

List of Publications

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(a) Journal Publications (recognized and refereed journals):

- [1] Pial, T. H., Rakib, T., Mojumder, S., Motalab, M. and **Akanda, M. A. S.**, "Atomistic investigations on the mechanical properties and fracture mechanisms of indium phosphide nanowires", *Physical Chemistry Chemical Physics*, The Royal Society of Chemistry, **Phys. Chem. Chem. Phys.**, 2018, **20**, 8647-8657.
- [2] **Akanda, M.A.S.**, Tohmyoh, H., "Strength and fracture behavior of ultrathin Pt wires", *Letters in Fractures and Micromechanics*, *International Journal of Fractures*, Springer, 2013, 269-274.
- [3] Patent: Invention entitled: Load Measuring Apparatus, Inventors: Hironori Tohmyoh and M. A. Salam Akanda, Japanese Patent application No. 2009-010322 filed January 20 2009, International Application No. PCT/JP2009/069612 filed November 19, 2009
- [4] Mustafa, M., Chhanda, N. J. and **Akanda, M.A.S.**, "A New Numerical Method for the Analysis of Stress Concentration in Tension Specimen", *Journal of Experimental & Applied Mechanics*, Vol 3, No 1, (2012), 1-16.
- [5] Tohmyoh, H., **Akanda, M.A.S.**, and Nobe, Y., "*Mechanical Properties of Thin Al Wires Prepared by Electromigration*", *J. Phys. Soc. Jpn.*, 81 (9), (2012), 094803-1 - 094803-4.
- [6] **Akanda, M.A.S.**, Tohmyoh, H. and Saka, M, "*Precision friction measurement between ultrathin wire and microprobe*", *Sensors and Actuators A: Physical*, 172 (Issue 1), (2011), 189 - 194, Elsevier)
- [7] Tohmyoh H., Ishihara M., **Akanda M.A.S.**, Yamaki S., Watanabe T. and Iwabuchi T., "*Accurate determination of the structural elasticity of human hair by a small scale bending test*", *Journal of Biomechanics*, Vol. 44, Issue 16, 10 November 2011, Pages 2833–2837 (Elsevier)
- [8] Ali, M.R., Saka M., Tohmyoh H. and **Akanda M.A.S.**, "*Evaluation of Electrical Resistivity of Oxide Scale Formed under Different Conditions*", *Journal of Solid Mechanics and Materials Engineering*, JSME, Vol. 4, No. 12, pp. 1732-1741, 2010 (Japan)
- [9] Tohmyoh, H., **Akanda, M.A.S.** and Saka, M, "*Small-span bending test for determination of elastic-plastic properties of ultrathin Pt wires*", *Applied Physics A*, Vol. 103, No. 2, pp. 285-291, 2011 (Springer)
- [10] Nath, S.K.D, Tohmyoh, H. and **Akanda, M.A.S.**, "*Evaluation of elastic, elastic-plastic properties of thin Pt wire by mechanical bending test*", *Applied Physics A*, Vol. 103, No. 2, pp. 493-496, 2011 (Springer)
- [11] **Akanda, M.A.S.**, Tohmyoh, H. and Saka, M., "*An integrated compact unit for wide range micro-newton force measurement*", *Journal of Solid Mechanics and Materials Engineering*, JSME, Vol. 4, No. 4, pp. 545-556, 2010
- [12] Tohmyoh, H. and **Akanda, M.A.S.**, "*Sensitivity of acoustic microscopy for detecting*

- three-dimensional nanometer gaps embedded in a silicon structure*" Journal of Acoustical Society of America. Jul; 126(1): pp. 98-102, 2009
- [13] Nath, S.K.D. and **Akanda, M.A.S.**, "A finite difference solution of a steel plate with an internal hole using the displacement potential approach", Journal of Strain Analysis, Vol. 44(8), pp. 712-727, 2009
- [14] Tohmyoh, H., Takeda, H., **Akanda, M.A.S.** and M. Saka, "Evaluation of mechanical and electrical properties of very-thin Pt wires by utilizing joining technique with Joule heating", J Soc. Mat. Sci. 58 (1) 2009, 847-851
- [15] Nath, S.K.D., **Akanda, M.A.S.**, Ahmed, S.R. and Uddin, M.W., "Numerical investigation of bond-line stresses of tire tread section", International Journal of Applied Mechanics and Engineering, Vol. 13, No. 1, pp. 43-61, 2008
- [16] **Akanda, M.A.S.** and Saka, M., "Relationship between closure stress of small fatigue crack and ultrasonic response", Journal of Nondestructive Evaluation, Vol. 23, No. 2, pp. 37-47, 2004 (USA)
- [17] Saka, M. and **Akanda, M.A.S.**, "Ultrasonic measurement of the crack depth and the crack opening stress intensity factor under a no load condition", Journal of Nondestructive Evaluation, Vol. 23, No. 2, pp. 49-63, 2004 (USA)
- [18] Saka, M. **Akanda, M.A.S.** and Ahmed, S.R., "Ultrasonic NDE of closed cracks- sizing and evaluation of crack opening stress intensity factor under a no load condition", Key Engineering Materials, Vols. 270-273, pp. 1277-1284, Trans Tech Publications, 2004 (Switzerland)
- [19] **Akanda, M.A.S.** and Saka, M., "Sensitive ultrasonic testing of a small closed crack", Strength Fracture and Complexity, Vol. 1, No. 2, pp. 89-99, 2003 (IOS Press, Netherlands)
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- [21] **Akanda, M.A.S.**, Ahmed, S.R. and Uddin, M.W., "Stress analysis of gear teeth using displacement potential function and finite difference", International Journal of Numer. Meth. Engng., Vol. 53, No. 7, pp. 1629-1640, 2002 (UK)
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- [23] **Akanda, M.A.S.**, Ahmed, S.R., Khan, M.R. and Uddin, M.W., "A finite difference scheme for mixed boundary value problems of arbitrary-shaped elastic bodies", Advances in Engineering Software, Vol. 31, No. 3, pp. 173-184, 2000 (Elsevier, UK)
- [24] Helali, M.M. and **Akanda, M.A.S.**, "Effect of compression during briquetting peat on the dryness and quality of peat briquette", Journal of the Institution of Engineers, India, Vol. 80, pp. 7-10, 1999 (India)
- [25] Khan, M.R., **Akanda, M.A.S.** and Uddin, M.W., "A new approach to instability testing of shells", International Journal of Pres. Ves. & Piping, Vol. 75, No. 1, pp. 75-80, 1998 (UK)
- [26] Dutta, P., Khan, M.R., **Akanda, M.A.S.** and Uddin, M.W., "Stability analysis of a toroidal pipe-reducer under uniform external pressure", International Journal of Pres. Ves. & Piping, Vol. 72, No. 3, pp. 203-218, 1997 (UK)

(b) International Conference Proceedings (peer reviewed):

- [27] Bhuyan, M.Y., and **Akanda, M.A.S**, "Numerical Investigation of the State of Stresses in Bilayer Composites under Tensile and Shear Loading Conditions" Proceedings of the 10th International Conference on Mechanical Engineering, (ICME 2017), 20-22 December 2017, Dhaka, **Bangladesh**
- [28] Khan, A.I., Akanda, M.A.S., and Akhter, A., "*An Adaptive Mesh Refinement Scheme for the Solution of Mixed-Boundary Value Problems*", *International Conference on Mechanical, Industrial and Energy Engineering 2014 25-26 December, 2014, Khulna, Bangladesh.*
- [29] Khan, A.I., Bhuiyan, Y., Akanda, M.A.S., "*Interface Stress Analysis of Two Bonded Isotropic Materials by Finite Difference Method*", *International Conference on Mechanical, Industrial and Energy Engineering 2014 25-26 December, 2014, Khulna, Bangladesh.*
- [30] Safi, A.M., Akanda, M.A.S., Sadique, J., Alam, M.S., "*Nondestructive evaluation of spot weld in stainless steel using ultrasonic immersion method*", *Procedia Engineering* 90 (2014) 110 – 115, Elsevier, 10th International Conference on Mechanical Engineering, ICME 2013.
- [31] **Akanda, M.A.S**, Tohmyoh, H. and Sakan, M., "*Precision friction measurement between ultrathin wire and microprobe by a special microforce sensor*", Proceedings of the Eurosensors XXIV, September 5-8, 2010, Linz, **Austria**.
- [32] Tohmyoh, H., **Akanda, M.A.S** and Saka, M., "*A Microscope System for Characterization of Mechanical Properties of Small-Scaled Objects*", Proceedings of Electronics System Integration Technologies Conference (ESTC-2010), September 13-16, 2010, Berlin, **Germany**.
- [33] **Akanda, M.A.S**, Tohmyoh, H. and Sakan, M., "*Ultrasonic NDE of Micrometer Fatigue Cracks in Steel Plates*", The Fourth Japan-US Symposium on Emerging NDE capabilities for a Safer World, June 7-11, 2010, Hawaii, **USA**.
- [34] **Akanda, M.A.S**, Tohmyoh, H. and Saka, M., "*Determination of hardening modulus of platinum nanowires*", Proceedings of the International Conference on Mechanical Engineering 2009 (ICME2009) 26-28 December 2009, Dhaka, **Bangladesh** (CD-ROM), ICME09-AM-25
- [35] **Akanda, M.A.S**, Tohmyoh, H. and Saka, M., "*Ultrasonic angle-beam inspection of micrometer cracks*", Proceedings of the 13th Asia-Pacific Conference on Non-Destructive Testing (APCNDT 2009), November 8-13, 2009, Yokohama, **Japan**, 78
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- [37] Tohmyoh, H. Takeda, H. **Akanda, M.A.S** and Saka, M., "*Manipulation of thin metallic wires by joule heating*", Proceeding of ASME 2009 InterPACK Conference, July 19-23, California, **USA** (CD-ROM) 2009, Paper No. IPACK2009-89122.
- [38] Tohmyoh, H. **Akanda, M.A.S**, Takeda, H. and Saka, M., "*Determination of elastic-plastic properties of metallic thin wires by small span bending test*", Proceeding of the

- 12th International Conference on Fracture, July 12-17, Ottawa, **Canada** (CD-ROM), 2009, Paper No. T22.010.
- [39] Nath, S.K.D., Tohmyoh, H. and **Akanda, M.A.S.**, “*Mechanical bending test of thin Pt wire*”, Proceedings of 5th International Conference on Mechanical Science based on Nanotechnology, March 6-7, 2008, Sendai, **Japan**, pp. 75-76.
- [40] Alam, M. T., **Akanda, M.A.S** and Mandal, A.C., “*Stress analysis of composite lamina having a square hole by finite difference technique*”, Proceedings of International Conference on Mechanical & Manufacturing Engineering, May 21-23, 2008, Johor Bahru, **Malaysia**, pp. 1-6
- [41] Alam, M. T., **Akanda, M.A.S** and Mandal, A.C., “*Finite difference approach for stress analysis in a composite lamina having a circular hole*”, Proceedings of the International Conference on Mechanical Engineering, Dec. 29-31, 2007, **Bangladesh**, ICME07-AM-64, pp. 1-6
- [42] **Akanda, M.A.S**, Mamun, S.M., Majumder, S. and Kharshiduzzaman, M., “*Theoretical stress concentration factors for short flat tension bars with opposite u-shaped notches*”, Proceedings of the International Conference on Mechanical Engineering, Dec. 29-31, 2007, **Bangladesh**, ICME07-AM-65, pp. 1-6
- [43] Nath, S.K.D., **Akanda, M.A.S.**, ahmed, S.R and Uddin M.W., “*Analysis of bond-line stresses of tire tread section*”, Proceedings of the 3rd BSME-ASME International Conference on Thermal Engineering, 20-22 Dec., 2006, Dhaka, **Bangladesh**
- [44] **Akanda, M.A.S.**, Somaji, M.O.H. and Akkas, M.T., “*A New Formulation of Elastic Problem by Finite Difference Technique*”, Proceedings of the International Conference on Mechanical Engineering, Dec. 28-30, 2005, **Bangladesh**, ICME05-AM-06, pp. 1-5
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- [48] Morshed S. M. M, Wahed M. A. and **Akanda M. A. S.**, “*Parametric Solution of Spur Gear Tooth under Tip Load*”, Proceedings of 4th International Mechanical Engineering Conference & 9th Annual Paper Meet, December 29-31, 2004, Dhaka, **Bangladesh**, pp.159-166
- [49] **Akanda, M. A. S.**, Noman, K. N. A. and Bhuiyan, M. S., “*Zooming of Critical Zone to Refine Finite Difference Solution of Elastic Problem*”, Proceedings of 4th International Mechanical Engineering Conference & 9th Annual Paper Meet, December 29-31, 2004, Dhaka, **Bangladesh**, pp.12-18
- [50] Rahman, M. A. and **Akanda, M. A. S.**, “*Finite Difference Scheme for Mixed Boundary Value Problem of Elastic Body with Internal Hole*”, Proceedings of 4th International Mechanical Engineering Conference & 9th Annual Paper Meet, December 29-31, 2004, Dhaka, **Bangladesh**, pp.19-25

- [51] Khan, M.G. K., Mahbub, F. and **Akanda, M. A. S.**, “*Effect of Fillet Radius on Stress Distribution of a Changing Thickness*”, Proceedings of 4th International Mechanical Engineering Conference & 9th Annual Paper Meet, December 29-31, 2004, Dhaka, **Bangladesh**, pp.26-31
- [52] Ahmed, S.R., Quddus, N.A., **Akanda, M.A.S** and Uddin, M.W., “*Boundary shape management for finite-difference solution of two-dimensional heat conduction problems*”, Proceedings of 2nd BSME-ASME International Conference on Thermal Engineering, Jan. 2-4, 2004, **Bangladesh**, Vol. II, pp. 764-769
- [53] **Akanda, M.A.S.** and Saka, M., “*Reconstruction of crack-tip profile of small fatigue cracks by ultrasonics*”, Proceedings of the International Conference on Mechanical Engineering, Dec. 26-28, 2003, **Bangladesh**, ICME03-AM-42, pp. 1-6
- [54] **Akanda, M.A.S.** and Saka, M., “*Toward a sensitive detection and sizing of small closed cracks by ultrasonics shear waves*”, Proceeding of Asian Pacific Conference on Fracture and Strength’01 and International Conference on Advanced Technology in Experimental Mechanics ’01, Oct. 20-22, 2001, Sendai, **Japan**, JSME No. 01-203, pp. 258-263
- [55] **Akanda, M.A.S.** and Saka, M., “*Enhancement of sensitivity of ultrasonic nondestructive evaluation of small closed cracks*”, Proceeding of International Workshop on Sensing and evaluation of Materials System, International Symposium of Research and Education, August 22, 2000, Sendai, **Japan**, pp. 56-63
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(c) National Conference Proceedings (All in Japan)

- [57] **Akanda, M.A.S.**, Tohmyoh, H. and Saka, M., “*Behavior of sliding friction of very-thin Pt wire against local contacts of two opposite probes*”, Proceeding of JSME Mechanical Engineering Congress, Sept. 5-8, 2010, Nagoa, **Japan**, Vol. 8, 179-180.
- [58] Tohmyoh, H., **Akanda, M.A.S** and Saka, M., JSME Sept 24 2010 (in Japanese).
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- [62] Tohmyoh, H., **Akanda, M.A.S.** and Saka, M., “*Ultrasonic Response for Nanometer Circular Gaps Embedded in Si Structure*”, Proceeding of JSME Mechanical Engineering Congress, Sept. 13-16, 2009, Morioka, **Japan**, Vol. 6, 425-426.
- [63] **Akanda, M.A.S.**, Tohmyoh, H. and Saka, M., “*Mechanism of fatigue crack closure and its effects ultrasonic evaluation of cracks*”, Proceeding of the JSNDI Fall Conference, November 5-7 2008, Sendai, **Japan**, 1-2.

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- [66] **Akanda, M.A.S.** and Saka, M., “*Evaluation of crack closing stress by ultrasonic pulse echo technique*”, Proceeding of JSME Annual Meeting, August 27-30, 2001, Fukui, **Japan**, Vol. VI, No. 01-1, pp. 205-206.
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- [68] Saka, M. and **Akanda, M.A.S.**, “*Nondestructive evaluation of closed cracks by ultrasonics*”, Proceeding of Failure Diagnosis of Material, JSNDI, June 28-29, 2001, Tokyo, **Japan**, pp. 65-70.