

CURRICULUM VITAE

Personal

- 1/ Name : Nurulakmal Mohd Sharif
2/ Date of birth : 21st May 1973
3/ Position : Associate Professor
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Academic qualifications

- 1/ BEng (Materials Engineering) (Hons) Universiti Sains Malaysia, 1996.
2/ PhD (Materials Engineering) University of Wales Swansea, 2001.
“Fatigue Behaviour of Al-Based Metal Matrix Composites Produced by Stir-Casting and Powder Metallurgy Routes”.

Research Activities

- 1/ Grant (as Principal Investigator) :
- (i) Short Term USM ; Fatigue Behaviour of Particulate-reinforced Al-Based MMCs, 2002 – 2004.
 - (ii) E-Science Fund MOSTI ; Development of Ti-Al Alloys : Effect of Alloying Elements and Surface Treatment on the High Temperature Oxidation Behavior, Dis 2006 – 2009.
 - (iii) CR Grant AUN/SEED-Net JICA ; Mechanical and Corrosion Behavior of In-situ Particulate (Alumina, TiB₂, TiC) reinforced Fe-Al Intermetallic Composites, Mac 2007 – Feb 2010.
 - (iv) FRGS Grant ; Study on the Diffusion and Intermetallic Formation of Lead-free Solder on Various Surface Finish, Oct 2007 – April 2010.
 - (v) Southern Steel Bhd. Research Grant : Utilization of EAF Slag as raw material in Tiles, 2013 - 2015.
 - (vi) Short Term USM ; Utilization of Electric Arc Furnace Steel slag as raw material in Structural Materials, Oct 2012 – Oct 2014.
 - (vii) CR Grant AUN/Seed-Net JICA ; Creep of SAC 305 solder alloy with addition of Al and Si, Oct 2012 – Sept 2014.
 - (viii) CREST Grant ; collaboration project with Intel Kulim on ‘Thermal Interface Solution to Test modules in Semiconductor Industry’, July 2013 – Jan 2015.

- (ix) FRGS Grant : Electromigration and Diffusion Mechanism Grain Refined Low-Ag Sn-Ag-Cu Solder, May 2013 – April 2016. Total : 111,000.00

2/ Involved in research projects :

- ❖ “The Study of Tin-based Lead Free Solder : Alloy composition and Its Effect on Surface Finish”, INTEL (M) CORT Grant, 2007 – 2009.
- ❖ “Tin in Metal Matrix Composites : High Density Applications including Fishing Weights and Balance Weights” under the Tin Technology, UK grant project, Mac 2005 – Feb 2007.
- ❖ “Determination of Transport Properties in The Protective Oxide-Scale Formation of The Ti-Al-X (Cr & Mn) Multiphase Alloy Systems” - AUN/SEED-Net Program research project collaboration with JICA.

Publications List

(a) Publication in Cited ISI/Scopus Journal

- [1] J. Nuclear and Related Technology, (2007) Vol. 4, Special Edition 1&2, pp 155-158 ; *Study of anodized P/M Aluminum matrix composite reinforced with 15wt% Saffiltm Alumina short fibre*, Mohd Nazree D., Zainal A.A., Luay B.H. & Nurulakmal M.S.
- [2] Proceedings of the IEEE/CPMT International Electronics Manufacturing Technology (IEMT) Symposium, 2008 ; *Characteristic of low temperature Bi-In-Sn solder alloy*, Mhd. Noor, E.E., Ismail, A.B., Sharif, N.M., Ariga, T. & Hussain, Z.
- [3] Malaysian Journal of Microscopy, vol. 4 (2008) pp. 192 : *Study of the Oxides scale of Ti-48Al, Ti-48Al-4Cr and Ti-48Al-4Nb on the high Temperature Oxidation*, S. Napisah & M.S. Nurulakmal.
- [4] Malaysian Journal of Microscopy, 2009 5(1), pp. 158-163 ; *Studies on chromium alloyed iron aluminides at high temperature oxidation*, Norarney, A., Zuhailawati, H. & Nurulakmal M.S.
- [5] Malaysian Journal of Microscopy, 2009 5(1), pp. 76-85 ; *Effect of various heat-treatments on the microstructure of TiAl alloys*, Napisah S. & Nurulakmal M.S.
- [6] Materials Science and Technology Conference and Exhibition 2009, pp. 124-131 ; *Low temperature of Bi-In-Zn lead-free solder alloy*, Ervina Efzan, M.N, Zuhailawati H., Ismail A.B., Sharif N.M. & Ariga, T.
- [7] Journal of Alloys and Compound, Volume 507, Issue 1, 24 September 2010, Pages 290–296 ; *Wettability and strength of In–Bi–Sn lead-free solder alloy on copper substrate*, Ervina Efzan Mhd Noor, Nurulakmal Mohd Sharif, Cheong Kuan Yew, Tadashi Ariga, Ahmad Badri Ismail, Zuhailawati Hussain.

- [8] Malaysian Journal of Microscopy Vol 7(1), 2011, pp 14-19 : *The effect of indium and bismuth addition on IMC formation of Sn96Ag3.5Cu0.5 solder*, Abdul Karim A.W & Nurulakmal M.S.
- [9] J Mater Sci: Mater Electron, (2012) 23 : 1739-1749 (DOI 10.1007/s10854-012-0656-2) : *Modifying the mechanical properties of lead-free solder by adding iron and indium and using a lap joint test*, H. Fallahi • M. S. Nurulakmal • A. Fallahi • Jamaluddin Abdullah.
- [10] Materials Science and Engineering A 553 (2012) 22-31 ; *Effect of iron and indium on IMC formation and mechanical properties of lead-free solder*, H. Fallahi, M.S. Nurulakmal, A. Fallahi Arezodar, Jamaluddin Abdullah.
- [11] Advanced Materials Research Vol. 545 (2012) pp 251-255 ; *Effect of alloying elements on the microstructure and IMC formation of SnAgCu solder on Ni(P) substrate*, Shazlin Shaik Osman & Nurulakmal Mohd Sharif. Trans Tech Publications.
- [12] Malaysian Journal of Microscopy Vol. 8 (2012) pp. 102-106 ; *Microstructure and mechanical properties of Sn-3Ag-0.5Cu alloy containing Fe, Ce and Sb on Cu substrate*, A.S. Anasyida, N.M. Sharif and C.L. Teh.
- [13] AIP Conf. Proc. 1476, 327 (2012) : DOI 10.1063/1.4751621 ; *Fabrication of low cost cutting wheel via thermal spray process*, A.S. Anasyida & M.S. Nurulakmal.
- [14] Advanced Materials Research Vol. 620 (2013) pp 66-71 ; *Crystallization of Potassium Calcium Silicate from modified industrial EAF slag*, Lateef Kolawole Bankole, Sheikh Abdul Rezan & Nurulakmal Mohd Sharif. Trans Tech Publications.
- [15] Advanced Materials Research Vol. 652-654 (2013) pp 1628-1632 ; *Evaluation of the leaching behavior of Hexavalent Chromium from Malaysian Electric Arc Furnace steel slag*, Lateef Kolawole Bankole, Sheikh Abdul Rezan, Nurulakmal Mohd Sharif & Norlia Baharun.
- [16] Microelectronics Reliability DOI : 10.1016/j.microrel.2014.07.068 ; *Microstructure of Sn-1Ag-0.5Cu solder alloy bearing Fe under salt spray test*, N.I.M. Nordin, S.M. Said, R. Ramli, M.F.M. Sabri, N.M. Sharif, N.A.F.N.M. Arifin & N.N.S. Ibrahim.
- [17] Advanced Materials Research Vol. 858 (2014) pp 116 – 121 : *Microstructure study of Sn-3.0Ag0.5Cu alloy on Cu/NiP-coated substrate by addition of Fe, Sb and Ce*, A.S. Anasyida, M.S. Nurulakmal, M. Yusoff & C.L. Teh.
- [18] Advanced Materials Research Vol. 858 (2014) pp 228-235 ; *Assessment of EAF steel slag solubility by statistical design*, Lateef Kolawole Bankole, Sheikh Abdul Rezan & Nurulakmal Mohd Sharif.
- [19] Advanced Materials Research Vol 1024 (2014) pp 211-214 : *Characterization of ceramic tiles added with EAF slag waste*, Pao-Ter Teo, Anasyida Abu Seman & Nurulakmal Mohd Sharif.

- [20] Waste Management 34 (2014) pp 2697-2708 ; *Recycling of Malaysia's Electric Arc Furnace (EAF) slag waste into heavy-duty green ceramic tile*, Pao-Ter Teo, , Anasyida Abu Seman, Projjal Basu, Nurulakmal Mohd Sharif.
- [21] Journal of Alloys and Compounds 622 (2015) pp 184-188 : *Study on Coarsening of Ag₃Sn Intermetallic Compound in the Fe-modified Sn-1Ag-0.5Cu Solder Alloys*, Dhafer Abdulameer Shnawah, Mohd Faizul Mohd Sabri, Irfan Anjum Badruddin, Suhana Mohd Said, Mohamed Bashir Ali Bashir, Nurulakmal Mohd Sharif, Mohamed Hamid Elsheikh.

(b) Publications in Non-cited Journal

- 1) ASEAN Journal for Science and Technology Development (AJSTD) Vol. 22 Issue 3 pp. 251-259 (2005) ; *Spot welding Copper-1%Cr electrode tips produced via Equal Channel Angular Pressing*, L.B. Hussain, Ali A. Aljuboury, M.A.M. Gebril, Nurulakmal Mohd Sharif.
- 2) IIUM Engineering Journal, Vol. 9, No. 2, 2008 pp. 1 – 10 ; *Spot welding Copper-1% Cr electrode tips produced via equal channel angular pressing*, L.B. Hussain, A.A. Aljuboury, M.A.M. Gebril, Nurulakmal M. Sharif.
- 3) IIUM Engineering Journal, Vol. 11, No. 2, 2010 : *Influence of die angles on the microhardness of aluminum alloy processed by equal channel angular pressing*, Ali A. Aljuboury & Nurulakmal Mohd Sharif.
- 4) SEAIISI Quarterly Journal 2011, vol. 40, no. 4, pp. 26 – 32, *Thermodynamic Modeling of Mineral Phases Formation in EAF Slag system and its Application as Agricultural Fertilizer*, Lateef K. Bankole, Sheikh Abdul Rezan, Nurulakmal M. Sharif.

Teaching Module and Short Course

1. Teaching Module for Training Course Malaysian Iron and Steel Industry Federation (MISIF) in Shah Alam :
 - (i) Basic Metallurgy
 - (ii) Corrosion & Coating (Surface Engineering)
 - (iii) Advanced Metallurgy
 - (iv) Mechanical Testing of Metal
 - (v) Introduction to Heat Treatment
 - (vi) Corrosion & Coating
 - (vii) Joining Methods

2. Teaching Module for Short Course “Cathodic Protection : Principles, Design and Inspection” held by PPKBSM in 27 – 29 September 2004.
3. Teaching module for Short Course “Metallurgy Principles” jointly organized by PPKBSM, USM and INTEL (M) Penang in December 2005.
4. Teaching module for Short Courses : MISIF (Malaysian Iron and Steel Industry Federation), Alpine Pipe Manufacturing, Tatt Giap Steel Centre, Tanaka Electronics, KOBE Precision Technology, Southern Steel Berhad (2004 – 2014)

Consultancy Work

1. NOSS (National Occupation Skills Standard) Development Committee under JKM Malaysia for NOSS level 1, 2, 3, 4 & 5 : Foundry and Steel Making.
2. MARA Curriculum Advisory Board Member for Sijil Teknologi Elektro-Penyaduran (Electroplating Technology) for 2007 & 2011.
3. GMI – MARA Advisory Panel Member for development of Curriculum “Diploma in Foundry” for KKTM Alor Gajah, 2006 – 2010.
4. Short Courses for MISIF, Intel and other industries on :
 - (i) Basic and Advanced Metallurgy
 - (ii) Corrosion & Coating / Cathodic Protection
 - (iii) Mechanical Testing for Metals
 - (iv) Introduction to Heat Treatment
 - (v) Fracture & Failure Analysis
 - (vi) Joining Methods
5. Specific Short Courses for Industry includes :
 - (i) Intel (M), Penang : December 2005.
 - (ii) Tanaka Electronic, Penang : March 2007.
 - (iii) Alpine Pipe Manufacturing, Klang, Selangor : April 2007.
 - (iv) Tatt Giap Steel Centre, Perai, Penang : July 2007.
 - (v) Kobe, Penang : August 2007.
 - (vi) Kilang Rantai S.A Sdn. Bhd. ; July 2008
 - (vii) Southern Steel Bhd : 2010
 - (viii) Kobe Precision Tech, Penang : November 2014

Teaching Courses

- 1/ EBB 113 – Engineering Materials
- 2/ EBS 110 – Engineering Drawing (involve in tutorial)
- 3/ EBB 202 – Crystallography & Bonding in Solids
- 4/ EBB 224 – Engineering Design
- 5/ EUT 201 – Teknik Berfikir (involve in tutorial)
- 6/ EBB 316 – Corrosion & Degradation
- 7/ EBB 334 – Mechanical Metallurgy
- 8/ EBB 345 – Materials Characterization
- 9/ EBB 408 – Materials Selection & Design

- 10/ EBB 440 – Applied Metallurgy (Metals Processing)
- 11/ EBB 521 – Industrial Heat Treatment
- 12/ EBB 526 – Advanced Electronic Packaging
- 13/ EBB 511 – Materials Characterization
- 14/ EBB 512 – Phase Diagram

Student Supervision

- 1/ PhD – 2 active & 3 graduated students (as main supervisor)
- 2/ PhD – 3 graduated students (as co-supervisor)
- 3/ MSc – 3 active & 7 graduated students (as main supervisor).
- 4/ MSc – 1 active & 7 graduated students (as co-supervisor)
- 4/ Final year project (undergraduate students) – 48 students.

Other Commitments / activities

- 1/ Member of Board of Engineering Malaysia.
- 2/ Ordinary Member of Institute of Materials Malaysia.
- 3/ Life Member of Electron Microscopy Society Malaysia
- 3/ Lembaran Residential College Principal (2003 – 2012)