protection mechanism.

Protection mechanisms provided by Smart Coating containing Metal Oxide Photocatalyst

Selected publications:

- Abdullah, S. Z. A. S., Abdullah, W. R. W., Ariffin, F., & Ghazali, M. S. M. (2024). Synthesis and Morphological Studies of Cerium Oxide-Zinc Oxide as a Potential Heterostructured Material. In *Exploring Diversity in Engineering and Technology for Knowledge and Innovation* (pp. 215-222). Cham: Springer Nature Switzerland.
- Razali, N. A., Abdullah, W. W., & Zikir, N. M. (2020). Effect of thermo-photocatalytic process using zinc oxide on degradation of macro/micro-plastic in aqueous environment. *J. Sustain. Sci. Manag*, 15(6), 1-14.
- Abdullah, W. R. W., Siang, L. C., Rooshde, M. S., & Ghazali, M. S. M. (2020). Temperature and Salinity Effects on Photocatalytic Performance of Cerium Doped Zinc Oxide. *Solid State Phenomena*, 307, 223-228.
- Wan Abdullah, W. R., Johari, N. A., Farahin Ibrahim, N., Syazrinni Rooshde, M., & Mohd Ghazali, M. S. (2019). Comparison of biocorrosion behavior of stainless steel 316 L and mild steel induced by slime producing bacteria. *International Journal of Mechanical Engineering and Technology*, 10(3).
- Mohamed, F. E., & Abdullah, W. R. W. (2019). Solar Photocatalytic Efficiency of Zinc Oxide for Water Decontamination. *Universiti Malaysia Terengganu Journal of Undergraduate Research*, 1(1), 92-102.