

RABIATULADAWIYAH BT MD AKHIR

Lecturer, Materials Science & Technology Program, School of Physic and Materials, Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM), 40450, Shah Alam, Selangor, MALAYSIA.

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EDUCATIONAL BACKGROUND

- 2020 : PhD Candidate, (Nanostructures)
UNIVERSITI TEKNOLOGI MARA (UiTM), MALAYSIA
- 2013 : Master of Science (Materials Science)
UNIVERSITI PUTRA MALAYSIA, MALAYSIA
- 2009 : Bach. of Science (Hons) (Materials Technology)
UNIVERSITI TEKNOLOGI MARA (UiTM), MALAYSIA

TEACHING EXPERIENCE

- 2012-2018 : i) Introduction to Materials Science, ii) Materials Processing, iii) Biomaterials, iii) Basic Instrumental Analysis, iv) Advanced Materials Characterization (Undergraduate)

AREA OF INTEREST

Nanomaterials & nanotechnology : Metal and metal oxide of nanoparticle, nanowires and nanorods, nanostructured thin films and coatings & alternative green biosynthesis of metal oxide using plant extract.

COMPLETED & ON-GOING GRANTS

1. Lestari Grant, Biosynthesis of Zinc Oxide Nanoparticles from Native Plant (*Pandanus Amaryllifolius*) and Its Corrosion Inhibition Efficiency, RM 20,000, Sponsor: Research Management Centre, Universiti Teknologi MARA, Start:01 Oct 2017. End: 26 Sept 2020.
2. Bestari Grant, A Phytochemical Approach to Enhance the Efficiency of Biosynthesized Silver Nanoparticles from Extraction of *Imperata Cylindrica*, RM 20,000, Sponsor: Research Management Centre, Universiti Teknologi MARA, Start:01 Jan 2018 End: 31 Dec 2019.
3. Promoting Materials Science and Green Technology: Transforming Waste into Wealth, Selangor State Government, Start:15 March 2018. End: 30 June 2018
4. RAGS Grant, Role of Hydrogen Ions on One Dimensional TiO₂ Nanotube Formation, RM 75,000, Sponsor: Ministry of Higher Education, Start:15 Dec 2012 End: 14 June 2015.

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1. Green Alternative Synthesis of Zinc Oxide Nanostructured: Eco-friendly Vs. Efficacy? (2020), Intellectual Property Corporation of Malaysia (MyIPO), (copyright no: LY2020000399), Rabiatuladawiyah Bt Md Akhir, Zuraida Binti Khusaimi, Mohamad Rusop Bin Mahmood, Siti Zulaikha Binti Umbaidilah and Nurul Afaah Binti Abdullah.

PUBLICATIONS (Scopus and WoS indexed)

1. **Akhir, R. M.**, Umbaidilah, S. Z., Abdullah, N. A., Mahmood, M. R., & Khusaimi, Z. (2020). A Preliminary Study on the Effect of Pandanus amaryllifolius Extract as Green Stabilizer to the Growth of Nanostructured ZnO. Materials Science Forum, 990, 277–282.
2. **Md Akhir, R.**, Umbaidilah, S. Z., Abdullah, N. A., Alrokayan, S. A., Khan, H. A., Soga, T., ... & Khusaimi, Z. (2020). The Potential of Pandanus amaryllifolius Leaves Extract in Fabrication of Dense and Uniform ZnO Microrods. Micromachines, 11(3), 299.
3. A Facile Solution Immersion Method of Highly Crystalline ZnO Micro-Nanorods on Non-Seeded Glass Substrate, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Main author)**

4. Recent Advances and Emerging Opportunities in Biosynthesis of ZnO Nanorods, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Main author)**
5. Impact of silver dopant to nanostructured ZnO on TiO₂ seed layer thin film, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Co-author)**
6. Annealing effects on structural and morphological properties of TiO₂:Ag-doped ZnO nanorod, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Co-author)**
7. Morphological and Structural Properties of Nb₂O₅ Doped TiO₂, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Co-author)**
8. UV-Vis Absorption Enhancement for Nb₂O₅ Doped TiO₂, Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering 2020 (MJIC 2020), 29 Feb-2 March 2020. **(Co-author)**
9. Umbaidillah, S. Z., Asib, N. A. M., Abdullah, N. A., **Akhir, R. M.**, Asli, N. A., Rusop, M., & Khusaimi, Z. (2019, August). The Effect of Precursor Concentration on Structural and Optical Properties of Ag-doped ZnO/TiO₂. In 2019 IEEE Regional Symposium on Micro and Nanoelectronics (RSM) (pp. 61-64). IEEE.
10. Omar, S. N. I., Ariffin, Z. Z., **Akhir, R. A. M.**, Shri, D. N. A., Halim, M. I. A., Safian, M. F., ... & Mahat, M. M. (2019). Polyaniline (PANI) fabric doped p-toluene sulfonic acid (pTSA) with anti-infection properties. *Materials Today: Proceedings*, 16, 1994-2002.
11. Effect of pH on Morphology and Structural Properties of Zinc Oxide Nanoparticles by Biosynthesis Method, International Conference on Nanoscience and Nanotechnology (NANO SciTech 2019) on 1-4 March 2019 at UiTM Shah Alam. Accepted for AIP Conference Proceedings. **(Main author)**
12. Synthesis of ZnO Nanoparticles using Pandanus Amaryllifolius as Reducing Agent and its Photocatalytic Study, International Conference on Nanoscience and Nanotechnology (NANO SciTech 2019) on 1-4 March 2019 at UiTM Shah Alam. Accepted for AIP Conference Proceedings. **(Main author)**
13. The Influence of Precursor Concentration to Silver Doped Zinc Oxide Nanorod Seeded by Titanium Dioxide, International Conference on Nanoscience and Nanotechnology (NANO SciTech 2019) on 1-4 March 2019 at UiTM Shah Alam. Accepted for AIP Conference Proceedings. **(Co-author)**
14. The Effect of Different Atomic Percentage of Cu-doped Nano Zinc Oxide on Titanium Dioxide Seeded Substrate, International Conference on Nanoscience and Nanotechnology (NANO SciTech 2019) on 1-4 March 2019 at UiTM Shah Alam. Accepted for AIP Conference Proceedings. **(Co-author)**
15. **R. M. Akhir**, M.H. Norashikin, M.M. Mahat, N.N. Bonnia, Biosynthesis of Zinc Oxide Nanoparticles for Corrosion Protection Application, *International Journal of Engineering & Technology*, 4.14, 488-492 (2018).
16. Noor Najmi Bonnia, Afiza Ahmad Fairuzi, **Rabiatuladawiyah Md. Akhir**, Sabrina M. Yahya and Norafifah A. Rahman, Comparison Studies On Catalytic Properties Of Silver Nanoparticles Biosynthesized Via Aqueous Leaves Extract Of *Hibiscus Rosa Sinensis* And *Imperata Cylindrica*. *AIP Conference Proceedings* 1963 (1), 020012. (2018)
17. Noor Najmi Bonnia, Afiza Ahmad Fairuzi, **Rabiatuladawiyah Md. Akhir**, Sabrina M. Yahya, MohdAzri Rani, NoorAzlina Hassan and Norafifah A. Rahman, Comparison Study On Biosynthesis Of Silver Nanoparticles Using Fresh And Hot Air Oven Dried *Imperata Cylindrica* Leaf, *IOP Conference Series: Materials Science and Engineering* 290 (1), 012002. (2018)
18. Noor Najmi Bonnia, Afiza Ahmad Fairuzi, **Rabiatuladawiyah Md. Akhir**, Sabrina M. Yahya, MohdAzri Rani, NoorAzlina Hassan and Norafifah A. Rahman, Degradation of Methylene Blue using Silver Nanoparticles Synthesized from *Imperata Cylindrica* Aqueous Extract, *IOP Conference Series: Earth and Environmental Science* 105 (1), 012018. (2018)
19. **Akhir, R. M.**, Fairuzi, A. A., & Ismail, N. H. (2015, August). Plant-mediated synthesis of biosilver nanoparticles using Pandanus amaryllifolius extract and its bactericidal activity. In *AIP Conference Proceedings* (Vol. 1674, No. 1, p. 020018). AIP Publishing LLC.
20. **Akhir, R. M.**, & Wahab, Z. A. (2015). THERMAL DIFFUSIVITY STUDIES OF ZnO-CuO AT HIGH TEMPERATURES. *Jurnal Teknologi*, 76(3).
21. Ismail, N. H., Zulklipli, M. L., Baharudin, H. K., Rifin, N. H., & **Akhir, R. M.** (2015). Comparative study on membrane solubilisation of biosynthesized nano-silver & biosynthesized nano-zinc oxide on selected sperm parameter. *Malaysian Applied Biology*, 44(3), 55-62.

CONTRIBUTION OF EXPERTISE:

1. **Examiner:**
Research proposal examiner for Master (by research), Nur Farhana Rosman, Effect of ZnO Nanoparticles on Extend Shelf Life of Mango Coated, Universiti Teknologi MARA, MALAYSIA, March 2018.
2. **Editor:**
Guidelines on Supervision, Assessment, Evaluation and Format for Students' Project, 3rd Edition, Faculty of Applied Sciences, Universiti Teknologi MARA, MALAYSIA, March 2019.
3. **Completed Postgraduate (Research) Supervision:**
Master (Research) Supervision, Nur Afiza Ahmad Fairuzi, Biosynthesis Optimization and Characterization of Silver Nanoparticles from *Imperata Cylindrica*, Universiti Teknologi MARA, MALAYSIA, Jan 2020. (Co-SV)
4. **Innovation & Invention Judge:**
Judge for innovation & invention competition- "Festival Sains Teknologi & Inovasi Kebangsaan" (FESTASI) II 2016, Nov 2016
5. **Speaker:**
Title of speech: Nanoscience & Nanotechnology, "Program Jelajah Ilmu Sains Bahan Selangor 2018: "Transforming Waste into Wealth", SMK Kuala Kubu Bharu, Selangor, 18 April 2018.

AWARDS/ACHIEVEMENTS

1. **DIAMOND award**, - Invention (Young Inventor Postgraduate) for "The Amelioration of Graphene Layer from Novel Waste Engine Oil for Sensing Application", Invention, Innovation & Design Exposition (iidex 2019) (Team member)
2. **GOLD award**, "The Amelioration of Graphene Layer from Novel Waste Engine Oil for Sensing Application", Invention, Innovation & Design Exposition (iidex 2019) (Team member)
3. **GOLD award**, "Cost-Effective Nanostructured Zinc Oxide via Green Alternative Synthesis: Eco-friendly vs. Efficacy", Invention, Innovation & Design Exposition (iidex 2019) (Project leader)
4. **SILVER award**, Cost Effective Nano Zinc Oxide for Anti-Corrosion Properties Invention, Innovation & Design Exposition 2017 -International, 2017 (Project leader)
5. **SILVER award**, Preliminary Study on Mechanical Behaviour of Aluminium-Copper (Al-Cu) Reinforced with in-situ Titanium Diboride (TiB₂) Festival Sains Teknologi & Inovasi Kebangsaan (Festasi) II 2016. -National, 2016 (Team member)
6. **SILVER award**, Innovative Green Corrosion Inhibitor of Mild Steel by Nano Zinc Oxide Invention, Innovation & Design Exposition 2016 -International, 2016 (Project leader)
7. **UiTM representative**, Bioeconomy Innovation Awards 2016 - Biomalaysia Asia Pacific Bioeconomy 2016- International, 2016. (Team member)
8. **Service Excellence Awards 2016** – awarded by Universiti Teknologi MARA, Malaysia.
9. **GOLD award**, Emerging Agents of Sperm Membrane Solubilisation: Implementation of Biosynthesized Nano-Silver and Biosynthesized Nano-Zinc Oxide Invention, Innovation & Design Exposition 2015 -International, 2015 (Team member)
10. **BRONZE award**, Ultrasonic Wave and pH Enhanced the Formation of TiO₂ Nanotube Structure, Invention, Innovation & Design Exposition 2014 -International, 2014 (Team member)
11. **SILVER award**, "Prospective Application of Antimicrobial Nanosilver/Pandanus" Invention, Innovation, & Design (iid Johor) -National, 2013 (Team member)
12. **GOLD award**, Future Antimicrobial Application of Biogenic Silver Nanoparticles Invention, Innovation & Design Exposition 2013 -International, 2013 (Team member)