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EDUCATION

- **Ph.D Environmental Engineering**, 2014, University of Malaya
- **MSc. Environmental Engineering**, 2010, Universiti Sains Malaysia
- **BEng. (Honours), Mineral Resources Engineering**, 2009, Universiti Sains Malaysia

RESEARCH INTEREST

- Environmental Nanocatalysis
- Heterogeneous Photocatalysis
- Advanced Oxidation Processes (AOPs)
- Magnetic Semiconductor Nanomaterials
- Solar Energy Photoconversion
- Water & Wastewater Treatment
- Biomass & Bioenergy
- Photoreaction Engineering Design & Modelling

JOURNAL PUBLICATION

1. Monir, M.U., Hasan, M.Y., Ahmed, M.F., Aziz, A.A., Hossein, M.A., Woobaidullah, A.S.M., Biswas, P.K. and Haque, M.N., (2021) Optimization of fuel properties in two different peat reserve areas using surface response methodology and square regression analysis. Biomass Conversion and Biorefinery. Published Online.
2. Monir, M.U., Khatun, F., Aziz, A.A., and Vo, D.V.N., (2020) Thermal Treatment of Tar Generated during Co-Gasification of Coconut Shell and Charcoal. Journal of Cleaner Production. 256 pp. 120305.
3. Monir, M.U., Aziz, A.A., Khatun, F., and Yousuf, A., (2020) Bioethanol Production through Syngas Fermentation in A Tar Free Bioreactor using Clostridium Butrycum. Renewable Energy. 157 pp. 1116-1123.

4. Monir, M.U., Aziz, A.A., Vo, D.V.N., and Khatun, F., (2020) Enhanced Hydrogen Generation from Empty Fruit Bunches by Charcoal Addition into a Downdraft Gasifier. Chemical Engineering Technology. 43(4) pp. 762-769.
5. Monir, M.U., Khatun, F., Ramzilah, U.R., and Aziz, A.A., (2020) Thermal Effect on Co-product with Syngas Through Co-gasification of Coconut Shell and Charcoal. IOP Conference Series: Materials Science and Engineering. 736 pp. 022007.
6. Khatun, F., Aziz, A.A., and Sim, L.C., (2020) Preparation of Reduced Graphene Oxide (RGO) Modified Titanium Dioxide Nanotube (TNTs) as Visible Light Effective Catalyst for the Conversion of CO_2 to CH_4. IOP Conference Series: Materials Science and Engineering. 736 pp. 042002.
7. Remli, U.R.R.P., and Aziz, A.A., (2020) Photocatalytic Degradation of Methyl orange using Carbon Quantum Dots (CQDs) derived from Watermelon Rinds. IOP Conference Series: Materials Science and Engineering. 736 pp. 042038.
8. Tran, N.T., Le, Q.V., Cuong, N.V., Nguyen, T.D., Phuc, N.H.H., Phuong, P.T.T., Monir, M.U., Aziz, A.A., Truong, Q.D., Abidin, S.Z., Nanda, S., and Vo, D.V.N., (2020) La-doped Cobalt supported on Mesoporous Alumina Catalystd for Improved Methane Dry Reforming and Coke Mitigation. Journal of Energy Institute. 93 pp 1571-1580.
9. Islam, A., Ahmed, T., Awual, M. R., Sultana, M., Aziz, A.A., Monir, M.U., Teo, S.H., and Hasan, M., (2020) Advances in Sustainable Approaches to Recover Metals from E-Waste- A Review. Journal of Cleaner Production. 244 pp. 118815.
10. Sim, L.C., Koh, K.S., Chin, Y.H., Aziz, A.A., and Saravanan, P., (2020) In Situ Growth g-C_3N_4 on TiO_2 Nanotube Arrays: Construction of Heterostructures for Improved Photocatalysis properties. Journal of Environmental Chemical Engineering. 8 pp103611.
11. Monir, M.U., Aziz, A.A., Kristanti, R.A. and Yusouf A., (2020) Syngas Production from Co-gasification of Forest Residue and Charcoal in a Pilot Scale Downdraft Reactor. Waste and Biomass Valorization. 11:635–651.
12. Monir, M.U., Aziz, A.A., Yousuf, A., and Alam, M.Z., (2019) Hydrogen-rich Syngas Fermentation for Bioethanol Production using Sachromyces Cerevisiea. International Journal fo hydrogen Energy. 2020 pp. 18241-18249.
13. Khatun, F., Aziz, A.A. Sim, L.C., and Monir, M.U., (2019) Plasmonic Enhanced Au Decorated TiO_2 Nanotube Arrays as a Visible Light Active Catalyst Towards Photocatalytic CO_2 Conversion to CH4. Journal of Environmental Chemical Engineering. 2019 pp. 103233.
14. Ramzilah, U.R., and Aziz, A.A., (2019) Removal of Methyl Orange (MO) using Carbon Quantum Dots (CQDs) derived from Watermelon Rinds. International Journal of Engineering Technology and Sciences. 6(1) pp. 91-99.
15. Lim, P.F., Leong, K.H., Sim, L.C., Aziz, A.A., and Saravanan, P., (2019) Amalgamation of N-Graphene Quantum Dots with Nanocubic like TiO_2: An Insight Study of Sunlight Sensitive Photocatalysis. Environmental Science and Pollution Research. 26 pp.3455–3464.
16. Khatun, F., Aziz, A.A. Kafi, A.K.M., and Sim, L.C., (2018) Synthesis and Characterization of TiO_2 Nanotube using Electrochemical Anodization Method. International Journal of Engineering Technology and Sciences. 5(3) pp. 132-139.
17. Monir, M.U., Aziz, A.A., Kristanti, R.A. and Yusouf A., (2018) Gasification of Lignocellulosic Biomass to Produce Syngas in a 50kW Downdraft Reactor. Biomass and Bioenergy. 119 pp. 3335-345.

18. Leong, K.H., Aziz, A.A., Sim, L.C., Saravanan, P., Jang, M. and Bahnemann, D. (2018) Mechanistic Insights into Plasmonic Photocatalysts in Utilizing Visible Light. Beilstein Journal of Nanotechnology. 9 pp. 628-648.
19. Monir, M.U., Aziz, A.A., Kristanti, R.A. and Yusouf A., (2018) Co-gasification of Empty Fruit Bunch in a Downdraft Reactor: A Pilot Scale Approach. Bioresource Technology Reports. 1 pp. 39-49.
20. Aziz, A.A. and Ibrahim, S. (2018) Preparation of Activated Carbon/ N-doped Titania Composite for Synergistic Adsorption-Photocatalytic Oxidation of Batik Dye. IOP Conf. Series: Materials Science and Engineering. 358 pp. 012014-012019.
21. Kusbiantoro, A., Embong, R., and Aziz, A.A., (2018) Strength and Micorstructural Properties of Mortar Containing Soluble Silica from Sugarcane Bagasse Ash. Key Engineering Materials. 765 pp. 269-274.
22. Monir, M.U., Yusouf A., Aziz, A.A. and Atnaw, S.M. (2017) Enhancing Co-gasification of Coconut Shell by Reusing Char. Indian Journal of Science and Technology. 10 pp. 1-5.
23. Leong, K.H., Aziz, A.A., Kang, Y.L., Goh, S.W., Singh, K.V., Sim, L.C. and Saravanan, P. (2017) Synergized Mechanistic and Solar Photocatalysis Features of N-TiO_2 Functionalised Activated Carbon. Aims Materials Science. 4 pp. 800-813.
24. Tai, J.Y., Leong, K.H., Saravanan, P., Aziz, A.A. and Sim, L.C. (2017) Dopant-Free Oxygen-Rich Titanium Dioxide: LED Light- Induced Photocatalysis and Mechanism Insight. Journal of Materials Science. 52 pp. 11630-11642
25. Aziz, A.A., Ibrahim, S. and Saravanan P. (2015) Nanocrystal TiO_2 engulfed SiO_2-Barium Hexaferrite for Enhanced Electrons Mobility and Solar Harvesting Potential. Materials Science Forum. 819 pp. 226-231.
26. Aziz, A.A., Yau, Y.H., Puma, G.L., Fischer, C., Ibrahim, S. and Saravanan, P. (2014) Highly efficient magnetically separable TiO_2-graphene oxide supported $SrFe_{12}O_{19}$ for direct sunlight-driven photoactivity. Chemical Engineering Journal. 235 pp. 264-274.
27. Aziz, A.A., Puma, G.L., Ibrahim, S. and Saravanan, P. (2013) Preparation, characterization and solar photoactivity of titania supported strontium ferrite nanocomposite photocatalyst. Journal of Experimental Nanoscience. 8(3) pp. 295-310.
28. Somayajula, A., Aziz, A.A., Saravanan, P. and Matheswaran, M. (2013) Adsorption of mercury (II) ion from aqueous solution using low-cost activated carbon prepared from mango kernel. Asia-Pacific Journal of Chemical Engineering. 8(1) pp. 1-10.
29. Aziz, A.A., Cheng, C.K., Ibrahim, S., Matheswaran, M. and Saravanan, P. (2012) Visible light improved, photocatalytic activity of magnetically separable titania nanocomposite. Chemical Engineering Journal. 183 pp. 349-356.
30. Aziz, A.A., Yong, K.S., Ibrahim, S. and Saravanan, P. (2012) Enhanced magnetic separation and photocatalytic activity of nitrogen doped titania photocatalyst supported on strontium ferrite. Journal of Hazardous Materials. 199-200 pp. 143-150.
31. Narayana, R.L., Matheswaran, M., Aziz, A.A. and Saravanan, P. (2011) Photocatalytic decolourization of basic green dye by pure and Fe, Co doped TiO_2 under daylight illumination. Desalination. 269 pp. 249-253.
32. Kamaruddin, M.A., Yusoff, M.S., Aziz, A.A., Lo, M.R. (2012) Influence of impregnation ratio on chemically modified silica sand for heavy metals removal from stabilized landfill leachate. International Journal of Environmental Protection. 2(3) pp. 15-22.

RESEARCH PROJECT (PRINCIPAL INVESTIGATOR)

1. Elucidation of kinetics and mechanism of dye wastewater treatment and hydrogen production over CQDs/ g-C3N4 photocatalyst (on-going).
2. Economical scale-up anodization device of TiO2 nanotube photocatalyst (on-going).
3. Synthesis Hydrocarbon from Co-Gasification of Lignocellulosic Biomass and Coal (ended).
4. Hydrocarbon fuel production from direct conversion of carbon dioxide through plasmonic mechanism in noble nanocomposite photocatalyst (ended).
5. Localized surface plasmon resonance mechanism in graphene-noble metal-TiO2 nanotube photocatalysts for direct conversion of CO2 to hydrocarbon fuel (ended).
6. Solar harvesting biomass derived carbon quantum dots (CQDs) based composite photocatalysts for water purification (ended).
7. Development and modification of TiO2 based-nanophotocatalyst for direct conversion of CO2 to hydrocarbon fuel (ended).
8. Preparation of Sunlight-Driven Photocatalyst with Localized Surface Plasmon Resonance Property for the Removal of Organic Pollutants (ended).
9. Treatment of Industrial Effluent from W.R. Grace Specialty Chemicals (M) Sdn. Bhd. By Advanced Oxidation Process using Commercialized Titanium Dioxide (ended).

SUPERVISION (THESIS)

1. Bioethanol Production from Co-Gasification of Lignocellulosic Biomass and Charcoal, PhD, Main Supervisor.
2. Pozzolanic and Strength Properties of Mortar Containing Chemically Pre-Treated Coal Bottom Ash, PhD, Co-Supervisor.
3. Photocatalytic Degradation of Methylene Blue by CQDs based Composite Derived from Watermelon Rinds, MSc, Main Supervisor.
4. Photocatalytic Conversion of Carbon Dioxide to Methane Using RGO/Au-TNTs, MSc, Main Supervisor.

AWARD

1. Dean’s Award for Research Excellence 2021.
2. Gold Medal in Creation, Innovation, Technology and Research Exposition 2021- Pt-TNT for Conversion of Carbon Dioxide to Methane.
3. Silver Medal in Creation, Innovation, Technology and Research Exposition 2021- CQDs-TNTs Photocatalyst for CO2 Conversion.
4. Best Invention in Fluids Award, Creation, Innovation, Technology and Research Exposition 2021.
5. Gold Medal in Creation, Innovation, Technology and Research Exposition 2020- Nanoparticles for CO2 Conversion.
6. Gold Medal in International Invention, Innovation & Technology 2020.
7. Cendekia Bitara Award for Journal Publication 2019.
8. Cendekia Bitara Award for Journal Publication 2018.
9. Excellence Service Award 2018.
10. Excellence Service Award 2016.