



KU MARSILLA BINTI KU ISHAK LECTURER

SCHOOL OF MATERIALS & MINERAL RESOURCES
ENGINEERING, ENGINEERING CAMPUS,
UNIVERSITI SAINS MALAYSIA
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EDUCATION

University of Waikato(UoW) New Zealand (2015)

PhD (Polymeric Materials and Processing)

Universiti Sains Malaysia(USM) (2011)

MSc (Materials Engineering)

Universiti Malaysia Pahang(UMP) (2006)

BSc Chemical Engineering (Hons.)



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato



AREA OF SPECIALIZATION

Polymeric Materials and Processing
Biopolymer
Biodegradable Materials
Polymer Blending
Smart Polymer



RECOGNITION

PROFESSIONAL TECHNOLOGIST Malaysian Board of Technologies (MBOT)

MEMBER of Board of Engineers (BEM)

EDITORIAL BOARD in Journal of Chemical Engineering and Industrial Technology

EDITORIAL BOARD in Buletin Enjinier, School of Materials & Mineral Resources Engineering

EDITORIAL BOARD in Research & Reviews: Journal of Material Sciences

EXPERIENCES AND ACHIEVEMENTS

LECTURER of School of Materials & Mineral Resources Engineering-Present

UNIVERSITY COMMITTEE of CurioUSMind, an online Research & Innovation website 2019

SCHOOL COMMITTEE of Promotion Team 2019

SCHOOL DEPUTY CHAIRMAN of Multimedia & Publicity of Sport and Recreation Club 2019

SCHOOL COMMITTEE of Promotion Team of Polymer Engineering Program 2019

SCHOOL COMMITTEE of KPI Team 2019

COURSE COORDINATOR of 2-Day-In House Course on Polymer Technology: Characterization, Design & Process Validation 2018

SCHOOL COMMITTEE of Professor Talk 2018

ADVISOR of Polymer Night 2018

UNIVERSITY COMMITTEE of Breakthrough Journal & Thesis Speed Writing Methods 2018

UNIVERSITY COMMITTEE of Lean Management Forum: What makes you successful! 2017



INVITED SPEAKER at PolyCHAR 2017 World Forum on Advanced Materials

JUDGE for Poster Competition for Industrial Training 2017

SCHOOL COMMITTEE of Engineering Accreditation, 2017-present

SCHOOL ALUMNI COMMITTEE of Universiti Sains Malaysia, 2017-present

SCHOOL PROMOTION COMMITTEE of Universiti Sains Malaysia, 2017-present

SECRETARY of National Symposium Polymeric Materials 2016

SESSION CHAIR for 2013 2nd International Conference on Chemical and Process Engineering (ICCPE 2013)

SECRETARY of WAIKATO UNIVERSITY ASSOCIATION (WUMA) 2011/2012

SECRETARIAT COMMITTEE of 1st Waikato Malaysian Postgraduate Colloquium (2012)

TUTOR OF USM FELLOWSHIP(2007-2009),Subject: Material Engineering and Strength of Material

PART-TIME LECTURER OF UITM PERMATANG PAUH(2008),Faculty: Chemical Engineering, Subject: Thermodynamic

SECRETARIAT COMMITTEE of National Symposium Polymer Material Conference organized by USM(2008)

SECRETARIAT COMMITTEE OF FUTSAL TOURNAMENT USM(2008)



AWARDS

Best Poster Presentation – Regional Conference on Materials and ASEAN Microscopy Conference 2017, co-author

Best Paper Award - 2nd International Conference on Chemical and Process Engineering (ICCPE 2013)

Overall Winner of Thesis in Three, University of Waikato (2012)

People's Choice Award of Thesis in Three, University of Waikato (2012)



RESEARCH GRANTS

- Development of Protein Based Thermoplastics from Fish Waste.**
Short Term Grant. RM 35 388.40. 15 Jun 2016-14 Jun 2018
- Molecular Arrangement and Structure conformation of Fish Protein based Thermoplastics during Thermal Transition.**
Fundamental Research Grant Scheme. RM 70 000. 1 Aug 2016-31 July 2019.
- Protein Recovery from Stick Samples using Magnetized Cellulose Nanocrystals.**
Research University Grant. RM 90 200. 1 May 2018 – 28 April 2020
- Mechanism of chondrogenic differentiation towards articular cartilage in poly(ethylene glycol)/cellulose nanocrystals/alginate-based 3D bioprinted construct.** (Co-Researcher)
Fundamental Research Grant Scheme. RM126,000.00, 01/01/2019-31/12/2021
- New Denture Adhesive Filled Starches Containing Aloe Vera: Mechanical, Toxicity and Anti-Microbial Properties.** (Co-Researcher).
Bridging Grant. RM25,000.00, 01/10/2018-30/09/2019

PUBLICATIONS

JOURNAL

- Ishak, N.S, K.I Ku Marsilla, Y.Bustami and H.Rokiah (2018). Evaluation of Cellulose Nanocrystals (CNCs) as Protein Adsorbent in Stick Water. Materials Today: Proceedings (RAMM)
- Siti Amirah. A & K.I. Ku Marsilla (2017). Effect of Glycerol Composition on Protein Based Thermoplastic from Fish Waste. Journal of Physics: Conference Series (JPCS)
- Marsilla, K. K., & Verbeek, C. J. R. (2016). Crystallization of itaconic anhydride grafted



poly(lactic acid) during annealing. *Journal of Applied Polymer Science*, 134, 44614.

4. Marsilla, K. K., & Verbeek, C. J. R. (2015). Modification of poly (lactic acid) using itaconic anhydride by reactive extrusion. *European Polymer Journal*, 67, 213-223.
5. Ku-Marsilla, K. I., & Verbeek, C. J. R. (2015). Compatibilization of Protein Thermoplastics and Polybutylene Succinate Blends. *Macromolecular Materials and Engineering*, 300(2), 161-171.
6. Marsilla, K. I., & Verbeek, C. J. R. (2013). Properties of Bloodmeal/Linear Low-density Polyethylene Blends Compatibilized with Maleic Anhydride Grafted Polyethylene. *Journal of Applied Polymer Science*, 130(3), 1890-1897.
7. Ku Marsilla, K. I., & Verbeek, C. J. (2014). Mechanical Properties of Thermoplastic Protein From Bloodmeal and Polyester Blends. *Macromolecular Materials and Engineering*, 299(7), 885-895.
8. Marsilla, K. K., & Verbeek, C. J. R. (2013). Properties of Blends of Novatein Thermoplastic Protein from Bloodmeal and Polybutylene Succinate Using Two Compatibilizers. *International Journal of Chemical Engineering and Applications*, 4(3), 106.
9. Ishak, K. M. K., Ahmad, Z., & Akil, H. M. (2010). Synthesis and characterization of cis-5-norbornene-2, 3-dicarboxylic anhydride-chitosan. *e-Polymers*, 10(1), 695-705.

BOOK CHAPTER

1. **Biodegradable Plastic from Blood Meal (2013)**

Author/s: K.I. Ku Marsilla, C.J.R. Verbeek

Category: Chapter in A Book: (Diversity of Research for a Sustainable Challenging World: A compilation of research by Malaysian postgraduates in New Zealand)

Publisher: Chair of Malay Studies, Victoria University of Wellington

CONFERENCES

1. **Evaluation of Cellulose Nanocrystals (CNCs) as Protein Adsorbent in Stick Water**
6th International Conference on Recent Advances in Materials, Minerals & Environment (RAMM) 2018, Pulau Pinang
2. **Evaluation of Hydroxyapatite from Fish Bone as Potential Protein Adsorber from Waste Water and as a Filler in Bioplastic**
Bioplastic Global Joint Satellite Symposium ,USM, Pulau Pinang 2018
3. **Evaluation of Cellulose Nanocrystals (CNCs) as Protein Adsorbent in stick water**
Recent Advances in Materials, Minerals & Environment (RAMM) 2018,Bayview Penang
4. **Fish Waste as Starting Material for Bioplastics (2017)**
PolyChar 25,PWTC, Kuala Lumpur(International)
5. **Thermoplastics Processing of Protein Based Plastics from Fish Waste (2017)**
An International Innovation, Invention & Design Competition & Conference (ICON) 2017,Terengganu(International)
6. **Utilization of Fish Waste as Starting Material for Protein Based Thermoplastics (2017)**
Emerging Polymer Technology Summit,RMIT Australia(International)
7. **Effect of Glycerol Composition on Protein Based Thermoplastic from Fish Waste**
Regional Conference on Materials and ASEAN Microscopy Conference 2017
8. **Properties of blends of Novatein thermoplastic protein from bloodmeal and polybutylene succinate Using Two compatibilizers (2013)**
International Conference on Chemical Engineering and Process Engineering (ICCPE, 2013)
9. **Preparation and Characterization of Itaconic Anhydride Functionalized Polylactic Acid using Reactive Extrusion (2013)**

NZ Conference of Chemical and Materials Engineering

10. **Polymer Blends from Blood Based Plastic (2012)**
International Malaysia Research Conference in Auckland 2012 & Sub-Conference: Saudi-Malaysia Research Studies Conference
11. **Blends of Linear-low-density Polyethylene and Thermoplastic Bloodmeal using Maleic Anhydride Grafted Polyethylene as Compatibilizer (2012)**
Quality of Life through Chemical Engineering (CHEMECA 2012)
12. **Biodegradable Plastic from Blood Meal (2012)**
1st Waikato Malaysian Postgraduate Colloquium
13. **Development of Blood Meal Protein Thermoplastic (2011)**
SCENZ-IChemE annual conference in New Zealand
14. **Determination of degree of deacetylation and characteristic of modified chitosan and low molecular weight chitosan using FTIR (2009)**
4TH International Conference on Recent Advances in Materials, Minerals & Environment AND 2ND Asian Symposium on Materials & Processing
15. **Synthesis and characterization of cis-5-norbornene-2,3-dicarboxylic anhydride-chitosan (2008)**
The 4th International Conference on X-Rays and related Techniques in Research and Industries 2008 (ICXRI 2008)
16. **Modification of chitosan powder using 1-adamantane carbonyl chloride monomer (2008)**
The 2nd penang International Conference For Young Chemist (ICYC 2008)
17. **Thermal properties of and chemical reactivity of chitosan and modified chitosan (2008)**
The 2nd International Conference on Science and Technology: Applications in Industry and Education (ICSTIE 2008)
18. **Characterization and physical properties of chemically modified chitosan (2008)**
VIIITH National Symposium on Polymeric Materials 2008(NSPM'08)

SUPERVISION



No	NAME	DEGREE	MAIN TASK	YEAR
1	Nur Syahirah Binti Ishak	MSc	Main Supervisor	2018
2	Siti Amirah Binti Alias	MSc	Main Supervisor	2018
3	Siti Nur Asiah Mahamood	MSc	Main Supervisor	2018
4	Nur Fazreen Binti Alias	PhD	Co-supervisor	2017
5	Muhamad Ridhwan Hafiz Rosdi	PhD	Co-supervisor	2017