

## CURRICULUM VITAE



**Dr. Nur Ismarrubie Zahari**  
 Department of Mechanical and Manufacturing  
 Engineering, Universiti Putra Malaysia  
 43400 UPM, Serdang MALAYSIA  
 Tel : 03-8946 6330  
 Fax: 03-8656 7122  
 E-mail : [rubie@eng.upm.edu.my](mailto:rubie@eng.upm.edu.my)



### Academic Qualification:

- Ph.D., Yamagata University, Japan (Dissertation: A Microstructural Study of Fatigue Damage Mechanisms in Titanium)
- M.Eng. and B.Eng (Mechanical System Engineering), Yamagata University, Japan

### Professional Qualification/ Membership/ Affiliation:

- Member, American Society of Mechanical Engineering (ASME), since 2011
- Graduate Member, Board of Engineers Malaysia (BEM), since 2010
- Past Member, Ceramics Society of Japan (CerSJ), Japan since 2006
- Past Member, Electron Microscopy Society of Malaysia (EMSM)
- Past Member, Japan Society of Mechanical Engineering (JSME)

### Appointments:

July 2010 to date	Senior Lecturer, Mechanical and Manufacturing Engineering Department, Faculty of Engineering, UPM
May 2005-Jun 2010	Lecturer, Mechanical and Manufacturing Engineering Department, Faculty of Engineering, UPM
July 2006-March 2008	Postdoctoral Fellow, Nagoya Institute of Technology (NIT), Japan
July 2006-March 2007	Project assistant professor under The Japan 21 <sup>st</sup> Century Centre of Excellent (COE) "World Ceramics Center for Environmental Harmony"
May 2002- March 2005	Tutor, Mechanical and Manufacturing Engineering Department, Faculty of Engineering, UPM
November 2000-April 2002	Lecturer, Department of Mechanical Engineering, College of Engineering, UNITEN

### Areas of Interest:

Biomechatronics, Titanium and Its Alloy, Fatigue Damage, Advanced Materials, Microstructural Analysis, Ceramics, Microwave and Millimeter Dielectrics

### Research Topics ;

Year	Topic/ Sponsor	Amount (RM)
2011-2013	<i>Human-Robot Interaction (HRI) Algorithm in Borot-Based Intercession of Children with Austism Spectrum Disorder (ASD)</i> , FRGS, Co-researcher	RM 198 400

2009-2010	<i>Microstructure Effect of Fatigue Damage Mechanism on Polycrystalline Materials</i> , RUGS UPM, Main researcher	RM 30 000
2006-2007	<i>Research and Development in Metamaterials</i> (Collaboration with Japan Fine Ceramics Centre (JFCC) Prof. Ohsato Hitoshi, Prof. Kenichi Kakimoto, Dr. Kagomiya Isao) Nagoya Institute of Technology, Co-researcher	75 000,000 yen (RM225 000)
2001	<i>Study of Mechanical Properties and Development of A Control System for Property Measurement</i> , Young Lecturer Scheme UNITEN, Co-researcher	RM 5 000

### Student Supervision

- 3 MS projects on going – 2 completed, 1 on-going
- 8 BE projects (UPM) – 5 completed, 3 on-going
- 3 BE projects (UNITEN) – all completed

### Publications:

- Journals: 15 papers
- Book Chapters: 4 papers
- Conference/ proceedings more than 20.

### Journals

1. Z.N. Ismarrubie, H. Yussof, M. Sugano: 'Mechanism of Fatigue Damage in  $\alpha$  Titanium', *Advanced Science Letter*, (2012) Accepted. (Impact Factor: 1.253).
2. Mehryari Lima, Reza, Z.N. Ismarrubie, E.S. Zainudin, S.H. Tang: 'Effect of Length on Crashworthiness Parameter and Failure Modes of Plain Steel and Hybrid Tube made by Steel and GFRP under Low Velocity Impact', *International Journal of Crashworthiness*. 17(3), (2012), pp. 319-325. (Impact Factor: 0.621)
3. Mehryari Lima, Reza., Z.N. Ismarrubie, E.S. Zainudin, S.H. Tang: 'Axial Behavior of Metallic Tube Wrapped by Composite and Foam-Filled Structures: A Synopsis', *Advances in Mechanical Engineering*, (2012), Accepted.
4. Mehryari Lima, Reza, Z.N. Ismarrubie, E.S. Zainudin, S.H. Tang: 'Energy Absorption Capability of Hybrid Tube Made by Mild Steel and GFRP under Quasi-Static Loading', *Journal of Advanced Material Research*. 383-390, (2012), pp. 2741-2746.
5. Siti Nur Zafirah M. Zain, Z.N. Ismarrubie, E.S. Zainudin: 'The Effect of Aging Temperature on Mechanical Properties of Banana Pseudostem Fiber Reinforced Polymer Composite', *Key Engineering Materials*, 471-472, (2011), pp. 444-448.
6. J. Sahari, S.M. Sapuan, Z.N. Ismarrubie, M.Z.A. Rahman: 'Comparative Study of Physical Properties Based on Different Parts Reinforced Unsaturated Polyester Composites', *Key Engineering Materials*, 471-472, (2011), pp. 455-460.
7. J. Sahari, S.M. Sapuan, Z.N. Ismarrubie, M.Z.A. Rahman: 'Investigation on Bending Strength and Stiffness of Sugar Palm Fibre from Different Parts Reinforced Unsaturated Polyester Composites', *Key Engineering Materials*, 471-472, (2011), pp. 502-506.
8. Z.N. Ismarrubie, Aidy Ali, T. Satake, M. Sugano: 'Influence of Microstructures on Fatigue Damage Mechanisms in Ti-15-3 Alloy', *Materials and Design*, 32, (2011), pp. 1456-1461. (Impact Factor: 1.694).
9. J. Sahari, S.M. Sapuan, Z.N. Ismarrubie, and M.Z.A. Rahman: 'Tensile and impact properties of different morphological parts of sugar palm fibres reinforced unsaturated polyester composites', Accepted to *Polymer & Polymer Composites*, (2011), (Impact Factor: 0.470).

10. J. Sahari, S.M. Sapuan, Z.N. Ismarrubie, and M.Z.A. Rahman: 'Physio-chemical properties of different parts of sugar palm fibres', Accepted to *Fibres and Textiles in Eastern Europe*, (2010), (Impact Factor: 0.629)
11. M.M. Shahzamanian, B.B. Sahari, M. Bayat, F. Mustapha, Z.N. Ismarrubie: 'Finite Element Analysis of Thermoelastic Contact Problem in Functionally Graded Axisymmetric Brake Disks', *Composite Structures*, 92, (2010), pp 1591-1602. (Impact Factor: 2.028).
12. M.M. Shahzamanian, B.B. Sahari, M. Bayat, Z.N. Ismarrubie, F. Mustapha: 'Transient and Thermal Contact Analysis for the Elastic Behavior of Functionally Graded Brake Disks Due to Mechanical and Thermal Loads', *Materials and Design*, 31, (2010), 4655-4665. (Impact Factor: 1.694).
13. Eung S. Kim, Dong H. Kang, Jun-Mo Yang, Hyung S. Shin, Nur I. Zahari, Hitoshi Ohsato: 'Crystal Structures and Dielectric Properties of  $\text{Ca}_{0.85}\text{Nd}_{0.1}\text{TiO}_3\text{-LnAlO}_3$  Ceramics', *IEEE Trans. on Ultrasonics, Ferroelectric, and Frequency Control*, 55, (2010), pp 1075-1080.
14. Z. N. Ismarrubie, M. Ando, T. Tsunooka, I. Kagomiya, H. Ohsato: 'Dielectric Properties and Microstructure of Nearly Zero Temperature Coefficient  $\tau_f$  of Forsterite Ceramics', *Materials Science Forum*, Vols 561-565, (2007), pp. 617-620.
15. Mikio SUGANO, Tadaaki SATAKE, Nur Ismarrubie ZAHARI: 'Microstructural Examination of Spray Coating by Transmission Electron Microscopy', *Journal of High Temperature Society of Japan*, 30 [6], (2004), pp. 294-300.
16. Z. N. Ismarrubie, M. Sugano: 'Environmental effects of fatigue failure micromechanisms in Titanium', *Materials Science and Engineering A*, 386, (2004), pp. 222-233. (Impact Factor: 2.101).

### Chapters in Book

1. N. I. Zahari, M. Sugano, M. A. Imam, Z. Tanaka, T. Satake: 'A Microcrystallographic Study of Fatigue Damage in Ti-Ni Shape Memory Alloy', "*Ti-2003 — Science and Technology*", ed. G. Lütjering, J. Albrecht, pp. 1903-1910, Wiley-VCH, Hamburg, (2004).
2. N. Zahari, M. Sugano, T. Satake, A Ohmori: 'Microcrystallographic Study of Plasma Sprayed Alumina Deposit by Transmission Electron Microscope', "*Thermal Spray 2003 — Advancing the Science and Applying the Technology Vol. 2*", ed. B. R. Marple, M. Moreau, pp. 1433-1440, ASM Thermal Spray Society, OH (2003).
3. N I Zahari, S Yoda, Z Tanaka, M Sugano: 'A Microstructural Study of Fatigue Failure in Ti-15V-3Cr-3Sn-3Al Alloy', "*Fatigue 2003 — Fatigue & Durability Assessment of Materials, Components & Structures*", ed. M. R. Bache, P. A. Blackmore, J. Draper, J.H. Edwards, P. Roberts, J. R. Yates, pp. 89-96, Engineering Integrity Society, Sheffield, (2003).
4. N. Ismarrubie Zahari, M. Sugano, T. Satake: 'Fatigue Microstructures in Titanium Cyclically Stressed in Inert Environment', "*Titanium '99 — Science and Technology*", ed. I. V. Gorynin, S. S. Ushkov, pp. 933-938, CRISM Promety, Saint-Petersburg , (1999).

### International Conferences

1. Syamimi Shamsuddin, Hanafiah Yussof, Luthffi Ismail, Fazah Akhtar Hanapiah, Salina Mohamed, Hanizah Ali Piah, Nur Ismarrubie Zahari: 'Initial Response of Autistic Children in Human-Robot Interaction Theraph with Humanoid Robot NAO', 2011 IEEE 8<sup>th</sup> International Colloquium on Signal Processing and its Applications (CSPA2012), Melaka, 23-25 Mac. 2012.
2. Luthffi Idzhar Ismail, Syamimi Shamsuddin, Hanafiah Yussof, Nur Ismarrubie Zahari, Saiful Bahari, Hafizan Hashim and Ahmed Jaffar: 'Face Detection Technique of Humanoid Robot NAO for Application in Robotic Assistive Therapy', 2011 IEE International Conference on Control System, Computing and Engineering (ICCSCE2011), Penang, 25-27 Nov. 2011.
3. Syamimi Shamsuddin, Luthffi Idzhar Ismail, Hanafiah Yussof, Nur Ismarrubie Zahari, Saiful Bahari, Hafizan Hashim and Ahmed Jaffar: 'Humanoid Robot NAO: Review of Control and Motion Exploration', 2011 IEE International Conference on Control System, Computing and Engineering (ICCSCE2011), Penang, 25-27 Nov. 2011.

4. Hanafiah Yussof, Ahmed Jaffar, Nur Ismarrubie Zahari, Masahiro Ohka: 'Application of Tactile Slippage Sensation Algorithm in Robot Hand Control System', 12<sup>th</sup> International Conference on Computers, Communications and Systems 2011 (ICCCS2011), Daegu South Korea, 24<sup>th</sup> Nov. 2011.
5. Mehryari Lima, Reza., Z.N. Ismarrubie, E.S. Zainudin and S.H. Tang: 'Energy Absorption Capability of Hybrid Tube Made by Mild Steel and GFRP under Quasi-Static Loading', International Conference on Manufacturing Science and Technology (ICMST 2011), Singapore, Sept. 2011.
6. Mehryari Lima, Reza., Z.N. Ismarrubie, E.S. Zainudin, S.H. Tang: 'Axial Behavior of Steel Tube Wrapped by Composite as Energy Absorber under Compressive Load', IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA2011), Langkawi, Malaysia, Jun 2011.
7. Z.N. Ismarrubie, M. Sugano, Hanafiah Yussof: 'Fatigue Damage of Pure Titanium Cyclically Stressed in Plane Bending', 2010 International Conference on Advances in Mechanical Engineering (ICAME2010), Shah Alam, Malaysia, Dec. 2010.
8. Hanafiah Yussof, Nur Ismarrubie Zahari, Masahiro Ohka: 'Evaluation of Tactile Slippage Sensation using Robotic Hand Equipped with Tactile Sensor', 2010 International Conference on Advances in Mechanical Engineering (ICAME2010), Shah Alam, Malaysia, Dec. 2010.
9. Shahzamanian MM, Sahari BB, Bayat M, Mustapha F, Ismarrubie ZN: 'Contact Statures between Functionally Graded Brake Disk and Pure Pad Disk', International Advanced Technology Congress 2009 (ATCi 09), Kuala Lumpur, Malaysia, Nov. 2009.
10. Shahzamanian MM, Sahari BB, Bayat M, Mustapha F, Ismarrubie ZN, Shahrjerdi A: 'Effect of Internal Curved Boundary Condition on Natural Frequency Parameters in Square Plates', National Conference of Post Graduate Research (NCON - PGR), Kuantan, Pahang, Oct. 2009.
11. Zahari Nur ISMARRUBIE, Salit Mohd SAPUAN, Mikio SUGANO: 'Fatigue Damage Mechanism of Pure Titanium', The 4<sup>th</sup> International Conference on Recent Advances in Materials, Minerals & Environment, Penang, Malaysia, Jun 2009.
12. Hitoshi OHSATO, Minato ANDO, Mio TERADA, Zahari Nur ISMARRUBIE and Tsutomu TSUNOOKA: 'Formation Conditions of Silicate Ceramics for Microwave/Millimeterwave Dielectrics', Proc. of the 24<sup>th</sup> International Japan-Korea Seminar (NIKKAN24), Shizuoka, Japan, Nov. 2007.
13. Z. N. Ismarrubie, M. Terada, I. Kagomiya, H. Ohsato: 'Microwave Dielectric Properties of Ni, Zn and Mn Substituted Cordierite Ceramics', Proc. of the International Conference on Engineering and ICT (ICEI07), Melaka, Malaysia, Nov. 2007.
14. Z. N. Ismarrubie, M. Ando, T. Tsunooka, I. Kagomiya, H. Ohsato: 'Dielectric Properties and Microstructure of Nearly Zero Temperature Coefficient  $\tau_f$  of Forsterite Ceramics', Proc. of the 6<sup>th</sup> Pacific Rim International Conference on Advanced Materials and Processing (PRICM6), Jeju, Korea, Nov. 2007.
15. E. S. Kim, D. H. Kang, J. M. Yang, H. S. Shin, N. I. Zahari and H. Ohsato: 'Crystal Structure and Dielectric Properties of  $\text{Ca}_{0.85}\text{Nd}_{0.1}\text{TiO}_3\text{-LnAlO}_3$  (Ln=Sm, Gd, Dy, Er) Ceramics', Proc. of 16<sup>th</sup> IEEE International Symposium on the Applications of Ferroelectrics (ISAF2007), Nara, Japan, May 2007.
16. Z. N. Ismarrubie, T. Tsunooka, M. Ando and H. Ohsato: 'Development of Forsterite Ceramics with Zero Temperature Coefficient  $t_f$  by Rutil Addition', Abstract of the 4<sup>th</sup> International Conference on Advanced Materials & Processing (ICAMP4), Waikato, New Zealand, Dec. 2006.
17. Zen-ei. Tanaka, Mikio Sugano, Yasuo Nasu and Nur Ismarrubie Zahari: 'Mirror-Surface Grinding of Titanium Alloy', Proc. of the 8th International Conference on Manufacturing and Management, Queensland, Australia, Dec. 2004.
18. N. I. Zahari, M. Sugano, M. A. Imam, Z. Tanaka, T. Satake: 'A Microcrystallographic Study of Fatigue Damage in Ti-Ni Shape Memory Alloy', Abstract of the 10<sup>th</sup> World Conference on Titanium, Hamburg, Germany, July 2003.
19. Z. Tanaka, N. I. Zahari, M. Sugano: 'Mirror-Finished Surface Grinding in CP Titanium and Ti-6Al-4V Alloy', Abstract of the 10<sup>th</sup> World Conference on Titanium, Hamburg, Germany, July 2003.
20. N I Zahari, S Yoda, Z Tanaka, M Sugano: 'A Microstructural Study of Fatigue Failure in Ti-15V-3Cr-3Sn-3Al Alloy', Proc. of the 5<sup>th</sup> International Conference of the Engineering Integrity Society, Cambridge, United Kingdom, April 2003.
21. N. I. Zahari, M. Sugano, T. Satake,: 'Fatigue Microstructures in Titanium Cyclically Stressed in Inert Environment', Abstract of the 9<sup>th</sup> World Conference on Titanium, Saint-Petersburg, Russia (1999), S4-22.

## National Conferences

1. Nur Ismarrubie Zahari, Minato Ando, Tsutomu Tsunooka, Hitoshi Ohsato: 'Relationship between Properties and Microstructure of Nearly Zero Temperature Coefficient of Resonant Frequency of Forsterite Ceramics', Extended abstract of the 20<sup>th</sup> Fall Meeting of The Ceramics Society of Japan, Nagoya, Japan, Sept. 2007.
2. Z. N. Ismarrubie, Y. Inagaki, T. Shimada, I. Kagomiya, K. Kakimoto, H. Ohsato: 'Microstructural Study in SrTiO<sub>3</sub> Doped LaAlO<sub>3</sub> Single Crystal Grown by Floating Zone Method', Abstract of the 15<sup>th</sup> Scientific Conference Electron Microscopy of Malaysia, Kuala Lumpur, Malaysia, Dec. 2006, PC6.
3. N. Ismarrubie Zahari, M. Sugano: 'A Crystallographic Study of Fatigue Crack Growth Micromechanism in Titanium', Proc. of the 10<sup>th</sup> Scientific Conference Electron Microscopy of Malaysia, Kuala Lumpur, Nov. 2001, pp. 177-180.

## Awards & Recognitions:

1. 2011 – Excellent Teaching Award, Faculty of Engineering, Universiti Putra Malaysia
2. 2010 – Excellent Services Award, Universiti Putra Malaysia
3. 2010 – Excellent Teaching Award, Faculty of Engineering, Universiti Putra Malaysia
4. 2009 – Excellent Teaching Award, Faculty of Engineering, Universiti Putra Malaysia
5. 2006~2008 – Selected as Scientist in research team of The Japan 21<sup>st</sup> Century Centre of Excellent (COE) "World Ceramics Center for Environmental Harmony"
6. 2007 – Best paper award in International Conference on Engineering and ICT (ICEI07), Melaka Malaysia
7. 1998 – Hatakeyama Award (Excellent achievement in Mechanical Engineering Course, Japan) of The Japan Society of Mechanical Engineering (JSME)
8. 1998~2000 – Honor of The Japan of Sagawa Foundation

## Professional Training Attended

1. Towards Successful Research, organized by Professional Advancement Centre (PACE) UPM, December 2005.
2. Electron Microscopy and Thin Film Specimen Handling, organized by Yamagata University, May 2002
3. Matlab: Innovative Solution, organized by TechSource System Sdn Bhd. 2001

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