

**Nur Zalikha Binti Khalil, Ph.D**E-mail: [nurzalikhak@ump.edu.my](mailto:nurzalikhak@ump.edu.my)**ACADEMIC BACKGROUND**

- **Ph.D** (2016): Doctor of Engineering (Materials Science), Ritsumeikan University, Kyoto, JAPAN. (*Doctoral Thesis: "Study on Improvement of Mechanical Properties in Structural Materials by Particle Size Control Process"*)
- **M.Eng.** (2013): Master of Engineering (Manufacturing Process), Kinki University, Osaka, JAPAN.
- **B.Eng.** (2011): Bachelor of Engineering, Kinki University, Osaka, JAPAN.

**WORKING EXPERIENCES/APPOINTMENT**

- Jan 2017-to date      Senior Lecturer      Faculty of Mechanical Engineering, Universiti Malaysia Pahang

**RESEARCH INTERESTS/ EXPERTISE**

- Processing-Microstructure-Mechanical Properties Correlation.
- Powder Metallurgy.
- Al-alloys/composites, Structural Ceramics-Silicon Carbide, Powder Sintering, Particle Size Analysis, Severe Plastic Deformation (SPD).
- Non-Destructive Evaluation (Ultrasonic Testing, Acoustic Emission).
- Surface Modification, Shot Blasting, Laser Cladding.
- Adhesive Joining
- **Characterization of Materials:** Microstructural Evaluation (SEM, OM, EBSD, EDX), X-Ray Diffraction, Thermal Analysis (DSC), Laser Particle Size Analyser, Mechanical Properties (Tensile, Flexural, Micro-Hardness etc.), Surface Roughness Testing.
- **Materials` Processing:** Atomization, Mechanical Milling/Alloying, Spark Plasma Sintering.

**PUBLICATONS/RECOGNITION****Refereed International/National Journals:**

1. T.Kubohori, **N.Z.Khalil**, Y. Tojo, and S. Takahashi; *Effect of the Blasting Angle on Blast Processing of a Cylindrical Surface (in Japanese)*; **Journal of High Temperature Society**, Vol.37, No.6, 2011, pp.316-320.
2. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Effect of Particle Size Distribution on SiC Ceramic Sinterability*; **Journal of Materials Transactions**, Vol.56, No.11, 2015, pp.1827-1833.
3. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Application of Al-Si Semi-Solid Reaction for Fabricating Harmonic Structured Al Based Alloy*; **Journal of Materials Transactions**, Vol.57, No.9, 2016, pp.1433-1439.
4. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Effect of Particle Size Distribution on SiC Ceramic Sinterability (in Japanese)*; **Journal of Japan Society Powder Metallurgy**, Vol.64, No.6, 2017, pp. 281-287.
5. N.A.C. Lah, M. Samykano, M. R. Johan, N. S. Othman, M. M. Saari, L. B. Fen, **N.Z.Khalil**; *Plasmonic Behaviour of Phenylendiamine Functionalised Silver Nanoparticles*; **Materials Research Express**, Vol.4, No. 9, 2017.

**Refereed Conference Proceedings:**

1. T.Kubohori, **N.Z.Khalil**, Y.Tojo and J. Morimoto; *Influence of Blasting for Colliding Pressure and Peening Effect*; The 8<sup>th</sup> International Symposium on Applied Plasma Science (ISAPS`11), September 26<sup>th</sup> -30<sup>th</sup> 2011, Hakone, Japan.

2. **N.Z.Khalil**, T.Kubohori and Y.Tojo; *Evaluation of Thermal Sprayed Coating Using Ultrasonic Inspection*; The 19<sup>th</sup> Annual Meeting of IAPS, The 5<sup>th</sup> International Workshop on Plasma Application & Hybrid Functionally Materials (IAPS`12), March 9<sup>th</sup> -12<sup>th</sup> 2012, Taipei, Taiwan.
3. T.Kubohori, **N.Z.Khalil**, Y.Tojo and S.Takahashi; *Effect of the Blasting Angle on Blast Processing of a Cylindrical Surface*; The 19<sup>th</sup> Annual Meeting of IAPS, The 5<sup>th</sup> International Workshop on Plasma Application & Hybrid Functionally Materials (IAPS`12), March 9<sup>th</sup> -12<sup>th</sup> 2012, Taipei, Taiwan.
4. K.I. Yaakob, M. Ishak, M, S.R.A. Idris, A.M. Halil, **N.Z. Khalil** ; *Hardness variation of welded boron steel using continuous wave (CW) and pulse wave (PW) mode of fiber laser* ; **IOP Conference Series: Materials Science and Engineering** , 238 (2017), 012007 .
5. M.S. I.N. Kamariah, W.S.W. Harun, **N. Z. Khalil**, F. Ahmad, M. H. Ismail, S. Sharif ; *Effect of heat treatment on mechanical properties and microstructure of selective laser melting 316L stainless steel* ; **IOP Conference Series: Materials Science and Engineering** , 257, (2017), 012021.
6. N.A. N. Dandang, W.S.W. Harun , **N. Z. Khalil**, A.H. Ahmad , F.R. M. Romlay, N. A. Johari ; *Paraffin wax removal from metal injection moulded CoCrMo alloy compact by solvent debinding process*; **IOP Conference Series: Materials Science and Engineering** , 257, (2017), 012020.
7. A.R. Abdullah , N.A. N. Dandang **N. Z. Khalil**, W.S.W. Harun ; *Effect of sintering temperature on physical properties & hardness of CoCrMo alloys fabricated by metal injection moulding process*; **IOP Conference Series: Materials Science and Engineering** , 257, (2017), 012010.
8. M.F.F.A. Hamidi, W.S.W. Harun , **N. Z. Khalil**, S. A. C. Ghani , M. Z. Azir ; *Study of solvent debinding parameters for metal injection moulded 316L stainless steel*; **IOP Conference Series: Materials Science and Engineering** , 257, (2017), 012035.
9. N.A. N. Dandang , W.S.W. Harun , **N. Z. Khalil**, M.H. Ismail, R. Ibrahim; *Physical properties and microstructure study of 316L SS fabricated by metal injection moulding process*; **AIP Conference Proceedings** , 1901, 100016 (2017).

## **CONFERENCE PRESENTATIONS/RECOGNIZATIONS**

### ***Oral Presentations***

1. **N.Z.Khalil**, T.Kubohori and Y.Tojo; *Evaluation of Thermal Sprayed Coating Using Ultrasonic Inspection*; The 19<sup>th</sup> Annual Meeting of IAPS, The 5<sup>th</sup> International Workshop on Plasma Application & Hybrid Functionally Materials (IAPS`12), March 9<sup>th</sup> -12<sup>th</sup> 2012, Taipei, Taiwan.
2. **N.Z.Khalil** and K.Ameyama; *Microstructure and Mechanical Properties of SiC Composite Prepared by MM/SPS Process*; The 112<sup>th</sup> Annual Meeting of Japan Society of Powder and Powder Metallurgy; November 27<sup>th</sup> -29<sup>th</sup> 2013, Nagoya, Japan.
3. **N.Z.Khalil**, S.K.Vajpai, and K.Ameyama; *Microstructure and Mechanical Properties of SiC Compacts Produced by Mechanical Milling and Spark Plasma Sintering*; The 9<sup>th</sup> International Materials Technology Conference and Exhibition (IMTCE2014); May 13<sup>th</sup> -16<sup>th</sup> 2014, Kuala Lumpur, Malaysia.
4. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Relationship between Grain Size Coefficient of Variation on Mechanical Properties of SiC Compacts*; The 169<sup>th</sup> ISIJ Meeting- ISIJ and JIM Joint Session; March 18<sup>th</sup> -20<sup>th</sup> 2015, Tokyo, Japan.
5. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Fabrication of Al based Composites via Harmonic Structure Design*; The 3<sup>rd</sup> International Conference on Powder Metallurgy in Asia; November 8<sup>th</sup> -10<sup>th</sup> 2015, Kyoto, Japan.

### ***Poster Presentations***

6. **N.Z.Khalil**, Y.Tojo, J.Morimoto and T.Kubohori; *Study on Surface Modification on Engineering Materials*; The 6<sup>th</sup> International Education Symposium JUCTe, November 23<sup>rd</sup> 2010, Kuala Lumpur, Malaysia. (*Awarded as Best Poster*)

7. **N.Z.Khalil** and K.Ameyama; *Microstructure and Mechanical Properties of SiC Composite Prepared by MM/SPS Process*; Annual Presentation of Doctoral Research for Ritsumeikan University, March 13<sup>th</sup> 2014, Kusatsu, Japan. (Awarded as Best Poster)
8. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Effect of Particle Size Distribution and Particle Morphology on Sinterability of SiC Ceramic*; The 3<sup>rd</sup> International Symposium on Functionalization and Applications of Soft/Hard Materials, November 6<sup>th</sup>–9<sup>th</sup> 2014, Kusatsu, Japan.
9. **N.Z.Khalil**, S.K.Vajpai, M.Ota and K.Ameyama; *Effect of Particle Size Distribution and Particle Morphology on Sinterability of SiC Ceramic*; The 8<sup>th</sup> German-Japanese (OZ-15) | 8<sup>th</sup> International Symposium on Nanostructures | The 4<sup>th</sup> International Symposium on Functionalization and Applications of Soft/Hard Materials, March 1<sup>st</sup> –4<sup>th</sup> 2014, Kyoto, Japan.

## **STUDENT SUPERVISION/THESIS EXAMINER**

### **Postgraduate Supervision (On-Going)**

1. Nur Aidah Nabihah binti Dandang | Mechanical and Physical Properties Study of Biocompatible 316L Stainless Steel Fabricated by Metal Injection Moulding Process | Master of Science | **Co-Supervisor**

### **Undergraduate Supervision (On-Going)**

2. Ahmad Farid bin Ghazali | The Effect of Alumina Nanoparticle Reinforcement on the Adhesion Properties of Adhesively bonded Al alloy with Acrylic
3. Mohamed Feisal bin Johanne | The Effect of Alumina Nanoparticle Reinforcement on the Adhesion Properties of Adhesively bonded Al alloy with Epoxy
4. Muhammad Firdaus bin Kamarrudin | Effect of Surface Roughness to the Adhesion Properties of Adhesively Bonded Aluminum Alloy

### **Undergraduate Supervision (Graduated)**

5. Ahmad Damanhuri bin Mohamad Yussof | Design and Fabrication of Jig for Adhesive Joint Tensile Test

### **Thesis Examiner**

1. Nurkhaleeda Binti Romli | UMP | Quasi Static Behaviour of Fibre Metal Laminate For Automotive Application | Master | **Thesis Internal Examiner**

## **RESEARCH PROJECTS/ GRANTS**

1. RDU1703309 UMP Research Grant Scheme | Effect of Nano reinforced structural adhesive for joining Aluminum alloy on Mechanical Properties | Sept 2017 – Sept 2019 | RM 25,500 | **Principal Researcher**
2. RDU170389 UMP Research Grant Scheme | Investigation of Fillers on Welding Properties between Aluminum Alloy and Magnesium Alloy Weld by Metal Inert Gas (MIG) Welding | | May 2017-May 2019 | RM 23,000 | **Co-Researcher**
3. RDU171115 UMP Research Grant Scheme | Study on the Powder Sinterability for Structural Application Statistical Analysis | Feb 2017-Aug 2018 | RM 5,500 | **Principal Researcher**

## **TEACHING EXPERIENCES**

	<b><u>Subject</u></b>	<b><u>Role</u></b>	<b><u>Institution</u></b>	<b><u>Year</u></b>
1.	Mechanical Drawing (Degree)	Teaching Assistant	Department of Mechanical Engineering Kinki University, Osaka, Japan	2012
2.	Mechanical Laboratory (Diploma)	Teaching Assistant	Japanese Associate Degree Program UNISEL, Selangor, Malaysia	2012

**2018**

**NUR ZALIKHA BINTI KHALIL**

3.	Japanese Language for Beginner & Intermediate (Postgraduate)	Teaching Assistant	Department of Mechanical Engineering Ritsumeikan Univeristy, Shiga, Japan	2014/5
4.	Engineering Materials (Diploma and Degree)	Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Malaysia	2017
5.	Solid Mechanics (Diploma)	Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Malaysia	2017
6.	Engineering Mechanics Laboratory (Degree)	Lecturer	Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Malaysia	2017

### **AWARDS/ACHIEVEMENTS**

1. Awarded scholarship from Yayasan Pelajaran Mara (YPM) to pursue Bachelor Degree in Kinki Universty, Osaka, Japan (April 2009- March 2011)
2. Awarded SLAB Fellowship from UMP and Ministry of Education to pursue Master Degree and PhD in Mechanical Engineering (April 2011 – Sept 2016)
3. First Runner Up for 3 Minutes Thesis Competition at Ritsumeikan University, Shiga, JAPAN (2016)