Dr. Md. Maksudur Rahman Khan (CEng MIChemE)

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EDUCATION

1994 - 1997 Lviv Polytechnic National University, Lviv, Ukraine **PhD**
1989 - 1994 Lviv Polytechnic National University, Lviv, Ukraine **MSc**

APPOINTMENTS

2019 - Present: Professor, Department of Chemical Engineering, Universiti Malaysia Pahang (UMP), Malaysia
2010-2019: Associate Professor, Faculty of Chemical and Process Engineering Technology, UMP, Malaysia
2010-2015: Professor, Shahjalal University of Science and Technology (SUST), Bangladesh
2007-2010: Associate Professor, SUST, Bangladesh
1999-2007: Assistant Professor, SUST, Bangladesh
2003-2005: Research Associate, Fuel Cell Centre, Yuan Ze University, Taiwan
1998-1999: Lecturer, SUST, Bangladesh

SELECTED AWARDS – Comprehensive list attached

2019 & 2015 Excellent Service Award, UMP
2020 & 2016 Best Postgraduate Supervisor Award, UMP
2015 Gold medal in SIIF 2015, S. Korea on: Wastewater to Battery Material
2014 Gold medal in Archimedes 2014, Russia: Development of plywood adhesive with waste rubber powder as filler
2014 Gold medal in Archimedes 2014, Russia: Development of nanoparticle loaded empty fruit branch fibre reinforced composite.
2012 Gold Medal and Special Platinum Award in British invention Show (BIS 2012, UK): Bio adhesive for plywood application

POST-DOCTORAL / VISITING FELLOWSHIPS

2017 : Visiting Research Scholar at Sheffield Hallam University
2003-2005: Research Associate, Fuel Cell Centre, Yuan Ze University, Taiwan

PROFESSIONAL MEMBERSHIP

- Chartered Engineer IChemE (Reg. No.: 654740)
- Member CSChE (616897)
- Fellow *Institution of Engineers, Bangladesh* (F/9879)
- Life Member of *Bangladesh Chemical Society*

RESEARCH INTEREST

- CO_2 fixation through photo/electrocatalytic pathways
- Waste valorisation via bio-, photo/electro- and thermo-catalytic pathways such as microbial fuel cell for simultaneous wastewater treatment, power generation and biopolymer production using wastewater or low-cost biomass as feed
- Biohydrogen production from food waste
- Photoreforming of wastewater for hydrogen generation
- Biofuel production from lignocellulosic biomass
- Thermocatalytic dry reforming of methane to produce syngas.
- Biodegradable composites

INSTITUTIONAL SERVICE

- Committee / Panel member at UMP
    - Graduate Study Committee
    - University Research Committee
    - Research Grant Evaluation Panel
- PhD and MSc Program Evaluator
    - DRB-HICOM University of Automotive Malaysia

- Evaluator for External Research proposal
  - Sultan Qaboos University, Oman (2014)
  - Chilean National Science and Technology Commission (2016-2017)
- External Reviewer for PhD proposal
  - Wageningen University, Netherlands (2016)
- External Examiner for PhD thesis
  - UKM, Malaysia
  - Annamalat University, India (2016)
  - Islamic University, Bangladesh

TEACHING – Sample teaching feedback attached.

I have been teaching undergraduate and postgraduate level programs. As a course coordinator, my courses at UMP included Chemical Engineering Thermodynamics, Chemical Reaction Engineering I and II, Advanced reaction engineering (E) and Electrochemical Engineering (E). In Masters level, I have delivered Catalytic Reaction Engineering.

SUMMARY OF THESIS RESEARCH SUPERVISION – Comprehensive list attached

PhD: Completed - 13
Ongoing - 4
Selected Thesis: Tailoring the Preparation of Palm Oil Based Alkyd/Epoxy Resin Composite through Copper Oxide Nanoparticles (by Ong Huei Ruey)

Masters: Completed: 10
Ongoing: 1
Selected Thesis: Photoelectrocatalytic reduction of CO_2 into methanol over CdS modified copper based photocathoDE (by Mostafa Tarek)

Undergraduate: Completed: 36
(Research-led) Ongoing: 5
Selected Thesis: Tailoring the preparation of alkyd resin using MgO nanoparticles

Undergraduate: Completed: 8
(Plant design) Ongoing: 1
Selected Report: Production of 100,000 MTA bio-oil from empty fruit bunch (EFB) via pyrolysis process

SUMMARY OF RESEARCH GRANTS / FUNDING – Comprehensive list attached

At UMP, I have obtained about RM 2 million (Malaysian currency) research funding that include 3 international, 15 national and 3 industrial grants. Sources of the funding include:

- Funding from Academy of Sciences-Malaysia and Royal Academy of Engineering-UK, SABIC (Saudi Arabia)
- Ministry of Higher Education-Malaysia
- Universiti Malaysia Pahang Research Grant
- Industry (Tioxide Sdn BhD, Lynas Malaysia)

PATENTS & INVENTIONS

- A process for the simultaneous production of PHB and electricity from palm oil waste. UI 2018701538 (2018)
- A method for producing battery electrode material from wastewater. UI 2015704240 (2015)
- A method for Producing Antimicrobial Polymeric Material. PI 2015703870 (2015)
- A method of developing a high-performance microbial fuel cell. PI 2015000405 (2015)
- A method of enhancing the efficiency of optical switch. PI 2014002027 (2014)
- An adhesive composition for binding plywood, PI 2013700677 (2013)
- Method for producing biodiesel from non-edible oil using lipase as catalyst, PI 2013001240 (2013)
- Natural fibers reinforced polyester resin composites and method of formation thereof, PI 2013700405, Malaysia (2013)
- Copper nanoparticles reinforced fibers and method of formation thereof, MY-166383-A, Malaysia (2013)
- Development of natural based adhesive for partially substitute the petrochemical based adhesive in wood applications, PI 2012002069 (2012)
- A mouthwash formulation, PI 2012004805 (2012)

- An antibiotic ointment composition and a method of production thereof, PI 2012700870, (2012)
- An improved adhesive composition, MY-156220-A (2011)
- Catalytic coatings, method for forming the same, and their application, US Patent 20070082137 (2007)
- Containing the platinum catalyst and their manufacturing methods and its application, Taiwan Patent Grant: I304357
- Catalyst for oxidation of tert.butyl alcohol to methacrolein, Ukraine Patent 37342, Publication date: 2001/05/15

SUMMARY OF PULICATIONS – Comprehensive list attached

Journal publications:

- WoS (D-9837-2017): Total papers – 140; Citation – 2468; h-index – 27; Average citations per year = 129.9
- Scopus (ID: 8585203800): Total papers – 167; Citation - 2940; h-Index: 28
- Google Scholar: Total papers – 190; Citation – 4220; h-Index: 34

Other publications:

- 56 Conference papers
- 1 Book
- 7 Book chapters

OTHER HIGHLIGHTS

- Head of Research Group, Reaction Engineering, 2012 – 2019.
- Fellow, Centre of Excellence of Advanced Research in Fluid Flow (CARIFF), UMP
- Editorial Board Member: *Journal of Mechanical Engineering and Sciences*
- Guest Editorial Board Member: *Industrial and Engineering Chemistry Research* 58(2)
  MATEC Web of Conferences, Volume 62 (2016)
  Journal of Physics: Conference Series, Volume 1711, Issue 1 (2020)
- Keynote Speaker: *5th International Conference on Engineering, Research, Innovation and Education* (ICERIE, 2019), January 25-27, 2019, Sylhet, Bangladesh
  International Conference on Materials, Energy, Environment and Engineering (ICMEEE 2020), Nov 29-30, 2020, Jashore, Bangladesh.
- Technical Committee Member: *3rd International Conference on Materials Sciences and Nanomaterials* (ICMSN 2019), July 22-24, University of Oxford, the United Kingdom
  10th International Conference on Chemical Engineering and Applications (CCEA 2019), May 29-31, 2019, Beijing, China
  3rd International Conference on Chemical and Food Engineering (ICCFE 2016), April 8 -9, 2016, Tokyo, Japan
- Organizing Secretary: *Conference on Engineering Research, Innovation and Education*, 11 – 13 January 2010, Sylhet, Bangladesh.
- Co-Supervisor of Research: Asia Pro Eco Project "INNOWA": (Dec 2005 – April 2007)
- International Expert Advisor for Research Project: Srinakharinwirot University (2013-2014)
- Reviewer of Journals: *Journal of Materials Chemistry A*, *Langmuir*, *Applied Catalysis: A*, *Bioresource Technology*, *Journal of Hazardous Materials*, *Bioresources*, *Cellulose*, *Polymer Bulletin*, *Journal of Chemical technology and Biotechnology*, *Industrial Crops and Products*, *Water, Air& Soil Pollution*, *Industrial and Engineering Chemistry Research*, *Green Chemistry*.

Attachments

LIST OF RESEARCH GRANTS

International Level

1. Development of an efficient photocatalyst for CO2 reduction into methanol under visible light (Funded by SABIC, King Abdulaziz University, Saudi Arabia) – RM 13,900.00, Completed (PI)
2. Sustainable transformation of food waste for energy generation, and by product utilization (Funded by Newton Research Collaboration Programme - Academy of Sciences, Malaysia and Royal Academy of Engineering, UK) – GBP23000.00, completed (Co-PI)
3. Preliminary study on steam explosion process using jute fibre (Funded by Bangladesh Jute Mills Corporation, Bangladesh) - RM 24,274.00, Completed (Co-PI)

National Level (Funded by Ministry of Education Malaysia)

4. FRGS: The mechanisms of Tailoring Catalysis Systems for Photoelectochemical Reduction of CO2, RM 126,500.00, Completed (PI)
5. FRGS: Formulation Mechanism of Photocalalyst and It's Kinetic Study for CO2 Reduction, RM 86,180.00, Completed (PI)
6. ERGS: Overcoming the Barrier of Lower Generation in Microbial Fuel Cells by Introducing New Electrogens in Anode and Nanoparticles Loaded Cathode, RM 50,000.00, Completed (PI)
7. TRGS: Artificial Intelligence Guided Evaluation of Photoreforming to Develop Circular Economy Model for a Complete Treatment Solution of Petrochemical Industrial Wastewater, RM 550,000.00, Ongoing (Co-PI)
8. TRGS: Silver Nanoparticle incorporated Cellulose Nanocrystal for Antimicrobial Biodegradable Packaging and Its Socio-economic Implications, RM 670,000.00, Ongoing (Co-PI)
9. FRGS: Interaction of Magnetic Field on the Alignment of Iron Nano Particle Coated Nanocrystalline Cellulose in Biodegradable Composites, RM 94,500.00, Ongoing (Co-PI)
10. FRGS: A hybrid system of microbial electrolysis cell and anaerobic digestion for high content of biomethane production, RM 128000.00, Ongoing (Co-PI)
11. FRGS: Mechanism of Electroporation Effect on Deformation of Lignocellulosic Biomass to Enhance Fermentation Process, RM 61,500.00, Completed (Co-PI)
12. FRGS: Interaction of nanoparticle on bioresin synthesis by in-situ reaction and its effects on the formulation of heat resistant paint, RM 107075.00, Completed (Co-PI)
13. FRGS: Kinetics, Reaction Mechanism and Stability of Sol-Gel Synthesized LaNiO3 and LaCoO3 Perovskite Catalysts for Syngas Formation from Steam Reforming of Palm Oil Mill Effluent (POME), RM 85,000.00, Completed (Co-PI)
14. RACE: Kinetic Reaction Analysis of Catalytic Syngas production from Glycerol, RM 50,000.00, Completed (Co-PI)
15. FRGS: Kinetics and Spectroscopic Analyses of Syngas Production from Glycerol Steam Reforming over 15wt%Ni/85wt% Alumina Catalyst, RM 106,000.00, Completed (Co-PI)
16. FRGS: Interaction Mechanisms and Kinetics of Ultrasound Treated Oil Palm Fibre Reinforced Green Composites, RM 80,260.00, Completed (Co-PI)
17. PRGS: Prototype Development for the Production of corrosion and Heat Resistant Roofing Materials from Green Composites, RM 290,000.00, Completed (Co-PI)
18. ERGS: A Novel Syngas Production Method via Photoreforming of POME Waste Over TiO2- Supported Noble Metal-Doped Photocatalysts, RM 50,000.00, Completed (Co-PI)
19. FRGS: Heterogeneous Kinetic Study and Residue Curve Map (RCM) Determination for the Recovery of Acrylic Acid from the Industrial Wastewater via Esterification, RM 81,770.00, Completed (Co-PI)

*FRGS- Fundamental Research Grants Scheme; PRGS- Prototype Research Grants Scheme; TRGS- Transdisciplinary Research Grants Scheme; ERGS- Exploratory Research Grants Scheme

University Fund

20. Development of oil palm empty fruit bunch fiber reinforced epoxidized palm oil based alkyd nanocomposite, RM 38,000.00, Ongoing (PI)
21. Development of Multicomponent Catalytic System for the Conversion of Non-Edible Oil Feedstock to Biodiesel, RM 36,500.00, Completed (PI)
22. Development of Electrocatalyst for Air Cathode microbial fuel Cell for power Generation and Simultaneous Treatment of Palm Oil Mill Effluent, RM 29,950.00, Completed (PI)
23. Simultaneous power generation and wastewater treatment in microbial fuel cell, RM 37000.00, Completed (PI)
24. Sustainability assessment of biohydrogen production from citrus waste, RM 24,500.00, Ongoing (Co-PI)

25. Nanostructured hybrid iron-based oxygen scavengerin supressing the heat stable salts formation during the amine absorption process, RM 20,000.00, Ongoing (Co-PI)
26. Investigate of iron nano particle coated graphene in biodegradable composites, RM 34,500.00, Ongoing (Co-PI)
27. Synthesis of silver nanoparticles mediated bioactive compounds for degradation of textile dyes, RM 27,500.00, Ongoing (Co-PI)
28. Kinetic study of photoelectrocatalytic remediation of petrochemical wastewater (PWW) over Pd-TiO2/rGO catalyst, RM 27,000.00, Ongoing (Co-PI)
29. An application of hydrothermal process to treat palm oil mill effluent (POME), RM 39000.00, Completed (Co-PI)
30. Catalytic conversion of palm oil mill effluent into biogasoline, RM 98,232.00, Completed (Co-PI)
31. Modification of the Rice Husk as Solid Adsorbent using Chemical Method for CO2 Capture, RM 30,500.00, Completed (Co-PI)
32. Synthesis and Characterization of EFB-Cliker Supported Nickel Catalyst for Syngas Production from Reactive Fluid Mixture of CO2-CH4, RM 24,900.00, Completed (Co-PI)
33. Lipid Biosynthesis from Oleaginous Yeast from Biodiesel Feedstock using Palm Oil mills Effluent Through its Remediation, RM 20,000.00, Completed (Co-PI)

INDUSTRIAL GRANTS

1. Utilization of solid and liquid waste from Tioxide, RM 90,000.00. Funded by Tioxide Malaysia, Completed (Co-PI)
2. Treatment and recovery of Metal Ions from Lynas wastewater, RM 20,000.00: Funded by Lynas Malaysia, Completed (Co-PI)

CONSULTENCIES

1. UMP Green Technology Sdn. Bhd., 2012 – 2015: Industrial waste utilisation
2. UMP Keraglow Sdn. Bhd: Jan 2021 – till now; Process optimisation, wastewater treatment
3. NANOSILTECH Sdn Bhd, Malaysia, 2018; Preparation of nanosilica from rice straw
4. PT PUSACO International, Indonesia, 2019: River water treatment

RESEARCH AWARDS

1. Gold medal and Best innovation award for the project: Green hydrogen generation from petrochemical wastewater, CITREX 2021, March 2021 (University Level)
2. Gold medal for the project: Biopolymer and green energy from palm oil mill effluent using bioelectrochemical system, ITEX 2018, May 2018 (National)
3. Silver medal for the project: Recycle CO_2 to methanol using artificial photosynthesis, ITEX 2017, May 2017 (National)
4. Silver medal for the project: Bioresin from crude palm oil, MTE 2018, Feb 2018 (National)
5. Silver medal for the project: Natural based SiO2 nanofluids, ITEX 2019, May 2019 (National)
6. Silver medal for the project: Green polymer from crude palm oil, CITREX 2016, March 2016 (University Level)
7. Gold medal for the project: Photosynthesis: Turn CO2 into Fuel, CITREX 2016, March 2016 (University Level)
8. Silver medal for the project: Flat Sheet MFC, CITREX 2016, March 2016 (University Level)
9. Gold medal for the project: Wastewater to Battery Material, SIIF 2015 (S. Korea), Nov 2015 (International)
10. Silver medal for the project: Antimicrobial Bioresin, CITREX 2015, March 2015 (University Level)
11. Silver medal for the project: III-generation Biofuel from palm oil mill effluent, CITREX 2015, March 2015 (University Level)
12. Silver medal for the project: Light Induced Biodiesel Production, CITREX 2015, March 2015 (University Level)
13. Silver medal for the project: CO2 to Methanol, CITREX 2015, March 2015 (University Level)
14. Bronze medal for the project: Green Energy from POME, CITREX 2015, March 2015 (University Level)
15. Gold medal for the project: Development of plywood adhesive with waste rubber powder as filler, Archimedes 2014 (Russia), April 2014 (International)
16. Gold medal for the project: Development of nanoparticle loaded empty fruit branch fibre reinforced composite, Archimedes 2014 (Russia), April 2014 (International)
17. Silver medal for the project: Development of High-Performance Air Cathode Microbial Fuel Cell Using Palm Oil Mill Effluent, i-ENVEX 2014, April 2014 (National)
18. Gold medal for the project: Nano-Tunable Optical Switch, CITREX 2014, March 2014 (University Level)
19. Gold medal for the project: Plywood adhesive with waste rubber powder as filler, ITEX 2013, May 2013 (National)
20. Silver medal for the project: Development of nanoparticle loaded empty fruit branch fibre reinforced composite, ITEX 2013, May 2013 (National)
21. Gold Medal and Special Platinum Award for the project: Bioadhesive for plywood application, BIS 2012 (UK), Oct 2012 (International)

22. Gold medal for the project: Development of Jatropha oil based bioadhesive for plywood application , ITEX 2012, May 2012 (National)
23. Bronze medal for the project: Development of Natural Antibiotic Ointment using Latex of Jatropha Curcas, BioMalaysia 2012, Nov 2012 (National)
24. Silver medal for the project: Formulation of non-toxic mouthwash lotion from the latex of Jatropha curcas, CITREX 2012, March 2012 (University)
25. Bronze medal for the project: Development of good quality bio-hydrogel for wound healing using Jatropha latex, CITREX 2012, March 2012 (University)
26. Bronze medal for the project: Biodegradable composite from oil palm fiber, CITREX 2012, March 2012 (University)
27. Gold medal for the project: Corrosion and Heat Resistant Roofing Materials from Green Composites, ITEX 2011, May 2011 (National)
28. Silver medal for the project: Formulation of Melamine Urea Formaldehyde resin (MUF) with various fillers as adhesive, CITREX 2011, April 2011 (University)

LIST OF THESIS RESEARCH SUPERVISION

Catalysis (Thermo/Photo/Protoelectrocatalysis)

- *PhD Level*

1. Mohammed Anwar Hossain, Syngas production from methane dry reforming over CeO_2 promoted $Ni/CaFe_2O_4$ catalyst (SV: Completed in 2018)
2. Ayodele Bamidele Victor, Kinetics, mechanistics and optimization studies of catalytic methane dry reforming over light rare-earth oxides supported Co catalysts (Co-SV, Completed in 2017).
3. Kaykobad Md. Rezaul Karim, Photoelectrocatalytic reduction of CO_2 to hydrocarbons using $CuFe_2O_4$ modified graphene oxide composite (SV, Completed in 2019)
4. Md Noor Bin Arifin, Photocatalytic Treatment on Petrochemical Waster Water over Titania Nanoparticles (TNP)/Carbon Nanotubes (CNT) Photocatalysts (SV, Ongoing)
5. Thurga Devi A/P Munusamy, Production of hydrogen by photocatalytic reforming of petrochemical wastewater (SV, Ongoing)
6. Emyra Ezzaty Masiren, Photo-degradation of palm oil mill effluent using visible light responsive photocatalyst (Co-SV, Ongoing)
7. Hamidah Binte Abdullah, Photocatalytic reduction of CO_2 to methanol under visible light irradiation using n-CeO_2/TiO_2 catalyst (Co-SV, Completed in 2017)
8. Ng Kim Hoong, An Application of Advanced Oxidation Process to Photopolish Palm Oil Mill Effluent Over TiO_2 and ZnO Photocatalysts (Co-SV, Completed in 2017)

- *MSc Level*

9. Muhd Zahiruddin Shukor, Photocatalytic reduction of CO2 over photochemically synthesized Ag doped TiO2 nanoparticles (Co-SV, Ongoing)
10. Mostafa Tarek, Photoelectrocatalytic reduction of CO_2 over metal ferrite based cathode (SV, Completed in 2020)
11. Woon Chee Wai, Tailoring manganese dioxide electrocatalyst by platinum and carbon nanotube for air-cathode microbial fuel cell (SV, Completed in 2017)
12. Md. Rahim Uddin, Development of TiO_2 loaded $CuFe_2O_4$ photocatalyst for CO_2 conversion into methanol under visible light irradiation. (SV, Completed in 2016)
13. Mohd Rizauddin Bin Deraman, Synthesis and characterization of platinum doped titania and silver doped titania for photo-catalytic degradation of pre-treated palm oil mill effluent (Co-SV, Completed in 2015)
14. Kong Zi Ying, Application of $CuFe_2O_4$ for photocatalytic fenton degradation of glycerol (Co-SV, Completed in 2015)

Advanced Materials

- *PhD level*

15. Ong Huei Ruey, Tailoring the Preparation of Palm Oil Based Alkyd/Epoxy Resin Composite through Copper Oxide Nanoparticles (SV, Completed in 2016)
16. Heba Mohammad Ahmad Al Share, Production and Characterization of Cellulose Nanocrystal (CNC) Reinforced Biodegradable Composite for Food Packaging Application (SV, Ongoing)
17. Ibrahim Tarek F Abdelhadi, Isolation and structural identification of lignin from oil palm fibre, (CoSV, Ongoing)
18. Wan Mohd Eqhwan Iskandar Wan Saiful BahrI, Investigation on the impregnation kinetics of rice husk nanosilica in the preparation of oil palm fibre reinforced biodegradable composite (CoSV, Ongoing)
19. Md.Najmul Kabir Chowdhury, Synthesis and Characterization of Nanoparticle Incorporated Polymer Composite Materials (Co-SV, Completed in 2014)

20. Norazlina Binti Hashim, Thermal And Biodegradable Properties Of Ploly(Lactic Acid)Carbon- Based Nanocomposites (Co-SV, Completed in 2020)

- *MSc Level*

21. Farhana Sultana Toma, Separation and modification of lignin and its application as binder in wood composites (Co-SV, Ongoing)
22. Ong Huei Ruey, Optimization and characterization of melamine urea formaldehyde (MUF) based adhesive using natural fillers for plywood (Co-SV, Completed in 2011)
23. Nur Farihain Binti Khusnun, Jatropha oil based bio-adhesive for plywood application, (SV, Completed in 2014)

Bioprocess:

- *PhD Level*

24. Baranitharan Ethiraj, Potentiality of Microbial Fuel Cell Anode with Enhanced Electron Transfer Mechanism (SV: Completed in 2014)
25. Mohammed Amirul Islam, The influence of microbial mutualistic interactions and biofilm formation on the performance of microbial fuel cell (SV: Completed in 2018)
26. Md. Ahasanul Karim, Electroporation of lignocellulogic biomass to enrich biogas production by solid state anaerobic fermentation (Co-SV: Completed in 2021)

- *MSc level*

27. Ponnarasy Ganasen, Effect of light irradiation on immobilizied lipase activity in hydrolysis and esterification reactions (SV, Completed in 2014)
28. Abeed Fatima Bte Mohidin Batcha, Biosynthesis of Poly(3-Hydroxybutyrate) (PHB) By Cupriavidus necator H16 From Jatropha Oil as Carbon Source (SV, Completed in 2014)
29. Sumaya Sarmin, Treatment of petrochemical wastewater using continuous flow microbial fuel cell (SV, Completed in 2020)

Undergraduate Supervision (as main supervisor at Universiti Malaysia Pahang)

Undergraduate Research Projects

1. Ainihayati binti Ismail, Mathematical modeling of adsorption for wastewater treatment, 2012
2. Roshaiza binti Muhamad, Improvement of the cold property of biodiesel from palm oil, 2012
3. Ahmad Safwan bin Abdul Halim, Kinetic study of biodiesel production by two step method, 2012
4. Nor Amalina binti Hussain, Preparation, Characterization and activity evaluation of multicomponent photocatalyst under visible light irradiation, 2012
5. W. Muhammad Mutammimul Ula, Fixed bed adsorption for wastewater treatment, 2012
6. Karthik A/L Vasutheavan, Production of biodiesel from rubber seed oil, 2012
7. Go Bee Chew, Wastewater treatment by continuous stirred tank reactor, 2013
8. Wendy Kong Yin Jou, Removal of manganese from synthetic wastewater, 2013
9. Tan Wooi Chuan, Modification of titanium dioxide nanoparticle to enhance the photoactivity in visible light, 2013
10. Leong Sheng Yau, Copper doped TiO2 nanoparticles for enhanced photocatalytic activity under visible light irradiation, 2013
11. Nitthiyah A/P Jeyaratnam, Optimization and characterization of melamine urea formaldehyde based adhesive with waste rubber powder as filler, 2013
12. Dinesh Kumar A/L Raman, Optimization and characterization of glycolysis of waste polyethylene terephthalate with polyethylene glycol, 2013
13. Chan Wei Tatt, Optimization and characterization of glycolysis of waste polyethylene terephthalate with diethylene glycol, 2013
14. Vela A/L Lai Kin Ming, Preparation and characterization of catalyst from local industry waste (red gypsum) for biodiesel synthesis, 2013
15. Siti Norhaslina Bt Halim, Biodiesel production from rubber seed oil using lipase as catalyst, 2013
16. Lim Jia Han, Simultaneous power generation and wastewater treatment by using air-cathode single chamber microbial fuel cell, 2014
17. Gan Jin Keong, Photocatalytic activity and kinetic study of dye removal over CuFe2O4 under visible light irradiation, 2014
18. Nurul Fatihah Binti Mohamad Roli, Kinetic study of esterification of fatty acids over calcium ferrite catalyst, 2014
19. Chan Kar Min, Nanostructured Pt/MnO2 catalysts and their performance for oxygen reduction reaction in air cathode microbial fuel cell, 2014
20. Ahmad Shafiq bin Hashim, Adsorption of methylene blue from aqueous solution using tea waste in a continuous stirred tank reactor (CSTR) , 2014
21. Nur Sabrina binti Rahmat, Preparation and characterization of photocatalyst for the conversion of CO2 to methanol, 2015

22. Wan Nurul Najihah Binti Wan Ghafar, Effect of metal nanoparticle on curing kinetic of bioresin, 2015
23. Lin Choo Quan, Simultaneous power generation and waste water treatment using microbial fuel cell, June 2015
24. Syamsiah Mohamed Alam Sickandar, Development of CaFe2O4/TiO2 for wastewater treatment (POME) in visible light irradiation, June 2015
25. Lau Kar Sin, Conversion of carbon dioxide to methanol under visible light irradiation using CuFe2O4/zeolilte photocatalyst, Dec 2015
26. Dinie Bin Jamil, Development of MnO2-PVP-CNT Catalyst for Air-cathode Microbial Fuel Cell, Dec 2015
27. Tey Lee Siang, Preparation and characterization of MnO2-PANI-CNT Catalyst for Air-cathode Microbial Fuel Cell, Dec 2016
28. Gan Wei Teng, Tailoring the preparation of alkyd resin using MgO nanoparticles, Dec 2016
29. Mariotte anak Patrick Jebi, CuO-TiO2 as a visible light responsive catalyst for the photoreduction of CO2 to methanol, Dec 2016
30. Nishantini Muniandy, Acetic acid production by microbial electrosynthesis from carbon dioxide, Jan 2018
31. Muhammad Syarif Wira'i Bin Abd Razak, Development of heterogeneous catalyst for glycerolysis and polyesterification of vegetable oil, Jan 2018
32. 32. Radfan Abdulmalek Alqadhi, Development of visible light responsive catalyst for CO2 reduction to fuel , June 2019
33. Mahmood Riyadh Ali Saleh Atta, Photoelectrocatalytic conversion of CO2 over metal-free carbocatalyst, June 2019
34. Rikhneshwarran A/L Sundara Ratan, Development of nanoparticle incorporated epoxidized bioresin from palm oil, Jan 2020
35. Lew Xue Fang, Epoxidation of bioresin and its curing effect, Jan 2020
36. Christy Wee Fui Yen, Synthesis and characterization of nitrogen deficient gC3N4 for photoelectrocatalytic CO2 reduction, Ongoing
37. Pannir A/L Abimanan, Photocatalytic treatment of wastewater over Fe2O3@C(CN)3, Ongoing
38. Amyleen binti Barnabas Alex, Preparation and characterization of Pd/gC3N4 based electrode for electrooxidation of glycerol to organic acids, Ongoing
39. Theodora Stefhie Johnny, Photoelectrocatalytic CO2 reduction over PANI modified gC3N4 photocathode to C1-C2 hydrocarbons, Ongoing
40. Nurul Asmira binti Zalani, Development of metal free catalyst for photoreforming of wastewater for hydrogen generation, Ongoing

Plant Design Projects

1. Nur Intan Shaheera, Muhammad Hazidie, Balqis Binti Nasaruddin, Rahmathunnisa Binti Jamaluddin, Ng Wai Hoe, Production of 50,000 metric tonnes per year of ammonium sulfate (ongoing)
2. Ahmad Nur Fikry, Tan Pei Yee, Siti Hajar, Raffizah binti Isa, Mehammed Khaled, Production of 90,000 MTA butanol from propylene, 2020
3. Tristan Law, Lee Kien, Nurliyana Binti Raja Ahmad, Muhammad Fuad, Marliana Binti Wahab, Rhakesh A/L Gandhi, Production of 100,000 metric tonnes per year of propylene glycol methyl ether from propylene oxide and methanol, 2019
4. Kee Keing Lee, Low Chen Wei, Nur Nazzatul Farra, Muhammad bin Baharudin, Nur Siti Hawa, Production of 30,000 MTA od middle distillate from natural gas, 2018
5. Lim Kang Wei, Nur Syahida Binti Hasbullah, Tengku Indok Munirah Binti Daeng Yacob, Nursyifak Binti Saimi, Nur Syahirah Binti Mohammad Nor, Production of 35 000 mtpa of biodiesel using waste cooking oil via acid-catalyzed transesterification, 2017
6. Elaine Pui Chiew Ling, Fatimah Binti Shamsudin, Fatin Nasuha Binti Yahya, Anees Alina Binti Azahari, Nor Akmalina Binti Mustazar, Production of 60,000mtpa of hydrogen from natural gas, 2016
7. Siti Fadila Binti Masrur, Farah Liyana Binti Mat Lazin, Nurul Fatihah Binti Mohammad, Zuhaima Binti Yunos, Muhammad Safuan Bin Abu Hassan, Production of 50,000 mtpa liquified butadiene by oxidation of 1-Butene, 2015
8. Muhamad Zahrul bin Ghazali, Nur Medieha binti Md Yusof, Siti Farhana binti Haron, Siti Zaharah binti Sulaiman, Rabiatul Adawiyah binti Zaukifly, Production of 100,000 MTA high density Polyethylene (HDPE), 2013
9. Khoo Choon Gek, Mohamad Norahinman B Abdurahman, Nurliana bte Ismail, Souven Jawa Anak Steward Gima, Production of 100,000 MTA bio-oil from empty fruit bunch (EFB) via pyrolysis process, 2012

International Students Internship (three months duration)

1. Rakesh Vaasun, Meenatchi Sundaram Dhandapani, Palm oil mill treatment in microbial fuel cell, 2019
2. Loguprasanth Kanagaraj, Pravabathi Jayapal, Phenol degradation and power generation in microbial fuel cell, 2019
3. Mupiri Manasa, Optimization of microbial fuel cell performance, 2020

PUBLICATIONS

WoS (D-9837-2017): Total papers – 140; Citation – 2468; h-index – 27; Average citations per year = 129.9
Scopus (ID: 8585203800): Total papers – 167; Citation - 2940; h-Index: 28
Google Scholar: Total papers – 190; Citation – 4220; h-Index: 34

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1. Ahasanul Karim, M. Amirul Islam, Puranjan Mishra, Abu Yousuf, Che Ku Mohammad Faizal, Md. Maksudur Rahman Khan. (2021) Technical difficulties of mixed culture driven waste biomass-based biohydrogen production: Sustainability of current pretreatment techniques and future prospective, ***Renewable and Sustainable Energy Reviews***, 151, p. 111519 https://doi.org/10.1016/j.rser.2021.111519 (Impact factor: 14.98)
2. Sumaya Sarmin, Mostafa Tarek, Chin Kui Cheng, Selvaraj Mohana Roopan, Md Maksudur Rahman Khan, (2021). Augmentation of microbial fuel cell and photocatalytic polishing technique for the treatment of hazardous dimethyl phthalate containing wastewater, ***Journal of Hazardous Materials***, 415, p. 125587 https://doi.org/10.1016/j.jhazmat.2021.125587 (Impact factor: 9.038)
3. Sumay Sarmina, MostafaTarek, Selvaraj MohanaRoopan, Chin KuiCheng, Md Maksudur Rahman Khan, 2021. Significant improvement of power generation through effective substrate-inoculum interaction mechanism in microbial fuel cell. ***Journal of Power Sources***, 484(1), p. 229285 https://doi.org/10.1016/j.jpowsour.2020.229285 (Impact factor: 8.247)
4. Ahasanul Karim, M Amirul Islam, Puranjan Mishra, Abu Jafar Md Muzahid, Abu Yousuf, Md Maksudur Rahman Khan, Che Ku Mohammad Faizal, 2021. Yeast and bacteria co-culture-based lipid production through bioremediation of palm oil mill effluent: a statistical optimization, ***Biomass Conv. Bioref.*** (2021). https://doi.org/10.1007/s13399-021-01275-6 (Impact factor: 4.987)
5. Ahasanul Karim, M Amirul Islam, Zaied Bin Khalid, Abu Yousuf, Md Maksudur Rahman Khan, Che Ku Mohammad Faizal. 2021, Microbial lipid accumulation through bioremediation of palm oil mill effluent using a yeast-bacteria co-culture, ***Renewable Energy***, 176, pp. 106 -114 https://doi.org/10.1016/j.renene.2021.05.055 (Impact factor: 8.001)
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8. Thurga Devi Munusamy, Sim Yee Chin, Mostafa Tarek, Md.Maksudur Rahman Khan, 2021. Sustainable hydrogen production by CdO/exfoliated g-C3N4 via photoreforming offormaldehyde containing wastewater, ***International Journal of Hydrogen Energy***, 46(60), pp. 30988-30999. https://doi.org/10.1016/j.ijhydene.2021.01.176 (Impact factor: 5.816)

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