



## CURRICULUM VITAE



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### EDUCATION BACKGROUND

1. PhD Combustion Engineering, University of Sheffield, UK (2005)
2. B. Eng (Chemical), Universiti Teknologi Malaysia (2000)

### RESEARCH INTERESTS

1. Waste and Biomass Valorizations into **Bioenergy**, Biofuels and Bioproducts (biomass gasification, pyrolyses, combustion and anaerobic digestion)
2. **Environmental** pollution control and treatment (gas cleaning, sludge and wastewater treatment)
3. Chemical reactor **engineering** (fluidized bed technology, proses optimization)

### PROFESSIONAL MEMBERSHIP

1. Professional Engineer (Peng), Board of Engineers Malaysia - PE18887
2. Chartered Member (CEng), Institute of Chemical Engineers (IChemE) - 99914377
3. Graduate Member and Co-opted member for Chemical Engineering Technical Division (CETD), Institute of Engineers Malaysia (IEM) – (2014-2016)
4. Associate member of Young Scientist Network-Academy of Sciences Malaysia (YSN-ASM)
5. Biochar Malaysia Association (BMA)
6. Regional director for the Society of Circular, Regenerative and Sustainable Systems (CRES)

### EMPLOYMENT & ADMINISTRATION POSITION

| Position                                                                                                                   | Duration              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. <b>Head</b> of Sustainable Process Engineering Research Centre (SPERC), UPM                                             | 2019-2021             |
| 2. <b>Industrial intern</b> , Pakar Management Sdn Bhd                                                                     | 2017                  |
| 3. <b>Research Coordinator</b> , Dept. of Chemical and Environmental Engineering, Faculty of Engineering, UPM              | 2015-2017             |
| 4. Ahli Jawatankuasa Environmental Management system ( <b>EMS</b> ), UPM                                                   | 2017                  |
| 5. <b>Ahli Jawatankuasa Kecil Kurikulum</b> (JKKK), UPM (Undergraduate)                                                    | 2013 to 2016          |
| 6. <b>Academic Coordinator</b> , Dept. of Chemical and Environmental Engineering, Faculty of Engineering, UPM              | 2012 to 2015          |
| 7. <b>Associate professor</b> , UPM                                                                                        | Apr 2012 to date      |
| 8. <b>Postdoctoral/visiting scholar</b> , Dept. of Chemical & Biomolecular Engineering, University of Melbourne, Australia | 2008-2009             |
| 9. <b>Senior lecturer</b> , Dept. of Chemical and Environmental Engineering, UPM                                           | Jun 2008 to           |
| 10. <b>Lecturer</b> , Dept. of Chemical and Environmental Engineering, UPM                                                 | March 2012            |
| 11. <b>Tutor</b> , Department of Chemical and Environmental Engineering, UPM                                               | May 2005 to May 2007  |
|                                                                                                                            | Sept 2000 to Apr 2005 |

## RESEARCH & DEVELOPMENT PROJECTS

### Project Leader/Investigator (PI)

Number of projects : 20    Amount (RM) = 2,000,600.00

| No | Project Title                                                                                                                                | Period (year)          | Source of fund     | Amount (RM)    |
|----|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------|----------------|
| 1  | Biogas production from transfer station MSW                                                                                                  | 2005-2006              | UPM                | 10,000         |
| 2  | Agro-waste gasification to produce bio-fuel                                                                                                  | 2006-2008              | SF/MOSTI           | 198,000        |
| 3  | Fundamental study of physico-chemical characterization of incinerated biomass ashes                                                          | 2007-2009              | FRGS/MOHE          | 80,000         |
| 4  | <b>Postdoctoral fellowship; Negative CO2 emissions: The role of biomass (university of Melbourne, Australia)</b>                             | <b>2009-2011</b>       | <b>BRAIN GAIN</b>  | <b>90,000</b>  |
| 5  | Performance Studies of Anaerobic Digestion of Biowaste for better Municipal Solid Waste Management in Malaysia                               | 2009-2011              | UPM/PUTRA          | 160,000        |
| 6  | Kinetic Studies Of CO2 Adsorption On carbonaceous Surfaces From Biomass-Derived Biochars                                                     | 2010-2012              | FRGS/MOHE          | 40,000         |
| 7  | Catalytic bubbling fluidized bed membrane gasifier (CFBMG) for Malaysian Biomass                                                             | 2012-2013              | PUTRA/UPM          | 80,000         |
| 8  | hydrogel biochar composite for CO2 sequestration                                                                                             | 2012-2014              | FRGS/MOHE          | 98,000         |
| 9  | Research fellowship for women in science (FWIS) ; Development of hydrogel biochar composite for CO2 capture                                  | 2012-2012              | LOREAL             | 20,000         |
| 10 | Mechanistic studies on biochar-based carbon for energy storage                                                                               | 2014                   | FRGS/MOHE          | 121,000        |
| 11 | Process Integration and Supply Chain Optimisation of a Sustainable Biorefinary                                                               | 2014                   | LRGS/MOHE          | 125,000        |
| 12 | Fabrication of integrated biomass gasification and fischer tropesch for power (10kW) and fuel production                                     | 2014                   | PRGS/MOHE          | 165,000        |
| 13 | Applicator chamber design – simulation study on power and energy intensity distribution on high power microwave heating for biomass (PPRN)   | Jan-15–Jun 2016        | PPRN/MOHE          | 25,000         |
| 14 | Utilization of Renewable Durian Peels as Potential Biosorbent for Malaysia Industrial Wastewater Treatment                                   | Apr-16–Mac 2019        | PUTRA/UPM          | 20,000         |
| 15 | Carbon capture & utilisation in power plant (project 2): Simultaneous SOx-NOx removal using impregnated metal oxide                          | Jan-17-Dec 2019        | PUTRA/UPM          | 148,000        |
| 16 | <b>Understanding of Biomass and Energy-Food-Environmental-Water (BEFEW) nexus through biomass value chains multi-optimizations modelling</b> | <b>May-17-Oct 2019</b> | <b>NEWTON/RCUK</b> | <b>505,600</b> |

|    |                                                                                                                                         |                            |                    |                  |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|------------------|
| 17 | Feasibility study of application of Ionic Liquids (Ils) for bio-product development from Microalgae & Lignocellulosic materials         | Aug-17-<br>Jan 2019        | MATCHIN<br>G / UPM | 50,000           |
| 18 | Microwave-derived EFB Biochar as Potential Solid Fuel for Power Generation                                                              | 15-Feb-<br>18<br>-Apr 2019 | GP-<br>IPS/UPM     | 20,000           |
| 19 | Optimization of Enzymatic Hydrolysis From microalgae and Bioactive Peptide Fractionation Using Ultrafiltration Membrane As Antioxidants | 2-Apr-18-<br>Jun 2020      | GP-<br>IPS/UPM     | 25,000           |
| 20 | Gasification of Utilized Crops for Power Generation in Rural Area                                                                       | Jan 2015-<br>dec 2016      | GP-<br>IPS/UPM     | 20,000           |
|    |                                                                                                                                         |                            |                    | <b>2,000,600</b> |

### Project Member (Co- Investigator)

Number of Projects : 12 Amount (RM) = 1,757,800.00

| No | Title                                                                                                                                               | Period (year)                         | Sponsor/ Grant                                         | Amount (RM)      |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------|------------------|
| 1  | Enhanced Pyrolysis Using Biomass Microwave Carbonizer (BMC) To Convert Palm Oil Biomass (Empty Fruit Bunch) Into Biochar As Alternative Fuel Source | 2017-<br>2019                         | INOVASI/<br>UPM                                        | 426,800.00       |
| 2  | Renewable energy production from agroindustry biomass using microwave technology                                                                    | 2007-<br>2009                         | SF/MOSTI                                               | 100,000          |
| 3  | Novel pyrolysis technology in recovering renewable fuels & precious metals                                                                          | 2006-<br>2008                         | SF/MOSTI                                               | 128,000          |
| 4  | Construction artificial consortia of microorganism using dielectrophoresis (DEP) for wastewater treatment                                           | 2007-<br>2009                         | SF/MOSTI                                               | 249,000          |
| 5  | Pyrolyses & gasification process for hydrogen production                                                                                            | 2007-<br>2008                         | UPM                                                    | 80,000           |
| 6  | Modelling microalgal gasification using Thermodynamic Equilibrium Approach                                                                          | 2015-<br>2017                         | FRGS/MOHE                                              | 57,000           |
| 7  | An Integrated Thermochemical and fermentation system for conversion of Microalgal biomass for Production of biofuel                                 | 2015-<br>2017                         | UPM                                                    | 140,000          |
| 8  | Vermi-composting for solid waste recycling to promote green technology                                                                              | 2014-<br>2015                         | KTP grant<br>/MBMB                                     | 300,000          |
| 9  | Vermi-composting for solid waste recycling to promote green technology                                                                              | 2013-<br>2014                         | KTP grant<br>/MPSJ                                     | 143,000          |
| 10 | Applying New Methods Of Determining Output Frequency Response Function In The Analysis and Design Of Chemical Engineering Process                   | 2018-<br>2020                         | GP/UPM                                                 | 60,000           |
| 11 | Renewable and Sustainable Biohydrogen Production From Attached-Biofilm Mixed Anaerobic Cultures With Biomass As Fermentation Feedstocks             | 2018-<br>2020                         | GP/UPM                                                 | 60,000           |
| 12 | <b>A systems approach to synergistic utilisation of secondary organic streams (SYNERGORS) – university of Oxford, UK(travel grant)</b>              | <b>Jan<br/>2018-<br/>Jun<br/>2021</b> | <b>UK<br/>Research &amp;<br/>Innovation<br/>(UKRI)</b> | <b>14,000</b>    |
|    |                                                                                                                                                     |                                       |                                                        | <b>1,757,800</b> |

### CONSULTATIONS PROJECTS

**Project Leader : 7 ( RM 273,470) ; Project Member : 5 (RM 148,340)**

| No | Project Title                                                                                                      | Client                                                        | Amount (RM)    | Year                 | Role   |
|----|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------|----------------------|--------|
| 1  | Waste Composition study for Jeddah landfill                                                                        | Green Energy Sdn Bhd                                          | 20,000         | 2014                 | member |
| 2  | Kajian penaiktarafan dan penjenamaan semula R&D dan pembangunan standard keselamatan dan kesihatan pekerjaan (KKP) | National Institute of Occupational, Safety and Health (NIOSH) | 6,000          | 2016                 | member |
| 3  | PPRN microwave carbonizer                                                                                          | Pakar management technology sdn bhd                           | 25,000         | 2015-2016            | Leader |
| 4  | Biochar Microwave Carbonizer (BMC) design for Biochar production as alternative solid fuels                        | Pakar Go green sdn bhd                                        | 9,000          | 2016-2017            | Leader |
| 5  | Design, fabrication and training of 30KW gasifier system for power generation                                      | crops for future research (CFFRC)                             | 158,680        | 2014-2016            | Leader |
| 6  | Design and testing of gasification system for eureka Synergy Sdn Bhd                                               | Eureka Synergy Sdn Bhd                                        | 38,400         | 2016-2017            | Leader |
| 7  | Rubber scrap RDF as potential solid fuel                                                                           | Lembaga getah malaysia (LGM)                                  | 13,000         | 2015                 | Member |
| 8  | Characterization of Coal Bottom Ash and Adsorption Testing For CO2 Capture                                         | Tenaga Nasional Berhad Reseach (TNBR)                         | 9,540          | 2016                 | Leader |
| 9  | KAJIAN SIMULASI SISTEM MICROWAVE " BIOMASS MICRIOWAVE CARBONIZER (BMC)                                             | Pakar Go green sdn bhd                                        | 17,940         | Jan 2017- Dec 2017   | member |
| 10 | Preparation of adsorbent for CO2 capture from coal fire power plant bottom ash                                     | Tenaga Nasional Berhad Reseach (TNBR)                         | 55,000         | Jul 2018             | member |
| 11 | Waste Characterisation for Tampin Transfer Station for EIA report                                                  | Asia Pacific Environmental Consultants Sdn Bhd                | 12476.20       | Sept 2019 – Jun 2020 | Leader |
| 12 | Laboratory Test of Earth Enhancing Compounds (EEC)                                                                 | Tenaga Nasional Berhad Reseach (TNBR)                         | 45,750         | 20.8.19 – 19.11.19   | Leader |
|    |                                                                                                                    |                                                               | <b>390,806</b> |                      |        |

### INTELLECTUAL PROPERTY

| No. | Title                                                                   | Date      | File/Patent Reg. No. |
|-----|-------------------------------------------------------------------------|-----------|----------------------|
| 1   | Eco Enzyme for Wastewater Treatment                                     | 2018      | LY2019000460         |
| 2   | Hydrogel charsh(HC) as powerful adsorbent                               | 10-Jul-05 | LY2016002144         |
| 3   | Production of Oil Palm Spatial Distribution Maps Via Computing Approach | 2019      | In progress          |

## PUBLICATIONS

|                           |    |
|---------------------------|----|
| Cited Journals (PSAS)     | 97 |
| Non-Cited Journals (PSAS) | 15 |
| Books                     | 0  |
| Chapter in a Book         | 4  |
| Module/ Monograf          | 0  |
| Proceedings               | 10 |
| Paper presentations       | 69 |
| Exhibitions               | 12 |
| Others (popular writing)  | 2  |

### **JOURNALS**

#### **Year 2020**

1. NA Nudri, RT Bachmann, **WAWAK Ghani**, DNK Sum, AA Azni (2020). Characterization of oil palm trunk biocoal and its suitability for solid fuel applications, *Biomass Conversion and Biorefinery* 10 (1), 45-55. (Q2:IF 2.326)
2. NSN Shaharum, HZM Shafri, **WAWAK Ghani**, S Samsatli, MMA Al-Habshi (2020). Oil palm mapping over Peninsular Malaysia using Google Earth Engine and machine learning algorithms, *Remote Sensing Applications: Society and Environment*, 100287 (Q2:IF 0.554)
3. Nowilin James Rubinsin, Wan Ramli Wan Daud, Siti Kartom Kamarudin, Mohd Shahbudin Masdar, Masli Irwan Rosli, Sheila Samsatli, John Frederick Tapia, **Wan Azlina Wan Ab Karim Ghani**, Kean Long Lim, Optimization of oil palm empty fruit bunches value chain in Peninsular Malaysia, *Food and Bioproducts Processing* 119, 179-194 (Q2 :IF 3.324)

#### **Year 2019**

1. MAA Hamzah, AB Alias, NRN Him, ZA Rashid, **W Ghani**, Characterization of food waste and empty fruit bunches (EFB) for anaerobic digestion application, *Journal of Physics: Conference Series* 1349 (1), 012132. (cited journals)
2. AA Azni, **WAWAK Ghani**, A Idris, MFZ Ja'afar, MAM Salleh, NS Ishak (2019). Microwave-assisted pyrolysis of EFB-derived biochar as potential renewable solid fuel for power generation: Biochar versus sub-bituminous coal, *Renewable Energy* 142, 123-129 9. (Q1)
3. NSN Shaharum, HZM Shafri, **WAWAK Ghani**, S Samsatli, HM Prince, Yusof B., Hamud A.M (2019), Mapping the spatial distribution and changes of oil palm land cover using an open source cloud-based mapping platform, *International Journal of Remote Sensing*, 40(19), 7549-7476 (Q2)
4. Md Said, Mohamad Syazarudin, **Wan Abdul Karim Ghani**, **Wan Azlina**, Tan Hong Boon, Siti Aslina Hussain, Denny Kok Sum Ng (2019), Thermochemical Conversion of Napier Grass for Production of Renewable Syngas, *Processes* 7 (10), 705, 2019(Q2)
5. Bing Shen How, Sue Lin Ngan, Boon Hooi Hong, Hon Loong Lam, Wendy Pei Qin Ng, Suzana Yusup, **Wan Azlina Wan Abd Karim Ghani**, Yasuki Kansha, Yi Heng Chan, Kin Wai Cheah, Muhammad Shahbaz, Haswin Kaur Gurdeep Singh, Ahmad Fadzil Ahmad Shuhaili, Jakaria Rambli (2019). An outlook of Malaysian biomass industry commercialisation: Perspectives and challenges, *Renewable and Sustainable Energy Reviews* 113, 109277 (Q1).
6. YH Chan, KW Cheah, BS How, ACM Loy, M Shahbaz, HKG Singh, **WAKG Wan Azlina**, J. Rambli (2019).An overview of biomass thermochemical conversion technologies in Malaysia, *Science of The Total Environment* 680, 105-123, (Q2)
7. R Khezri, **WAK Ghani**, **W Azlina**, S Masoudi Soltani, A Biak, D Radiah (2019). Computational Fluid Dynamics Simulation of Gas–Solid Hydrodynamics in a Bubbling Fluidized-Bed Reactor: Effects of Air Distributor, Viscous and Drag Models, *Processes* 7 (8), 524(cited -Q2)

8. NSN Shaharum, HZM Shafri, **WAWAK Ghani**, S Samsatli, B Yusuf(2019), Mapping the Distribution of Oil Palm using Landsat 8 Data by Comparing Machine Learning and Non-Machine Learning Algorithms, Adapting to Challenges, 123. (Q3)
9. John Frederick D Tapia, Sheila Samsatli, Stephen S Doliente, Elias Martinez-Hernandez, Wan **Azlina Binti Wan Ab Karim**, Kean Long Lim, Helmi Zulhaidi Mohd Shafri, Nur Shafira Nisa Binti Shaharum (2019). Design of biomass value chains that are synergistic with the food-energy-water nexus: Strategies and opportunities, Food and Bioproducts Processing, Volume 116, July 2019, Pages 170-185. (Q2)
10. **Wan Ab Karim Ghani**, W.A., Salleh, M.A.M., Adam, S.N.,Jaye, I.F.M., Martinez-Hernandez, E(2019). Sustainable bio-economy that delivers the environment–food–energy–water nexus objectives: The current status in Malaysia, Food and Bioproducts Processing Volume 118, November 2019, Pages 167-186. (Q2)
11. M Ngabura, SA Hussain, **WAWAK Ghani**, MS Jami, YP Tan (2019), Optimization and activation of renewable durian husk for biosorption of lead (II) from an aqueous medium, Journal of Chemical Technology & Biotechnology 94 (5), 1384-1396, 2019 (cited)
12. S Saleh, **WAWAK Ghani**, SK Loh (2019).Treated Coal Bottom Ash for Palm Oil Mill Effluent (POME) Decolourisation. Journal of Physical Science 30 (3). (Q3)
13. N Rasit, L Hwe Fern, **WAW Ab Karim Ghani** (2019), Production and Characterization of Eco Enzyme Produced from Tomato and Orange Wastes and Its Influence on the Aquaculture Sludge, International Journal of Civil Engineering and Technology 10 (3), 2019
14. NSN Shaharum, HZM Shafri, **W Ghani**, S Samsatli, B Yusuf (2019), The utilisation of cloud computing and remote sensing approach to assess environmental sustainability in Malaysia, IOP Conference Series: Earth and Environmental Science 230 (1), 012109, 2019
15. J Rambli, **WAKGW Azlina**, MAM Salleh, R Khezri (2019), Evaluation of Biochar from Sago (Metroxylon Spp.) as a Potential Solid Fuel, BioResources 14 (1), 1928-1940(Q2)
16. K Silas, **WAWAK Ghani**, TSY Choong, U Rashid (2019), Carbonaceous materials modified catalysts for simultaneous SO<sub>2</sub>/NO<sub>x</sub> removal from flue gas: A review Catalysis Reviews 61 (1), 134-161. (Q1)
17. R Khezri, **WAK Ghani**, **W Azlina**, A Biak, D Radiah, R Yunus, K Silas (2019). Experimental evaluation of napier grass gasification in an autothermal bubbling fluidized bed reactor, Energies 12 (8), 1517. (Q2).
18. MS Ahmad, MA Mehmood, H Luo, B Shen, M Latif, **WAWAK Ghani** (2019). Pyrolysis and thermogravimetric study to elucidate the bioenergy potential of novel feedstock produced on poor soils while keeping the environmental sustainability intact, Sustainability 11 (13), 3592(cited-Q2)
19. S Rezaei Motlagh, R Harun, A Biak, D Radiah, SA Hussain, **WAK Ghani**,(2019). Screening of suitable ionic liquids as green solvents for extraction of eicosapentaenoic acid (EPA) from microalgae biomass using COSMO-RS model, Molecules 24 (4), 713. (Q2)

#### Year 2018

1. K Silas, **WAWAK Ghani**, TSY Choong, U Rashid (2018), Activated carbon monolith Co<sub>3</sub>O<sub>4</sub> based catalyst: Synthesis, characterization and adsorption studies, Environmental Technology & Innovation 12, 273-285.(cited, Q3)
2. K Silas, **WAWAK Ghani**, TSY Choong, U Rashid (2018), Breakthrough studies of Co<sub>3</sub>O<sub>4</sub> supported activated carbon monolith for simultaneous SO<sub>2</sub>/NO<sub>x</sub> removal from flue gas, Fuel Processing Technology 180, 155-16.(cited, Q1)
3. N Fuad, R Omar, S Kamarudin, R Harun, A Idris, **WW Azlina** (2018), Effective use of tannin based natural biopolymer, AFlok-BP1 to harvest marine microalgae Nannochloropsis sp.,Journal of Environmental Chemical Engineering 6 (4), 4318-4328.(cited)



4. M Ngabura, SA Hussain, **WAWA Ghani**, MS Jami, YP Tan (2018), Utilization of renewable durian peels for biosorption of zinc from wastewater Journal of Environmental Chemical Engineering 6 (2), 2528-2539.(cited)
5. NH Meri, AB Alias, N Talib, ZA Rashid, **W Ghani** (2018), Comparison of H<sub>2</sub>S adsorption by two hydrogel composite (HBC) derived by Empty Fruit Bunch (EFB) biochar and Coal Fly Ash (CFA), IOP Conference Series: Materials Science and Engineering 334 (1), 012038(cited)
6. M Javidi Gharacheh, M Khojastehpour, M Ebrahimi-Nik, **WAWAK Ghani** (2018), Theoretical and Experimental Study of Potato Shoot Gasification in Fluidized-and Fixed-Bed Gasifier, International Journal of Agricultural Management and Development, 8.(cited)
7. NSN Shaharum, HZM Shafri, **W Ghani**, S Samsatli, B Yusuf (2018), Image classification for mapping oil palm distribution via support vector machine using Scikit-learn module, International Archives of the Photogrammetry, Remote Sensing and Spatial mappinG.(cited)
8. H Madzaki, **WAWAK Ghani**, TCS Yaw, U Rashid, N Muda (2018), Carbon Dioxide Adsorption on Activated Carbon Hydrothermally Treated and Impregnated with Metal Oxides, Jurnal Kejuruteraan 30 (1), 31-38.(non-cited)
9. R Omar, A Idris, R Harun, S Kamaruddin, **W Wan, A Wan**, MKS Mazlina(2018), Comparison of Lipid Quality of Nannochloropsis sp. flocculated via Autoflocculation, AFlok-BP1 and Alum Mazlina, 5th International Symposium on Applied Engineering and Sciences (SAES2017)(non-cited)
10. NSN Shaharum, HZM Shafri, **W Ghani**, S Samsatli(2018), Mapping of the distribution of oil palm using Landsat 8 data by comparing machine learning and non-machine learning algorithms, Pertanika Journal of Tropical Agricultural Science.(cited-Q4)

#### Year 2017

1. TH Boon, A Raheem, **WAWAK Ghani**, SA Hussain, DNK Sum (2017), Thermogravimetric Study of Napier Grass in Inert and Oxidative Atmospheres Conditions, Journal of Physical Science 28, 155 (cited-Q3)
2. A Wahab, R Adawiyah, MA Yahya, KA Matori, **WAWAK Ghani** (2017), Effects of Sintering Temperature on the Mullite-Based Ceramics Fabricated from Rice Husk Ash, Applied Mechanics and Materials 873, 65-70(cited-Q4)
3. I Muhammad Nasir, M Ghazi, T Idaty, R Omar, **WA Wan Abd Karim Ghani** (2017), Anaerobic Batch Digestion of Cattle Manure under Various Oscillatory Flow Mixing., Pertanika Journal of Science & Technology 25 (1)(cited-Q4)
4. D Nuradila, **WAWAK Ghani**, AB Alias (2017), Biochar dan Pemangkin berasaskan tempurung kelapa sawit untuk penghasilan biodiesel, Malaysian Journal of Analytical Sciences 21 (1), 197-203(cited-Q3)
5. NH Meri, AB Alias, N Talib, ZA Rashid, **WAWAK Ghani** (2017), Effect of washing pre-treatment of empty fruit bunch hydrogel biochar composite properties as potential adsorbent, Chemical Engineering Transactions, 2017(cited)
6. NF Ahmad, AB Alias, N Talib, ZA Rashid, **WAWAK Ghani** (2017), Characterization of upgraded hydrogel biochar from blended rice husk with coal fly ash, AIP Conference Proceedings 1901 (1), 130018 (cited)
7. DRA Biak, MR Harun, R Omar, **WAWAK Ghani** (2017), Integrating Facilitative Teaching in Design Based Course, 7th World Engineering Education Forum (WEEF), 216-221(cited)
8. N Rasit, A Idris, **WAWAK Ghani** (2017), Enhancement strategy of methane production from anaerobic digestion start-up process of grease trap waste, Jurnal Teknologi, 79(7)(cited)
9. R Khezri, **WAWAK Ghani** (2017), Computational Modelling of Gas-Solid Hydrodynamics and Thermal Conduction in Gasification of Biomass in Fluidized-Bed Reactor, Chemical Engineering Transactions 56, 1879-1884.(cited)

**Year 2016**

1. N Khairuddin, LA Manaf, MA Hassan, N Halimoon, **WAWAK Ghani** (2016), High solid anaerobic co-digestion of household organic waste with cow manure for mass and energy recovery, Polish Journal of Environmental Studies 25 (4), 1549-54, 2016 (cited)
2. ML Sanyang, **WAWAK Ghani**, A Idris, MB Ahmad (2016), Hydrogel biochar composite for arsenic removal from wastewater, Desalination and Water Treatment 57 (8), 3674-3688 (cited – Q2)
3. **WAWAK Ghani**, PS Fernandez, MQ Halele, S Sobri, J Jasni (2016), Physical and Electrochemical Characterization of Palm Kernel Shell Biochar (PKSB) as Supercapacitor MATEC Web of Conferences, 62, 04003(cited)
4. R Khezri, **W Azlina**, HB Tan (2016), An experimental investigation of syngas composition from small-scale biomass gasification, International Journal of Biomass & Renewables 5 (1), 6-13, 2016 (non-cited)
5. S Saleh, KB Kamarudin, **WAWAK Ghani**, LS Kheang (2016), Removal of Organic Contaminant from Aqueous Solution Using Magnetic Biochar, Procedia Engineering 148, 228-235 (cited)
6. A Raheem, S Sivasangar, **WW Azlina**, YHT Yap, MK Danquah, R arun(2015).Thermogravimetric study of Chlorella vulgaris for syngas production. Algal Research 12, 52-59 (cited -Q2)

**Year 2015**

1. A Raheem, **WW Azlina**, YHT Yap, MK Danquah, R Harun (2015). Thermochemical conversion of microalgal biomass for biofuel production. Renewable and Sustainable Energy Reviews 49, 990-999.(cited -Q1)
2. N Rasit, A Idris, R Harun, **WAWAK Ghani** (2015). Effects of lipid inhibition on biogas production of anaerobic digestion from oily effluents and sludges: An overview. Renewable and Sustainable Energy Reviews 45, 351-358 (cited -Q1)
3. R Nazaitulshila, A Idris, R Harun, **W Wan Azlina** (2015). The Influence of Inoculum to Substrate Ratio on the Biochemical Methane Potential of Fat, Oil, and Grease in Batch Anaerobic Assays. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects 37.(cited-Q3)
4. A Raheem, S Sivasangar, **WW Azlina**, YHT Yap, MK Danquah, R Harun (2015). Algal Research.(cited-Q2)
5. **WAWAK Ghani**, NZ Rebitanim, MAM Salleh, AB Alias (2015). Carbon Dioxide Adsorption on Coconut Shell Biochar. Progress in Clean Energy, Volume 1, 683-693 (cited – Q2)
6. AMA Ahmed, A Salmiaton, TSY Choong, **WW Azlina** (2015). Review of kinetic and equilibrium concepts for biomass tar modeling by using Aspen Plus. Renewable and Sustainable Energy Reviews 52, 1623-1644 (cited – Q1)
7. J Rambli, **WAWAK Ghani**, MAM Salleh (2018), Characterization of Sago-based Biochar as Potential Feedstock for Solid Fuel,Journal of Energy and Safety Technology (JEST) 1 (2).(non-cited)
8. N Khairuddin, LA Manaf, N Halimoon, **WAWAK Ghani**, MA Hassan (2015). High Solid Anaerobic Co-digestion of Household Organic Waste with Cow Manure. Procedia Environmental Sciences 30, 174-179 (non-cited)

**Year 2014**

1. R Harun, JWS Yip, S Thiruvankadam, **WA Ghani**, T Cherrington, (2014), Algal biomass conversion to bioethanol-a step?by?step assessment, Biotechnology journal 9 (1), 73-86 . (IF =3.446)(Q1)



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51. Wan Azlina Wan AB Karim Ghani,Sheila Samatli, KL Lim, Fred Tapia, Azhan Hassan,Ramin Khezri(2018), UNDERSTANDING BIOMASS- ENVIRONMENT- FOOD-ENERGY-WATER (BEFEW) NEXUS TOWARDS A SUSTAINABLE BIO-ECONOMY (ORAL PAPER), International Symposium on Technologies and Materials for Renewable Energy, Environment and Sustainability international International symposium on technologies & materials for renewable energy, environment & sustainability
52. Ramin Khezri, Wan Azlina Wan Ab Ghani, Dayang radiah awang biak & robiah yunus (2018), CFD Modelling of Gas-Solid Hydrodynamics in Fluidized-Bed Gasification: The Effects of Fluid Regime, Drag Models and Air Distributor, international conference on biomass-environmental-food-energy-water(befew) nexus,hotel bangi-putrajaya, Malaysia, 12-13/12/2018
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57. Muhammad Ariff Amir Hamza, Azil Bahari Alias, Nik Raikhan Nik Him, Zulkifli Abd Rashid, Wan Azlina Wan AB Karim Ghani(2018), Characterization of food waste and empty fruit bunch (EFB) for biogas production via anaerobic co-digestion, International conference on biomass-environmental-food-energy-water(befew) nexus international hotel bangi-putrajaya, Malaysia, 12-13/12/2018
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61. Nur Izzati Md Saleh, Wan Azlina Wan Ab Karim Ghani, Razif Harun, and Siti Mazlina Mustapha Kamal. Influence of degree hydrolysis and enzymatic hydrolysis conditions on antioxidant activity of microalgae protein hydrolysate, THE 6TH SYMPOSIUM ON APPLIED ENGINEERING AND science 2018, 15-16/12/2018, Kitakyushu, Japan
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63. Nadly aizat nurdi, robert thomas bachman, W.A.W.A.K., Ghani (2018), Performance Testing of 10 kW Integrated Mobile Gasifier for Sustainable Power and Biofuels Production 5<sup>th</sup>, conference on biotechnology engineering, IIUM, Malaysia, 19-20/9/2018
64. Wan Azlina Wan AB Karim Ghani (2015). A PALM KERNEL SHELL -DERIVED BIOCHAR ACID CATALYST (PKSBC) FOR BIODIESEL PRODUCTION, SOMCHE 2015, national, UPM, 22/10/2015
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66. Wan Azlina Wan AB Karim Ghani, Sheila Samatli, KL Lim, Fred Tapia, Azhan Hassan, Ramin Khezri. UNDERSTANDING BIOMASS- ENVIRONMENT- FOOD-ENERGY-WATER (BEFEW) NEXUS TOWARDS A SUSTAINABLE BIO-ECONOMY (ORAL PAPER POMREQ 2018 (NATIONAL SEMINAR ON PALM OIL MILLING, REFINING, ENVIRONMENT AND QUALITY), The Royale Chulan Hotel Kuala Lumpur, Malaysia, 27-28/11/2018
67. Kiman Silas, W.A. Wan Ab Karim Ghani, T. S. Y. Choong & Umer Rashid, Breakthrough studies of metal oxides supported activated carbon monolith in simultaneous SO<sub>2</sub>/NO<sub>x</sub> removal from flue gas, 31st Symposium of Malaysian Chemical Engineers hotel istana, Malaysia, 5-6 /12/2018
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69. Nur Izzati Md Saleh, Wan Azlina Wan Ab Karim Ghani, Razif Harun, and Siti Mazlina Mustapha Kamal. (2018). Optimization of enzymatic hydrolysis for the production of antioxidative peptide from *Nannochloropsis gaditana* using Response Surface Methodology, 4th international conference on agricultural and food engineering, hotel everly, putrajaya, Malaysia, 7-9/11/2018

#### Other Equivalent Outcomes (Monograph/Module/Popular Writing & Article/Design etc)

| No. | Name of Writer(s)                                                            | Category of Outcome | Year Published |
|-----|------------------------------------------------------------------------------|---------------------|----------------|
| 1   | wan azlina wan ab karim ghani                                                | Popular writing     | 2009           |
| 2   | Wan Azlina Wan Ab Karim Ghani, Reza A. Moghadam, Mohammad Amran Mohd Salleh, | Popular writing     | 2012           |



**Other Presentation (Poster/Product/Exhibition/Showcase)**

| No | Name of Writer(s)                                                           | Title                                                                                                       | Event/<br>seminar/<br>exhibition     | Venue                 | Date |
|----|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------|------|
| 1  | Syafik firdaus and wan azlina wan ab karim ghani                            | Stabilization and recycling of agricultural based residues as potential glass-ceramic based (leader)        | PRPI 2007                            | UPM                   | 2007 |
| 2  | Bahareh sanaie and wan azlina wan ab karim ghani                            | Biological nitrogen removal (BNR) of raw leachate from transfer station)(Leader)                            | PRPI 2007                            | UPM                   | 2007 |
| 3  | Alireza mohadama, mohd amran mohd salleh, wan azlina wan ab karim ghani     | Characterization of agrowaste for possible utilization in renewable energy production                       | PRPI 2007                            | UPM                   | 2007 |
| 4  | Shaari Mustapha & wan azlina                                                | DispergCAL : Chemical Dispersion, Data Base and Simulation software(member)                                 | PRPI 2008                            | UPM                   | 2008 |
| 5  | Syafik firdaus and wan azlina wan ab karim ghani                            | Stabilization and recycling of agricultural based residues as potential recycling material (Leader)         | PRPI 2008                            | UPM                   | 2008 |
| 6  | Alireza mohadama, mohd amran mohd salleh, wan azlina wan ab karim ghani     | Renewable fuel production from agrowaste via gasification                                                   | PRPI 2008                            | UPM                   | 2008 |
| 7  | Shaari Mustapha & wan azlina                                                | Fire Retardancy of PU/clay Nanocomposites : Synergy with Moca and Clay based Fire Retardant (member)        | PRPI 2008                            | UPM                   | 2008 |
| 9  | Wan azlina, azni idris, Rozita omar, salmiaton ali & mohd amran mohd salleh | Mobile gasifier                                                                                             | Research exhibition & networking day | Fakulti kejurute raan | 2016 |
| 10 | Nazatulshila rasisit,                                                       | Eco Enzyme for Wastewater Treatment                                                                         |                                      |                       | 2018 |
|    | Meri, N.H., Alias, A.B., Talib, N., Rashid, Z.A., Ghani, W.A.W.A.K.         | Hydrogel charsh(HC) as powerful adsorbent                                                                   | ITEX 2017                            | KLCC                  | 2017 |
| 11 | Shaharum, N.S.N., Shafri, H.Z.M., Ghani,W.A.W.A. K., Yusuf, B., Hamud, A.M  | Image Classification for Mapping oil palm distribution via support vector machine using scikit learn module | INEX 2018                            | perlis                | 2018 |
| 12 | Wan azlina, shafreeza sobri, SDAR                                           | Biochar is new Green : supercapacitor                                                                       | ICAN 2019                            | UPM                   | 2019 |

### TEACHING DUTIES

|    | Course                             | Code     | Credit     | Sem,    | Teaching assessment |
|----|------------------------------------|----------|------------|---------|---------------------|
| 1  | KEJURUTERAAN MATEMATIK 2           | KKK 3012 | 3          | 2 05/06 | 4.46                |
| 2  | KEJURUTERAAN MATEMATIK 2           | KKK 3012 | 3          | 2 05/06 | 4.53                |
| 4  | AMALI KEJURUTERAAN 1               | KKA 3701 | 1          | 1 06/07 | 4.78                |
| 5  | KEJURUTERAAN MINYAK DAN GAS        | KKA 4410 | 3          | 1 06/07 | 4.53                |
| 6  | KEJURUTERAAN MINYAK DAN GAS        | KKA 4410 | 3          | 1 06/07 | 4.53                |
| 7  | KEJURUTERAAN SISA PEPEJAL          | KKA 4104 | 3          | 2 06/07 | 4.67                |
| 8  | PROJEK TINJAUAN PROSES             | KKA 3907 | 3          | 2 06/07 |                     |
| 9  | PROJEK TINJAUAN PROSES             | KKA 3907 | 3          | 2 06/07 |                     |
| 10 | KAWALAN PROSES & INSTRUMENTASI     | KKA 3313 | 3          | 1 07/08 | 4.34                |
| 11 | KAWALAN PROSES & INSTRUMENTASI     | KKA 3313 | 3          | 1 07/08 | 4.59                |
| 12 | KEJURUTERAAN SISA PEPEJAL          | KKA 4104 | 3          | 2 07/08 | 4.9                 |
| 13 | PEMBANGUNAN DAN PENGURUSAN PROJEK  | KKA 3503 | 3          | 2 07/08 | 4.66                |
| 14 | KEJURUTERAAN SISA PEPEJAL          | KKA 4104 | 3          | 2 07/08 | 4.5                 |
| 15 | KAWALAN PROSES & INSTRUMENTASI     | KKA 3313 | 3          | 1 08/09 |                     |
| 16 | PRINSISP KEJURUTERAAN ALAM SEKITAR | KKA 5102 | 3          | 1/08/09 | 4.07                |
| 17 | SOLID WASTE ENGINEERING (MASTER)   | KKA 4104 | 3          | 2/08/09 | 4.5                 |
| 18 | SOLID WASTE ENGINEERING (BACHELOR) | KKA 4104 | 3          | 2/08/09 | 4.3                 |
| 19 | WATER & WASTEWATER ENGINEERING     | ECH4502  | 3          | 1 11/12 | 4.3                 |
| 20 | AMALI KEJURUTERAAN 1               | KKA 3701 | 1          | 1 11/12 | 4.3                 |
| 21 | PRINSISP KEJURUTERAAN ALAM SEKITAR | KKA 5102 | 3          | 1 11/12 |                     |
| 22 | SOLID WASTE ENGINEERING (MASTER)   | KKA 4104 | 3          | 2 11/12 | 4.5                 |
| 23 | SOLID WASTE ENGINEERING            | KKA 4104 | 3          | 2 11/12 | 4.8                 |
| 24 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 1 11/12 | 4.8                 |
| 25 | UNIT OPERATION II                  | ECH 3117 | 3          | 1 12/13 | 4.6                 |
| 26 | PRINSISP KEJURUTERAAN ALAM SEKITAR | KKA 5102 | 3          | 1 12/13 | 4.8                 |
| 27 | SOLID WASTE ENGINEERING (MASTER)   | KKA 4104 | 3          | 1 12/13 | 4.8                 |
| 28 | SOLID WASTE ENGINEERING            | KKA 4104 | 3          | 2 12/13 | 4.7                 |
| 29 | UNIT OPERATION II                  | ECH 3117 | 3          | 1 13/14 | 4.48                |
| 30 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 1 11/12 | 4.8                 |
| 31 | UNIT OPERATION II                  | ECH 3117 | 3          | 1 13/14 | 4.91                |
| 32 | HEAT TRANSFER PROCESES             | ECH 3113 | 3          | 2 13/14 | 4.9                 |
| 33 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 2 13/14 | 4.8                 |
| 34 | UNIT OPERATION II                  | ECH 3110 | 3          | 1 14/15 | 4.58                |
| 35 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 1 14/15 | 4.87                |
| 36 | HEAT TRANSFER PROCESSES            | ECH 3113 | 3          | 2 14/15 | 4.6                 |
| 37 | UNIT OPERATION II                  | ECH 3110 | 3          | 1 15/16 | 4.72                |
| 38 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 1 15/16 | 4.59                |
| 39 | UNIT OPERATION II                  | ECH 3110 | 3          | 2 15/16 | 4.67                |
| 40 | UNIT OPERATION II                  | ECH 3110 | 3          | 2 15/16 | 4.76                |
| 41 | MASS AND HEAT TRASFER PROCESSES    | ECH 3113 | 3          | 1 16/17 | 4.75                |
| 42 | UNIT OPERATIONS II                 | ECH 3110 | 3          | 2 16/17 | 4.72                |
| 43 | UNIT OPERATIONS II                 | ECH 3110 | 3          | 1 17/18 | 4.62                |
| 44 | MASS AND HEAT TRASFER PROCESSES    | ECH 3113 | 3          | 2 17/18 | 4.56                |
| 41 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 2 16/17 | 4.8                 |
| 42 | UNIT OPERATIONS II                 | ECH 3110 | 3          | 2 16/17 | 4.43                |
| 43 | UNIT OPERATIONS II                 | ECH 3110 | 3          | 1 17/18 | 4.79                |
| 44 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 2 17/18 | 4.46                |
| 45 | MASS AND HEAT TRASFER PROCESSES    | ECH 3113 | 4          | 1 18/19 | 4.53                |
| 46 | SOLID WASTE ENGINEERING & DESIGN   | ECH5104  | 3          | 1 18/19 | 4.78                |
|    | <b>TOTAL CREDIT</b>                |          | <b>136</b> |         |                     |

### STUDENT SUPERVISIONS

| Category        | SUPERVISOR      |          |          |           |           |           | EXAMINER        |          |          |          |           |           |
|-----------------|-----------------|----------|----------|-----------|-----------|-----------|-----------------|----------|----------|----------|-----------|-----------|
|                 | Current student |          |          | Graduate  |           |           | Current student |          |          | Graduate |           |           |
|                 | PhD             | master   | Total    | Phd       | master    | Total     | Phd             | master   | Total    | Phd      | master    | Total     |
| <i>chairman</i> | 3               | 2        | 5        | 3         | 9         | 12        | 1               | 1        | 2        | 1        | 6         | 7         |
| <i>Member</i>   | 4               | 0        | 4        | 8         | 9         | 17        | 6               | 1        | 7        | 7        | 19        | 26        |
| <b>Total</b>    | <b>7</b>        | <b>2</b> | <b>9</b> | <b>11</b> | <b>18</b> | <b>29</b> | <b>9</b>        | <b>2</b> | <b>9</b> | <b>8</b> | <b>25</b> | <b>33</b> |

#### Supervisor (current student)

| No | Programme | category | Name                             | Status           | Sem. No |
|----|-----------|----------|----------------------------------|------------------|---------|
| 1  | PhD       | Chairman | Nur Izzati binti Md Saleh        | Drop             | 8       |
| 2  | PhD       | Chairman | Nurfarahana binti Mohd Nasir     | Continue         | 4       |
| 3  | PhD       | Chairman | Norliyana Farzana binti Zulkefli | Continue         | 2       |
| 4  | PhD       | member   | Mohammed Ngabura                 | Thesis Submitted | 14      |
| 5  | PhD       | member   | Cik Jamla Farhan binti Yahya     | Continue         | 5       |
| 6  | PhD       | member   | Siti Fatimah binti Ismail        | Probation        | 4       |
| 7  | PhD       | member   | Nor Akhlisah binti Zulkupli      | Continue         | 3       |
| 8  | Master    | Chairman | 'atiyyah Ameenah binti Azni      | Continue         | 6       |
| 9  | master    | Chairman | Mohd Nadly Aizat bin Mohd Nudri  | Thesis Submitted | 6       |

#### Supervisor (graduated student)

| No | Prog ramme | category | Matrix No | Name                                 | Senate date | Sem. No |
|----|------------|----------|-----------|--------------------------------------|-------------|---------|
| 1  | Master     | Member   | GS46978   | Siti Nur Atikah binti Mahamud        | 12/09/2019  | 6       |
| 2  | Master     | Member   | GS49241   | Nur Shafira Nisa binti Shaharum      | 12/09/2019  | 4       |
| 3  | PhD        | Chairman | GS26077   | Nor Habsah binti Md Sabiani          | 12/09/2019  | 17      |
| 4  | PhD        | Chairman | GS48827   | Kimam Silas                          | 12/09/2019  | 5       |
| 5  | Master     | Chairman | GS46913   | Jakaria bin Rambli                   | 17/06/2019  | 6       |
| 6  | Master     | Chairman | GS44528   | Syahin binti Mohammad Saleh          | 06/05/2019  | 8       |
| 7  | PhD        | Member   | GS31497   | Ahmed Abdulmajeed Mohammed Al-Ogaidi | 06/05/2019  | 16      |
| 8  | PhD        | Member   | GS36404   | Nuruljannah binti Khairuddin         | 20/03/2019  | 10      |
| 9  | PhD        | Member   | GS38847   | Ahmed Shamil Abdulrahman             | 20/03/2019  | 10      |
| 10 | Master     | Chairman | GS44195   | Hazimah binti Madzaki                | 20/03/2019  | 7       |
| 11 | PhD        | Chairman | GS36523   | Ramin Khezri                         | 04/10/2018  | 11      |
| 12 | Master     | Chairman | GS41970   | Tan Hong Boon                        | 17/05/2018  | 7       |
| 13 | Master     | Member   | GS40861   | Bawaanii a/p Shanmugarajah           | 12/10/2017  | 6       |
| 14 | PhD        | Member   | GS33470   | Ismail Muhammad Nasir                | 09/03/2017  | 10      |
| 15 | PhD        | Member   | GS24160   | Dalia Khalid Mahmoud                 | 04/10/2016  | 14      |
| 16 | PhD        | Member   | GS32220   | Nazaitulshila binti Rasit            | 08/09/2016  | 9       |
| 17 | Master     | Member   | GS38425   | Abdul Raheem                         | 11/02/2016  | 5       |
| 18 | Master     | Member   | GS30960   | Liew Mei Yi                          | 09/10/2014  | 6       |
| 19 | Master     | Member   | GS30625   | Rabiatul Adawiyah binti Abdul Wahab  | 20/03/2014  | 5       |
| 20 | Master     | Chairman | GS31428   | Muhammed Lamin Sanyang               | 09/01/2014  | 5       |
| 21 | Master     | Chairman | GS29046   | Nur Zalikha binti Rebitanim          | 14/11/2013  | 6       |
| 22 | PhD        | Member   | GS21020   | Mazyar Peyda                         | 11/07/2013  | 11      |
| 23 | PhD        | Member   | GS20169   | Mohammed Mahmoud Ahmad Al-Obaidi     | 21/02/2012  | 8       |
| 24 | Master     | Member   | GS23305   | Nsamba Hussein Kisiki                | 12/05/2011  | 5       |
| 25 | Master     | Member   | GS19923   | Seyed Shahabeddin Nehzati            | 12/05/2011  | 7       |
| 26 | Master     | Chairman | GS21510   | Farideh Heidarpour                   | 13/01/2011  | 5       |
| 27 | Master     | Chairman | GS21224   | Alipour Moghadam Esfahani Reza       | 25/11/2010  | 6       |
| 28 | Master     | Chairman | GS16616   | Bahareh Sanaie Movahed               | 10/12/2009  | 7       |
| 29 | Master     | Member   | GS15117   | Nor Fadilah binti Abd. Halim         | 11/09/2008  | 8       |

**Supervision for visiting lecturer/post-doctoral**

| no | NAME           | UNIVERSITY | Level         | Year |
|----|----------------|------------|---------------|------|
| 1  | Ayash Mohamad  | India      | international | 2012 |
| 2  | Motjaba Javidi | Iran       | international | 2015 |
| 3  | Elhadi         | Algeria    | international | 2016 |

**Examiner (current student)**

| No | Prog ramme | category | Matrix No | Name                            | Senate date      | Sem. No |
|----|------------|----------|-----------|---------------------------------|------------------|---------|
| 1  | PhD        | Chairman | GS45638   | Omale, Sunday Ogakwu            | Thesis Submitted | 9       |
| 2  | PhD        | Member   | GS42927   | Shehu Ibrahim Akinfalabi        | Thesis Submitted | 11      |
| 3  | PhD        | Member   | GS46332   | Musa Yahaya Pudza               | Thesis Submitted | 9       |
| 4  | PhD        | Member   | GS42544   | Rabia Daw Ali                   | Thesis Submitted | 11      |
| 5  | PhD        | Member   | GS44080   | Sepehr Azizkhani                | Drop             | 10      |
| 6  | PhD        | Member   | GS45074   | Nur Atiqah binti Mohamad Aziz   | Continue         | 10      |
| 7  | PhD        | Member   | GS49031   | Mohammed Ali Musa               | Drop             | 7       |
| 8  | Master     | Chairman | GS46607   | Zulina bte Abd Maurad           | Continue         | 8       |
| 9  | Master     | Member   | GS48305   | Norshafiqah binti Khairul Anuar | Continue         | 6       |

**Examiner (graduated students)**

| No | Prog ramme | category | Matrix No | Name                              | Senate date | Sem. No |
|----|------------|----------|-----------|-----------------------------------|-------------|---------|
| 1  | PhD        | Member   | GS42099   | Nur Khaliesah binti Abdul Malik   | 12/03/2020  | 9       |
| 2  | PhD        | Member   | GS45066   | Nour A. T. Zghaibi                | 19/12/2019  | 9       |
| 3  | PhD        | Member   | GS43216   | Seyed Amirebrahim Emami Moghaddam | 29/10/2019  | 10      |
| 4  | PhD        | Member   | GS40990   | Fatma Sabariah binti Alias        | 20/03/2019  | 9       |
| 5  | Master     | Chairman | GS40354   | Farah Ezzah binti Ab. Latif       | 19/10/2018  | 6       |
| 6  | PhD        | Member   | GS45136   | Muhammad Salsu Khalil             | 04/10/2018  | 7       |
| 7  | Master     | Chairman | GS33801   | Yoong Jun Hao                     | 12/07/2018  | 11      |
| 8  | PhD        | Member   | GS40365   | Moh Yiing Chiee                   | 08/03/2018  | 7       |
| 9  | PhD        | Member   | GS32450   | Halimatun Saadiah Hafid           | 08/06/2017  | 11      |
| 10 | Master     | Member   | GS37250   | Faten Hameed Kamil                | 07/02/2017  | 6       |
| 11 | Master     | Member   | GS39435   | Nur Salimah binti Mohd Rapeia     | 20/12/2016  | 6       |
| 12 | Master     | Member   | GS34236   | Mostafa Yusefi                    | 10/03/2016  | 5       |
| 13 | Master     | Member   | GS35252   | Nika Alemahdi                     | 08/10/2015  | 5       |
| 14 | Master     | Member   | GS33786   | Siti Nur Aeisyah binti Abas       | 13/08/2015  | 6       |
| 15 | Master     | Member   | GS30037   | Nor Shazwani binti Daud           | 14/05/2015  | 8       |
| 16 | Master     | Chairman | GS31366   | How Cai Kian                      | 12/03/2015  | 7       |
| 17 | Master     | Member   | GS29109   | Nur Amelia Azreen bt Adnan        | 09/10/2014  | 7       |
| 18 | Master     | Member   | GS26208   | Fatin Nordalila binti Omar        | 11/09/2014  | 9       |
| 19 | Master     | Member   | GS30333   | Tengku Roslina binti Tuan Yusof   | 11/09/2014  | 6       |
| 20 | Master     | Member   | GS31880   | Mohd Azwan bin Jenol              | 14/08/2014  | 6       |
| 21 | PhD        | Chairman | GS23839   | Nasrin Khodapanah                 | 16/06/2014  | 10      |
| 22 | Master     | Chairman | GS31754   | Amirkhani Hadi                    | 03/04/2014  | 6       |
| 23 | Master     | Member   | GS26209   | Norhafiza binti Madehi            | 11/07/2013  | 7       |
| 24 | Master     | Chairman | GS30239   | Ahmad Syafiq bin Ahmad Hazmi      | 11/04/2013  | 4       |
| 25 | Master     | Member   | GS24337   | Amir Syariffuddeen bin Mhd Adnan  | 11/04/2013  | 8       |
| 26 | Master     | Chairman | GS28780   | Mohammed Yusuf                    | 14/02/2013  | 4       |
| 27 | Master     | Member   | GS24368   | Siren anak Linggang               | 10/01/2013  | 7       |
| 28 | Master     | Member   | GS23631   | Heri Purwanto                     | 15/05/2012  | 7       |
| 29 | Master     | Member   | GS25662   | Ismail Muhammad Nasir             | 19/03/2012  | 5       |

|    |        |        |         |                                  |            |   |
|----|--------|--------|---------|----------------------------------|------------|---|
| 30 | Master | Member | GS23108 | Nur Mustika binti Mokhtar        | 21/02/2012 | 6 |
| 31 | Master | Member | GS13754 | Azali bin Awaludin               | 21/02/2008 | 8 |
| 32 | Master | Member | GS15598 | Rashmi G Walvekar                | 14/06/2007 | 4 |
| 33 | Maste  | Member | GS14064 | Sumaiya bt Zainal Abidin @ Murad | 14/09/2006 | 9 |

### External Examiner

|    | name                          | organization | level         | year      |
|----|-------------------------------|--------------|---------------|-----------|
| 1  | Nsamba Hussein Kisiki         | UniKL        | PhD           | 2013      |
| 2  | Rusmi Alias                   | UITM         | PhD           | 2014      |
| 3  | muhammad shahbaz              | UTP          | <b>PhD</b>    | 2018      |
| 4  | Mohamad Shahnor Bani          | UITM         | Master        | 2011      |
| 5  | Mohd Shafiq Hakimi Mohd Shaid | UTM          | <b>Master</b> | 2018      |
| 6  | Halim bin Ghafar              | UITM         | Master        | 2013      |
| 7  | Fariha Liana Mohamad Rahim    | UTM          | Master        | 13/9/2015 |
| 8  | Siti Norfariha Bt Mohd Nasir  | USM          | Master        | 9/9/2015  |
| 9  | Siti Aisyah by Ishak          | USM          | Master        | 18/6/2015 |
| 10 | Nurhashimah binti Hanafi      | UTM          | Master        | Sep-15    |
| 11 | Norfatihah bt Abdullah        | USM          | Master        | Nov-16    |
| 12 | HEPHIZIBAH David              | UNITEN       | Master        | 2016      |
| 13 | Mohamad Zarqani yeop          | UITM         | Master        | 2018      |
| 14 | nurfatin aimilia binti rozuki | UTM          | master        | 16-Apr-19 |
| 15 | adrian chun minh loy          | UTP          | master        | Apr-19    |
| 16 | dayang khairunnisa awg azni   | UTM          | master        | Jul-19    |
| 17 | Abdel                         | MJIT         | PhD           | 2020      |



## INDUSTRIES & COMMUNITY LINKAGES

### Involvement in professional association/organization/body

| No | Name of Association/Organization/Body                                                                                                      | Role<br>(President/Secretary/Committee Member/Ordinary Member)                   |
|----|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1  | Institute of Chemical Engineers (IChemE), 99914377                                                                                         | Ordinary Member                                                                  |
| 2  | Board of Engineers Malaysia (BEM), 51718                                                                                                   | Graduate Member                                                                  |
| 3  | Institute of Engineers Malaysia (IEM), Chemical engineering technical division                                                             | co-opted member (CETD) 2014-2016                                                 |
| 4  | Young Scientist Network (YSN), Academy science Malaysia, 2016-2020                                                                         | Co-chair (2019) and chair (2020) science Policy working group / Associate member |
| 5  | Biochar Malaysia Association (BMA), 2013-2014                                                                                              | Ordinary member                                                                  |
| 6  | Technical committee for solid fuel -TC238, Malaysia representative (SIRIM)                                                                 | technical experts                                                                |
| 7  | 5th International Symposium on Applied Engineering and Sciences (SAES 2017)                                                                | AJK                                                                              |
| 8  | 2018 international biomass-environmental-food-energy -water (befew) nexus                                                                  | Chairman                                                                         |
| 9  | 31st symposium of chemical engineers malaysia                                                                                              | AJK- publicity                                                                   |
| 10 | Symposium of Chemical Engineers, (SOMCHE 2010)                                                                                             | AJK - technical                                                                  |
| 11 | Postgraduate Chemical Engineers symposium (POCER 2016)                                                                                     | member                                                                           |
| 12 | Postgraduate Chemical Engineers symposium (POCER 2013)                                                                                     | member                                                                           |
| 13 | international symposium on technologies & materials for renewable energy, environment & sustainability , 6-7 feb 2019,faisalabad, pakistan | plenary speaker                                                                  |
| 14 | ICBIOE 2018                                                                                                                                | invited speaker                                                                  |
| 15 | POMREQ 2018 (NATIONAL SEMINAR ON PALM OIL MILLING, REFINING, ENVIRONMENT AND QUALITY)                                                      | invited speaker                                                                  |
| 16 | 2018 international biomass-environmental-food-energy -water (BEFEW) nexus                                                                  | chairperson                                                                      |
| 17 | 31st symposium of chemical engineers Malaysia 2018 (SOMCHE 2018)                                                                           | chairperson                                                                      |

### Expert/advisory panel

| No. | Task/Role                                                                                                       | Organizations                                 | Year      |
|-----|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------|
| 1   | Technical Committee Panel for TC 238 Solid Biofuels                                                             | Standard Malaysia (SIRIM)                     | 2012-date |
| 2   | Expert panel member for formulating National Policies on Science, technology & Innovation (NPSTI) study for ASM | Academy of sciences Malaysia (ASM)            | 2017      |
| 3   | Evaluator panel for EIA report review                                                                           | Dept. of Environmental (DOE)                  | 2019-2020 |
| 4   | Technical advisory panel for project evaluation                                                                 | Ministry of Housing & Local government (MHLG) | 2019-2020 |
| 5   | Invited panel for Biasiswa Agung                                                                                | Jabatan Perkhidmatan Awam (JPA)               | 2019      |
| 6   | Invited panel for Skim Latihan Persekutuan                                                                      | Jabatan Perkhidmatan Awam (JPA)               | 2019      |
| 7   | Chemical engineering technical division (CETD)                                                                  | Institute of Engineers Malaysia (IEM),        | 2014-2016 |
| 8   | Co-chair Science Policy & Governance Working group of Young Scientist Network (YSN)                             | Academy of sciences Malaysia (ASM)            | 2019      |
| 9   | Chair Science Policy & Governance Working group of Young Scientist Network (YSN)                                | Academy of sciences Malaysia (ASM)            | 2020      |

**Speaker for training / workshops**

|   | <b>INVITED SPEAKERS/TRAINERS</b>                               | <b>Date</b> | <b>Organizer</b>           |
|---|----------------------------------------------------------------|-------------|----------------------------|
| 1 | Speaker for pengurusan dan rekabentuk landfill                 | 2008        | Pakar management sdn bhd   |
| 2 | Speaker for training on industrial wastewater treatment        | 2011        | pakar management sdn bhd   |
| 3 | Speaker for environmental pollution management                 | 2017        | Pakar management sdn bhd   |
| 4 | Speaker for seven keys for successful international researcher | 2012        | Persada ray                |
| 5 | Industrial internship at pakar management sdn bhd              | 2017        | Pakar management sdn bhd   |
| 6 | Trainer for gasifier training                                  | 6.11.17     | Crops for future sdn bhd   |
| 7 | Trainer for 2-days course on algal biotechnology               | 29.2.16     | UPM/TNBR                   |
| 8 | Training on sludge and wastewater treatment                    | 2019        | Cambridge training Sdn Bhd |

**Industrial/ community engagements**

| <b>No</b> | <b>Name of Activity/Project/ Program</b>                                                                               | <b>Organizer</b>                      | <b>Venue</b>              | <b>Date</b> |
|-----------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------|-------------|
| 1         | Hari Transformasi Serdang Bandar Hijau                                                                                 | Majlis perbandaran subang jaya (MPSJ) | Tasek Serdang             | 15.11.15    |
| 2         | PROGRAM GLOBAL-I-LEAD STEM                                                                                             | UPM                                   | UPM                       | 22/11/17    |
| 3         | Pelaksanaan Program Pengukuhan STEM Murid Sekolah Orang Asli (STEM-MOA)                                                | Islamic Relief Malaysia (IRM)         | SK Buluh Nipis            | 16-31/62018 |
| 4         | bBochar is the new green (student supervision)                                                                         | SDAR                                  | UPM                       | 2016-2018   |
| 5         | Hari Transformasi Serdang Bandar Hijau                                                                                 | MPSJ                                  | Tasek Sedang              | 15/11/2015  |
| 6         | Formulating National Policies on Science, technology & Innovation (NPSTI) : for Academy Science Malaysia               | ASM                                   | ASM,                      | 2017        |
| 7         | Science outreach workshop in conjunction with Kuala Lumpur Science & Exhibition Fair (KLESF)                           | MESTECC                               | MIECC serdang             | 2018        |
| 8         | Invited judge panel for Research Day evaluation Politeknik Kuala Selangor, Kuala Selangor                              | Politeknik Kuala Selangor             | Politeknik Kuala Selangor | 2017        |
| 9         | Invited speaker for women in engineering forum organized by Institute Energies Malaysia (IEM) women division           | IEM                                   | UNMC                      | 2015        |
| 10        | Pertandingan asean 7th asean plus three junior science oddyssey (apt-jso-7)                                            | MESTECC                               | UPM                       | May-18      |
| 11        | Pembangunan modul IBSE STEM untuk sekolah rendah by science education working group for academy science Malaysia (ASM) | ASM                                   | ASM                       | 2018        |
| 12        | Riau AgriAqua, Community development Cooperation program by UPM and EMP (Indonesia)                                    | UPM & EMP                             | Acheh                     | 2019        |
| 13        | Demonstration biocompost derived fro blended biochar food-waste                                                        | UPM                                   | UPM                       | 2019        |

|   | <b>Networking</b>                                            | <b>level</b>             | <b>year</b> |
|---|--------------------------------------------------------------|--------------------------|-------------|
| 1 | MOA with university of Bath, UK , UKM, UTP & UNMC            | international & national | 2017-2019   |
| 2 | MOU with oxford university                                   | international            | 2019-2021   |
| 4 | MOA with Institute of Technology petronas (IPTSB), UTP       | national                 | 2018-2019   |
| 5 | NDA Indah Water Konsortium                                   | national                 | 2016        |
| 6 | Consultation agreement with crops for future research centre | National                 | 2016        |

## AWARDS & RECOGNITIONS

| No | Name of Awards/stewardship                                                                                                            | Conferring Body                   | Category      | YEAR AWARD ED | ROLE           |
|----|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|---------------|----------------|
| 1  | Loreal Fellowship Awards 2012                                                                                                         | Loreal Sdn Bhd (UNESCO)           | NATIONAL      | 2012          | PROJECT LEADER |
| 2  | Bronze Medal Award, PRPI 2007(Stabilization and recycling of agricultural based residues as potential glass-ceramic based             | UPM                               | UPM           | 2007          | PROJECT LEADER |
| 3  | Bronze Medal Award, PRPI 2007(Biological nitrogen removal (BNR) of raw leachate from transfer station                                 | UPM                               | UPM           | 2007          | PROJECT LEADER |
| 4  | Silver Medal Award , PRPI 2007(Characterization of agrowaste for possible utilization in renewable energy production (                | UPM                               | UPM           | 2007          | PROJECT LEADER |
| 5  | Silver Medal Award , PRPI 2008(DispergCAL : Chemical Dispersion, Data Base and Simulation Software                                    | UPM                               | UPM           | 2008          | MEMBER         |
| 6  | Silver Medal Award , PRPI 2008(Stabilization and recycling of agricultural based residues as potential recycling material             | UPM                               | UPM           | 2008          | PROJECT LEADER |
| 7  | Gold Medal Award , PRPI 2008(Renewable fuel production from agrowaste via gasification(Leader)                                        | UPM                               | UPM           | 2008          | PROJECT LEADER |
| 8  | Gold Medal Award , PRPI 2008 (Fire Retardancy of PU/clay Nanocomposites : Synergy with Moca and Clay based Fire Retardant (member)    | UPM                               | UPM           | 2008          | MEMBER         |
| 9  | Best overall "Knowledge Transfer Programme" project                                                                                   | MARS                              | NATIONAL      | 2017          | MEMBER         |
| 10 | Asia-Pacific University - Community Engagement Network (APUCEN) International Youth Volunteer Award (Environment Category)            | APUCEN SUMMIT                     | INTERNATIONAL | 2017          | MEMBER         |
| 11 | outstanding women in engineering award                                                                                                | international engineering (India) | international | 2018          | PROJECT LEADER |
| 12 | Knowledge achievement for Nations and Society (KANS) award                                                                            | Mustapha Foundation (Iran)        | international | 2018          | PROJECT LEADER |
| 13 | Silver award MPI exhibition (Eco Enzyme for Wastewater Treatment)                                                                     | UMT                               | National      | 2018          | member         |
| 14 | Silver award ITEX 2018 (Hydrogel charsh(HC) as powerful adsorbent )                                                                   | ITEX 2017                         | International | 2018          | member         |
| 15 | Silver award IIDEA 2018 ; IMAGE CLASSIFICATION FOR MAPPING OIL PALM DISTRIBUTION VIA SUPPORT VECTOR MACHINE USING SCIKIT-LEARN MODULE | I-IDEA 2018                       | International | 2018          | Member         |
| 16 | Anugerah penerima geran antarabangsa UPM                                                                                              | UPM                               | UPM           | 2018          | Project leader |
| 17 | Biochar Microwave carbonizer (BMC)                                                                                                    | I-TEX 2019                        | International | 2019          | member         |

|   | <b>Services awards</b>                     | <b>PERINGKAT</b> | <b>TAHUN</b>           | <b>BILANGAN</b> |
|---|--------------------------------------------|------------------|------------------------|-----------------|
| 1 | Anugerah Perkhidmatan Cemerlang Universiti | Universiti       | 2006, 2010, 2013, 2016 | 4               |
| 2 | Sijil Perkhidmatan Cemerlang Universiti    | universiti       | 2006-2018              | 12              |
| 3 | Sijil cemerlang pengajaran                 | Universiti       | 2006-2018              | 12              |

|   | <b>ANUGERAH JINM</b>                                                       |             |            |                                |          |
|---|----------------------------------------------------------------------------|-------------|------------|--------------------------------|----------|
| 1 | BIOCHAR as new Green, Projek berimpak tinggi 2017                          | Fasilitator | 2017       | Sekolah Dato Abdul razak(SDAR) | national |
| 2 | biochar is new green : supercapacitor, projek berimpak tinggi 2018         | Fasilitator | 2019       | Sekolah Dato Abdul razak(SDAR) | national |
| 3 | STEM-Orang Asli , projek berimpak tinggi 2018                              | Fasilitator | 2018       | Islamic relief malaysia (IRM)  | national |
| 4 | GLOBAL I LEAD STEM                                                         | Fasilitator | 2017       | UPM- MRSM Kota Putra           | national |
| 5 | GISC-STEM 2018, Projek berimpak tinggi 2018                                | Fasilitator | 2018       | UPM- sri Ayesha                | national |
| 6 | Anugerah khas khidmat bakti bukan pelajar SDAR 2016                        | Fasilitator | 22/10/16   | Sekolah dato abdul razak       | National |
| 7 | Anugerah khas khidmat bakti bukan pelajar SDAR 2018                        | Fasilitator | 13/10/2018 | Sekolah dato abdul razak       | National |
| 8 | GISC-STEM 2019, Projek berimpak tinggi 2018 & anugerah Khas ( environment) | Fasilitator | 2019       | UPM- SM sains Faris Perta      | national |

## Recognitions

|   | <b>journal reviewer</b>                                                 | <b>category</b> | <b>year</b> |
|---|-------------------------------------------------------------------------|-----------------|-------------|
| 1 | International Conference on Environmental Forensics 2018 (iENFORCE2018) | non-cited       | 2018        |
| 2 | Journal of Cleaner Production                                           | cited           | 2018        |
| 3 | Modern Environmental Science and Engineering (ISSN 2333-2581)           | cited           | 2018        |
| 4 | waste and biomass valorization                                          | cited           | 2018        |
| 5 | International Journal of Hydrogen Energy                                | cited           | 2018        |
| 6 | Journal of Cleaner production                                           | cited           | 2018        |
| 7 | Journal of Chemical Engineering                                         | cited           | 2018        |
| 8 | Waste management                                                        | cited           | 2018        |

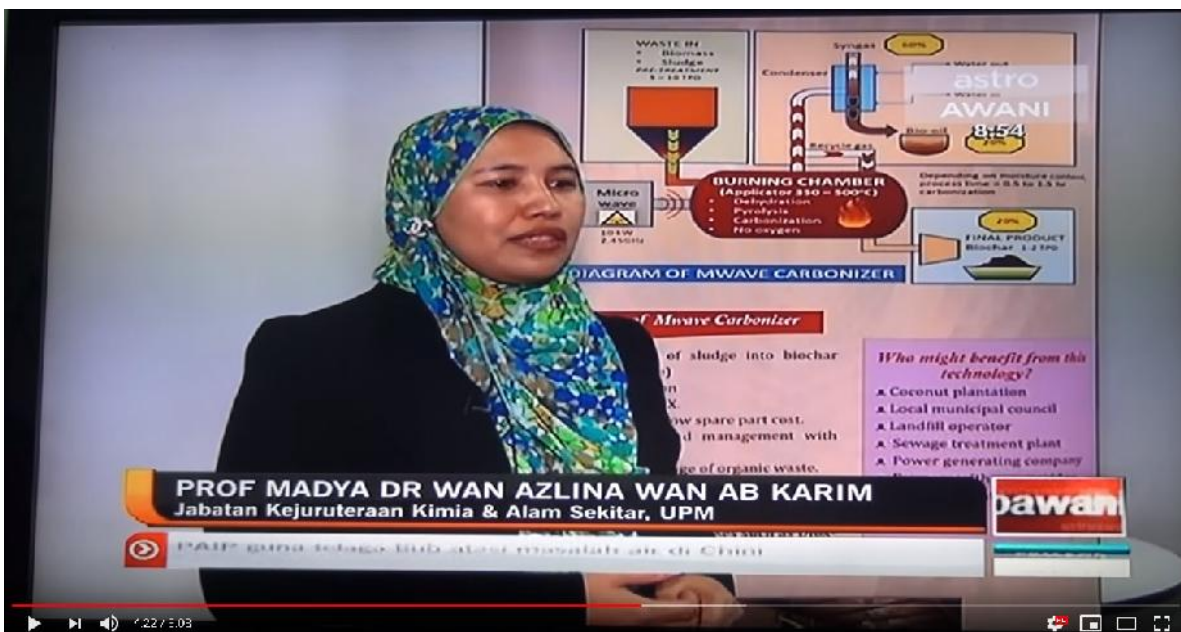
|   | <b>External assessor</b>                                      |      |   |
|---|---------------------------------------------------------------|------|---|
| 1 | External assessor for UITM ( assoc. prof.- Dr. Ahmad rafizan) | UITM | 1 |
| 2 | External assessor for UKM ( assoc. prof – Dr Shahbudin)       | UKM  | 1 |
| 3 | External assessor for UIA ( assoc. prof.-Dr Sarina Sulaiman   | UIA  | 1 |



ACKNOWLEDGMENTS IN MEDIA



Loreal fellowship for women in science (FWIS), Harian metro 2 october 2012



Kajian simulasi Biochar Microwave Carbonizer(BMC) , Astro awani, 13 april 2016





**Inovasi Hasil Arang Hijau, Harian Metro, 12 April 2017**

kans award coverage



**Iran TV for Knowledge and Notion in Science Award (KANS) for outstanding muslim scientist**

## **ACADEMIC REFEREES**

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