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Academic Qualification

Ph.D (Materials – Corrosion and Protection), 2016
The University of Manchester, UK.

Master in Engineering (Mechanical - Materials), 2008
Universiti Teknologi Malaysia, Skudai, Johor, Malaysia.

Degree (hons) in Mechanical Engineering, 2005
Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia.

Brief Profile

Juliawati Alias is currently a senior lecturer at Faculty of Mechanical Engineering, University Malaysia Pahang. She has vast interest in the field of material engineering especially in metallurgical analysis, material characterization and corrosion investigation. She is one of the researcher under Structural Materials and Degradation (SMD) focus group research in the faculty, with current focus research on light alloys (Aluminium and Magnesium alloys) corrosion performance and development of corrosion test lab (ASTM G28, ASTM G48, TM0284 and TM0177). She is registered engineer with Board of Engineers Malaysia (BEM), graduate members of Institute of Materials, Minerals and Mining (IOM3), UK, and certified in National Association of Corrosion Engineers (NACE) for general/basic corrosion.

Working Experiences / Appointment

Current	Senior Lecturer, Universiti Malaysia Pahang
2009 - 2015	Lecturer, Universiti Malaysia Pahang
2006 - 2008	Tutor, Universiti Malaysia Pahang
Jul 2006 – Oct 2006	Design Engineer, Asmech Teknologi (M) Sdn Bhd
Jun 2005 – Jun 2006	Process Engineer, MMI Precision Manufacturing Sdn
2004	Trainee, Ramunia Fabricators Sdn Bhd

Expert Area / skills

Expert field / areas : Materials Engineering, Corrosion, Metallurgy

Expert Skills : high resolution characterization (SEM, TEM, EBSD), Surface profile measurement (profilometer, AFM, SKPFM), Electrochemical measurement (Potentiodynamic polarization, EIS, OCP), AutoCAD expert, Expert in specimen preparation (metallography) for aluminium and magnesium alloys.

Research Interest

Material characterization, metallurgy, corrosion, microstructure, biomaterial

Research Project / Grant

1. Investigation of microstructure development and corrosion performance of friction stir welded light alloys, Project Leader, 2016 – RDU160394
2. Microstructure Evolution and Corrosion Performance of Deformed Light Alloys: Route to Develop High Formability and Better Performance Light Alloys, Project Leader, 2016 – RDU161114
3. Development of Test Method for Evaluation of Stress-Oriented Hydrogen Induced Cracking (SOHIC) and Soft Zone Cracking (SZC) Resistance in Metallic Alloys, Project Leader, Completed on 2014 – RDU120337
4. Development of New Filler Material in Controlling Corrosion of Weld Non-Ferrous Alloys, project member, Completed on 2012 – RDU100392
5. Development of TIG/MIG Welding Machine for Joining Light Alloys, project member, (Completed on 2012) – RDU100358
6. Developments of Aneurysm Rupture Prediction Method Using Fracture Mechanics Analysis, Project Leader (completed on 2010) – RDU090364
7. Development of Probabilistic Analysis for Cracked Structures Using Finite Element Method (completed on 2010) – RDU090362
8. Hybrid Electrical Vehicle Driveline Development (completed on 2008) - RDU070304

Professional Qualification / Membership / Affiliation / Experience

Graduate Engineer, Board of Engineer, Malaysia (BEM).
Graduate Member, Institute of Materials, Minerals and Mining (IOM3), UK
Certified in National Association of Corrosion Engineer (NACE) for general/basic corrosion

Teaching Experience

1. Academic Session of 2016/2017 (Current session)
BMM1553 Dynamics, 3 credit hours, 130 students
BHA1113 Engineering Materials, 3 credits hours, 8 students
BMM1811 Mechanical Laboratory I, 1 credit hour, 200 students
2. Academic Session of 2012/2013
BMM1523 Engineering Materials, 3 credits hours, 180 students
BMM1811 Mechanical Laboratory I, 1 credit hour, 150 students
BMM4924 Final Year Project 2, 4 credit hours, 6 Students
3. Academic Session of 2011/2012
BMM2521 Eng Mechanics II (Laboratory), 1 credit hour, 180 students
BMM1523 Engineering Materials, 3 credits hours, 180 students
BMM1811 Mechanical Laboratory I, 1 credit hour, 180 students
BMM3912 Final Year Project 1, 2 credit hours, 6 Students
4. Academic Session of 2010/2011
BMM3633 Industrial Engineering, 3 credit hours, 241 students
BMM1511 Eng Mechanics I (Laboratory), 1 credit hour, 189 students
BMM1523 Engineering Materials, 3 credits hours, 180 students
BMF4763 Plastic Injection Technology, 3 credits hours, 70 students
BMM4924 Final Year Project 2, 4 credit hours, 5 students
5. Academic Session of 2009/2010
BMM3633 Industrial Engineering, 3 credit hours, 240 Students
BMM3912 Final Year Project 1, 2 credit hours, 5 Students
BMM4999 Industrial Training, 9 credit hours, 5 students

BMM1523 Engineering Materials, 3 credit hours, 15 Students (during semester break)

BMM1523 Engineering Materials, 3 credit hours, 250 Students

6. Academic Session of 2008/2009

BMM3633 Industrial Engineering, 3 credit hours, 217 Students

BMM4999 Industrial Training, 9 credit hours, 4 students

BMM3912 Final Year Project 1, 2 credit hours, 7 Students

Post Graduate Supervision

No.	Academic Year	Name of Student	Title of Project
1	2017* (To be registered on Feb 2017)	Nurul Shuhada Binti Mohamed	Investigation of microstructure and corrosion performance of friction stir welded AZ31 Magnesium Alloys

Degree / Final Year Supervision

No.	Academic Year	Name of Student	Title of Project
1	2016-2017	Muhamad Al-Kausar	A study on filiform-like corrosion of magnesium alloy
2	2016-2017	Ainur Binti Mohamad	Metallurgical effect of welded aluminium alloy on corrosion performance
3	2016-2017	Nurul Asyikin	Role of Surface Condition on the corrosion of magnesium alloy
4	2016-2017	Najwa Binti Husin	Corrosivity of Steel and Aluminium in Pekan Domestic water
5	2011 - 2012	Mohamad Zaki Hamsah	Analysis on the Corrosion Behavior of High Strength Steel at High Temperature
6	2011 - 2012	Mohd Syahidan Mohamed Nawi	Effect of Aging on Corrosion Behaviour of Aluminium alloy 6061
7	2011 - 2012	Mong Bee Tong	Outdoor – Indoor Corrosion of High Strength Steel Alloys in UMP Pekan
8	2011 - 2012	Muhammad Faez Helmie Mohd Suhaimi	Effect of hydrogen adsorption to the high strength steels in soil aqueous environment
9	2011 - 2012	Muhammad Ibrahim Md Nujid	Effect of Welding Parameters on Corrosion Characteristics of Welded Carbon Steel
10	2011 - 2012	Muhammad Qaidir Abdillah	Effect of Welding Parameters on Mechanical Properties of Welded Carbon Steel
11	2009 - 2010	Mohd Asyraf Bin Che Azmi	Electrochemical study of SS316 in Simulated Body Environment
12	2009 - 2010	Nik Mohd Nazairen Bin Nik Cob	Electrochemical study of SS304 in Simulated Body Environment
13	2009 - 2010	Mohd Azizul Bin	Corrosion Inhibition of Aluminium Alloy 6061 in

		Chamingan	Acidic Media By Honey
14	2009 - 2010	Mohd Zulkarnain Bin Zulkifli	Corrosion Inhibition of Aluminium Alloy 6061 in Alkaline Media By Milk
15	2009 - 2010	Emir Izwandy Bin Dzulkafli	Effect of Aging on Machinability of 6061 Aluminium-Magnesium-Silicon Alloy
16	2008 – 2009	Asmerol Bin Alias	Corrosion Protection of Steel Structure in Automotive Application
17	2008 – 2009	Mohd Saiful Nizam	Cathodic Protection for Underground Steel Pipelines Using Sacrificial Anode
18	2008 – 2009	Mohd Fahies Bin Ismail	A Study of Atmospheric Corrosion in Seawater, indoor and outdoor
19	2008 – 2009	Nurul Izham Mohd Yusof	Corrosion Behavior of SS304; Effect of temperature, pH variation and chloride concentration
20	2008 – 2009	Nurul Azwan Adnan	Materials Selection for Car Bumper
21	2008 – 2009	Mohamad Fauzi Bin Rosli	Materials Selection for Cutting Tools
22	2008 – 2009	Mohammad Najib Bin Mornie	Design of Tribometer for Joint Simulator in Biomedical Application

List of Publications

1. **A. Juliawati**, X. Zhou, G. E Thompson, "Microstructure Evolution and Texture Development of Hot Form-Quench AZ31 Twin Roll Cast (TRC) Magnesium Alloy" 3rd Advanced Materials Conference, Nov 2016, Langkawi, Malaysia.
2. **A. Juliawati**, X. Zhou, G. E Thompson, "The Influence of Hot Forming on the Microstructure and Corrosion Behaviour of Magnesium Alloy" EuroCorr 2014, Sept 2014, Pisa, Italy.
3. **A. Juliawati**, Nur Azhani Abdul Razak, L H Shah, "Effect of Pulsed Current Tungsten Inert Gas Welding to the Corrosion Behavior of 6061 Aluminium Alloy in Seawater" International Conference on Mechanical Engineering Research (ICMER 2011), December 5 – 7, Kuantan, Pahang, Malaysia, 2011.
4. Nur Azhani Abdul Razak, **A. Juliawati**, L H Shah, "Effect of Heat Treatment on The Microstructure of Welded Al6061 Aluminium Alloy" International Conference on Mechanical Engineering Research (ICMER 2011), December 5 – 7, Kuantan, Pahang, Malaysia, 2011.
5. **A. Juliawati**, Nur Azhani Abdul Razak, A. S. Sulaiman, "Effect of Hydrogen Charging to the Microstructure and Mechanical Properties of High Strength Steel Pipelines" NACE Corrosion Shanghai 2012 Conference.
6. M. Mazwan Mahat, **A. Juliawati**, M. R. M. Akramin "Numerical Modelling of Aneurysm Growth and Rupture" 3rd Engineering Conference on Advancement in Mechanical and Manufacturing for Sustainable Environment (ENCON 2010), April 14-16, 2010, Kuching, Sarawak, Malaysia, 2010.
7. M. Mazwan Mahat, **A. Juliawati**, M. R. M. Akramin "Automatic Solar Tracking System for Photovoltaic System Application" Regional Conference on Mechanical and Aerospace Technology (RcMeAe), February 9 -10, Bali, Indonesia, 2010.
8. M. Mazwan Mahat, **A. Juliawati**, IshkrizatTaib "Biomechanical Modeling of Aneurysm Growth and Rupture using Fluid Structure Interaction" 4th International Conference on Advanced Computational Engineering and Experimenting, (ACE-X 2010) , July 8-9, Paris, France, 2010
9. A. H. Ahmad, Z. Leman, M. A. Azmir, K. F. Muhamad, W.S.W. Harun, **A. Juliawati**, A.B.S. Alias "Optimization of Warpage Defect in Injection Moulding Process using ABS Material" Asia Modelling Symposium, 25-26 May, Bandung, 2009

10. M. R. M. Akramin, M. Mazwan Mahat, A. Hadi, **A. Juliawati** "Uncertainty Analysis of Reliability Prediction For Cracked Structure, International Conference on Applications and Design in Mechanical Engineering (ICADME2009), 11-13 October, UNiMAP, 2009.
11. M.F. Hassan, M. Mailah, M.A. Salim and **A. Juliawati**, "Vibration Suppression of a Handheld Tool Using Active Force Control with Crude Approximation Method" International Conference on Applications and Design in Mechanical Engineering (ICADME2009), 11-13 October, UNiMAP, 2009

List of Research / Project

1. Development of Aneurysm Rupture Prediction Method Using Fracture Mechanics Analysis
 - Using fracture mechanic analysis to predict the growth and rupture of aneurysm.
2. Development of New Filler Material in Controlling Corrosion of Weld Non-Ferrous Alloys
 - Develop a new filler for welding non-ferrous alloys
 - Analysis of filler materials mechanical properties and corrosion characteristics if weld non-ferrous (esp magnesium) alloys in different environment (acidic, alkaline, atmospheric, high temperature, etc.)
3. Development of Test Method for Evaluation of Stress-Oriented Hydrogen Induced Cracking (SOHIC) and Soft Zone Cracking (SZC) Resistance in Metallic Alloys.
 - Develop a test method for evaluation of SOHIC and SZC resistance to metallic alloys for application of pipelines and pressure vessels in oil and gas.
 - Investigate hydrogen blister and crack propagation mechanism and the possible causes of hydrogen interaction to the metal lattice.
4. Influence of Hot forming-queching (HFQ) on the Microstructure and Corrosion Performance of Magnesium Alloys.
 - High resolution microstructure characterization of Magnesium alloy after hot form-quench using optical, field emission scanning electron microscopy (FESEM), transmission electron microscopy (TEM).
 - Microstructure analysis including dislocation, deformation mechanism, crystallography, twinning and grain boundaries analysis.
 - Texture characterization using electron backscatter diffraction (EBSD) method
 - Hydrogen evolution measurement and electrochemical measurement including polarization, OCP and Electrochemical Impedance Spectroscopy (EIS)
 - Surface potential and profile analysis using scanning kelvin probe force microscopy (SKPFM)
 - Electrochemical scanning measurement using scanning vibrating electrode technique (SVET)