



Biography

KUET

Dr. Md. Shahidul Islam

Professor

Research Area Computational Mechanics
(Solid Mechanics and Materials Engineering)

Education

Doctor of Engineering

Nagaoka University of Technology (NUT), Japan (2012)

Thesis Title: [Analysis of 3D Intensity of Singular Stress Fields in Two-phase Transversely Isotropic Piezoelectric Bonded Joints](#)

Masters of Engineering

Nagaoka University of Technology (NUT), Japan (2009)

Thesis Title: [Stress Singularity Analysis in 3D-Transversely Isotropic Piezoelectric Bimaterials](#)

Bachelor of Science in Engineering (B.Sc. Engineering)

Khulna University of Engineering & Technology (KUET), Bangladesh (2001) Group: Mechanical Engineering,

Higher Secondary Certificate (HSC)

Noapara College, Abhaynagar, Bangladesh (1995) Group: Science,

Secondary School Certificate (SSC)

Rajhat Jafarpur Secondary School, Bangladesh (1993) Group: Science,

Service Records

- **Chairman, Executive Committee**
Department/Section: Executive Committee (Faculty of ME)
Khulna University of Engineering & Technology (KUET) From 20-01-2023 to 01-01-1970
- **Member, Academic Council**
Department/Section: KUET
Khulna University of Engineering & Technology (KUET) From 06-07-2014 to 01-01-1970
- **VC (Acting)**
Department/Section: KUET
Khulna University of Engineering & Technology (KUET) From 06-08-2024 to 11-08-2024
- **Professor (Grade- 2)**
Department/Section: Department of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 08-12-2020 to 01-01-1970
Responsibility: Engineering
- **Member**
Department/Section: Committee for Advance Studies and Research (CASR)
Khulna University of Engineering & Technology (KUET) From 01-12-2019 to 12-03-2022
- **Dean, Faculty of ME**
Department/Section: Faculty of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 20-01-2023 to 01-01-1970
- **Member of the Syndicate**
Department/Section: The University Syndicate
Khulna University of Engineering & Technology (KUET) From 20-01-2023 to 31-07-2023
- **Member, Officer Selection Committee**
Department/Section: Officer (Grade-4 to Grade-10)
Khulna University of Engineering & Technology (KUET) From 13-03-2022 to 01-01-1970
- **Head, ME**
Department/Section: Department of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 29-06-2020 to 28-06-2022
Working Area: Head of the Department
- **Secretary, CRTS-ME**
Department/Section: CRTS, Department of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 01-01-2017 to 31-12-2018
- **Organizing Secretary of ICMIEE 2018**
Department/Section: Faculty of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 01-02-2018 to 31-12-2018
Working Area: International Conference
- **Member, CASR**
Department/Section: Committee for Advance Studies and Research (CASR)
Khulna University of Engineering & Technology (KUET) From 20-01-2023 to 01-01-1970
Working Area: Advance Studies and Research
- **Chairman, CRTS-ME**
Department/Section: CRTS, Department of Mechanical Engineering
Khulna University of Engineering & Technology (KUET) From 01-07-2019 to 30-06-2021
Working Area: Consultancy, Research & Testing
- **Consultancy, Research & Testing Officer**
Department/Section: CRTS, Department of Mechanical Engineering

Khulna University of Engineering & Technology (KUET) From 09-03-2003 to 01-01-1970

Working Area:Consultancy, Research & Testing

- **Assistant Engineer**

Department/Section: Mechanical Engineering

Prasthapana Limited From 01-04-2002 to 31-08-2002

Working Area:Engineering

- **Maintenance Engineer**

Department/Section: Utility and Service

Dhaka Tobacco Industry From 01-09-2002 to 01-11-2002

Working Area:Engineering

- **Executive**

Department/Section: Power Plant

Beximco Textiles Limited From 02-11-2002 to 08-03-2003

Working Area:Engineering

- **Lecturer**

Department/Section: Department of Mechanical Engineering

Khulna University of Engineering & Technology (KUET) From 09-03-2003 to 08-05-2006

Working Area:Solid Mechanics and Material Engineering

- **Assistant Professor**

Department/Section: Department of Mechanical Engineering

Khulna University of Engineering & Technology (KUET) From 09-05-2006 to 05-07-2014

Working Area:Solid Mechanics and Material Engineering

- **Professor (Grade- 3)**

Department/Section: Department of Mechanical Engineering

Khulna University of Engineering & Technology (KUET) From 06-09-2016 to 07-12-2020

Working Area:Solid Mechanics and Material Engineering

- **Associate Professor**

Department/Section: Department of Mechanical Engineering

Khulna University of Engineering & Technology (KUET) From 06-07-2014 to 05-09-2016

Working Area:Solid Mechanics and Material Engineering

Research Interest

Computational Mechanics (Solid Mechanics and Materials Engineering)

1. Analysis of intensity of singularity at a vertex in 3D transversely isotropic piezoelectric bonded joints by boundary element method.
2. Analysis of order of singularity in 3D transversely isotropic piezoelectric and elastic bonded joints by finite element method.

The Intensity of singularity for the bimaterial joint can be evaluated by the Boundary Element Method (BEM) and the order of the stress singularity for the bimaterial joint can be evaluated by the eigen analysis based on Finite Element Method (FEM). In our present investigation, we use 3D transversely isotropic piezoelectric and elastic bonded structure. The influence of the electric field should be considered for the deformation of the piezoelectric material. We analyze the optimal material combination such that the intensity of singularity and order of the stress singularity can be minimized.

Publication

Books

Journals

13. (2019) , " Structural Analysis of a Thick-Walled Pressure Vessel using FEM," **The Journal of Engineering Science (JES)**, Faculty of Civil Engineering, Khulna University of Engineering & Technology, vol10, no.2, pp.69-78
12. (2018) , " Stress Analysis of a Thick Walled Orthotropic Bonded Cylinder under Pressure and Temperature by using FEM," **International Journal of Mechatronics and Manufacturing Technology**, Mantech Publications, vol3, no.1, pp.1-28
12. (2018) , " Numerical Investigation on Shell-and-Tube Heat Exchanger with Segmental and Helical Baffles," **Journal of Mechanical and Mechanics Engineering**, MAT Journals, vol4, no.2, pp.1-16
11. Islam,M. S. ,Morshed,M. and Mamun,a. A. H. M. A. A. (2018) , " Evaluation of stress field at the vertex of the interface in three-dimensional dissimilar material joints," **Int. Journal of Mechanical and Production Engineering**, IRAJ, vol6, no.2 (Part- 3), pp.24-30
10. (2017) , " Influence of Stress Singularity on Transversely Isotropic Piezo-ceramic Bonded Joints," **Journal of Mechanical Engineering and Applied Mechanics**, Mantech Publication, vol2, no.3, pp.1-16
9. (May 2014) , " Analysis of Intensity of Singular Stress Fields in Two-phase Transversely Isotropic Piezoelectric Single-step Bonded Joints," **ISESCO JOURNAL of Science and Technology**, ICPSR, vol10, no.17, pp.92-98
8. Islam,M. S. , Kader,M. G. , Uddin,M. M. K. and Ahmed,M. (2014) , " Analysis of Order of Stress Singularity at a vertex in 3D transversely Isotropic piezoelectric Dissimilar Bonded Joints," **Journal of Mechanical Engineering**, IEB, vol44, no.1, pp.1-5
7. (2014) , " Investigation of Order of Singularity in 3D Transversely Isotropic Piezoelectric Bimaterial Joints by FEM," **Journal of Circuits, Systems, and Computers, JCSC**, World Scientific Publishing Co. Pte. Ltd., vol24, no.2, pp.1540001-21
6. Islam,M. S. ,Kader,M. G. and Uddin,a. M. M. K. (2014) , " Investigation of order of singularity in 3D two-phase transversely isotropic piezoelectric dissimilar joints by eigenanalysis method," **Procedia Engineering**, Elsevier Ltd., vol90, pp.58-64
5. Islam,M. S. , Kader,M. G. , Uddin,M. K. and Ahmed,a. M. (2013) , " Analysis of order of singularity at a vertex in 3D transversely isotropic piezoelectric single-step bonded joints," **American Journal of Engineering Research (AJER)**, vol02, no.09, pp.87-99
4. (2012) , " Analysis of singularity at a vertex in 3D transversely isotropic piezoelectric single-step bonded joints with various thickness by boundary element method," **Journal of Solid Mechanics and Materials Engineering**, vol6, no.7, pp.844-85
3. (2012) , " Intensity of singularity analysis for three-dimensional two-phase transversely isotropic piezoelectric bonded joints," **Transaction on GIGAKU**, NUT, vol1, pp.01019/1-6
2. (2010) , " Characteristics of singular stress distribution at a vertex in transversely isotropic piezoelectric dissimilar material joints," **Journal of Solid Mechanics and Materials Engineering**, vol4, no.7, pp.1011-1026
1. Uddin,M. K. and Hossain,M. S. I. a. K. A. (2009) , " Effect of Reynold numbers on fluid flow and heat transfer characteristic over a rectangular

Conference

32. Alam,S. , Robbany,M. S. , Bari,M. A. A. and Islam,a. M. S. (22-24 December, 2022) , "Three Stage Carbonisation: Biochar Production from Jute Stick," **7th International Conference on Mechanical, Industrial and Energy Engineering** , Faculty of Mechanical Engineering, pp.2022-095
31. Sarker,R. ,Islam,P. D. M. S. and Somadder,a. S. (25-27 June 2022) , "Numerical Investigation of Stress Field Near the Vertex of a 3D Three Layer Piezoelectric Bonded Joint," **International Conference on Mechanical, Manufacturing and Process Engineering** (ICMMPPE - 2022) , Faculty of Mechanical Engineering, DUET
30. Shahriar,M. S. ,Akhter,D. N. and Islam,D. M. S. (25-27 June 2022) , "Numerical Analysis of Displacement and Stress Field on a Femur Bone," **International Conference on Mechanical, Manufacturing and Process Engineering** (ICMMPPE - 2022) , Faculty of Mechanical Engineering, DUET
29. (22-23 January 2022) , "Design approach of an LTA system as aerostat for weather monitoring at a specific altitude," **Physics for Sustainable Development and Technology (ICPSDT-2022)** , Department of Physics, CUET
28. Hossain,M. J. and Islam,a. M. S. (11-13 December, 2019) , "Characteristic of Interlayer Thickness on Singular Stress Field in 3D Bonded Joint using FEM," **International Conference on Mechanical Engineering and Renewable Energy (ICMERE2019)** , Department of Mechanical Engineering, pp.177
27. Karua,P. and Islam,a. M. S. (11-13 December, 2019) , "Influence of the Roof of Car to Reduce Fuel Consumption," **International Conference on Mechanical Engineering and Renewable Energy (ICMERE2019)** , Department of Mechanical Engineering, pp.173
26. Morshed,M. and Rahman,M. S. I. a. M. Z. (25-27 January, 2019) , "Numerical Analysis of Singular Stress Field in 3D Isotropic Elastic Bi-material Joints using FEM," **International Conference on Engineering, Research, Innovation and Education (ICERIE, 2019)** , School of Applied Sciences and Technology, pp.ICERIE 027
25. (23-24 December, 2018) , "Influence of Interlayer Thickness on the Singular Stress Field in 3D Three- Layered Bonded Joints using FEM," **5th International Conference on Mechanical, Industrial and Energy Engineering** , Faculty of Mechanical Engineering, pp.2018-330
24. Rana,M. and Islam,a. M. S. (23-24 December, 2018) , "Designing Approach of Blimp for a Hybrid VTOL Aerial Robot," **5th International Conference on Mechanical, Industrial and Energy Engineering** , Faculty of Mechanical Engineering, pp.2018-315
23. (23-24 December, 2018) , "Investigation of Different Mechanical Properties on Various Hybrid Natural Fiber Based Polymer Composites," **5th International Conference on Mechanical, Industrial and Energy Engineering** , Faculty of Mechanical Engineering, pp.2018-278
22. (23-24 December, 2018) , "Study on Bio-Fertilizer Extraction and Management of Municipal Solid Waste of Khulna City," **5th International Conference on Mechanical, Industrial and Energy Engineering** , Faculty of Mechanical Engineering, pp.2018-170
21. (18-20 December, 2017) , "Characteristic of Stress Distribution at a Vertex in Orthotropic Piezo-ceramic Bi-material Bonded Joints," **International Conference on Mechanical Engineering and Renewable Energy (ICMERE2017)** , Department of Mechanical Engineering, pp. 065
20. (26-27 December, 2016) , "Stress Analysis in 3D Two-phase Transversely Isotropic Piezo-ceramic Bi-material using BEM ," **4th International Conference on Mechanical, Industrial & Energy Engineering (ICMIEE 2016)** , Faculty of Mechanical Engineering, pp.160375
19. Hasan,M. S. and Islam,M. S. (26-27 December, 2016) , "Investigation of Stress Field Responsible for Debonding of Transversely Isotropic Elastic Bimaterial Joint by FEM," **4th International Conference on Mechanical, Industrial & Energy Engineering (ICMIEE 2016)** , Faculty of Mechanical Engineering, pp.160289
18. Mamun,A. H. M. A. A. and Islam,M. S. (26-27 December, 2016) , "Numerical Investigation of Stress Field in Anisotropic Elastic Bonded Joints," **4th International Conference on Mechanical, Industrial & Energy Engineering (ICMIEE 2016)** , Faculty of Mechanical Engineering, pp.160238
17. Nasif,M. , Islam,M. S. , Shikder,I. and Ashif,M. (26-27 December, 2016) , "Investigation of Displacement and Stress Field in Elastic-Plastic Bi-material Single Step Bonded Joint," **4th International Conference on Mechanical, Industrial & Energy Engineering (ICMIEE 2016)** , Faculty of Mechanical Engineering, pp.160126
16. (18 - 20 December, 2015) , "Investigation of Displacement, Strain and Stress in Single Step Transversely Isotropic Elastic Bonded Joint," **International Conference on Mechanical Engineering** , ICME2015, pp.pp.046
15. (11-13 December, 2015) , "Feasibility Analysis of Eco-Friendly Municipal Waste Management in Khulna City," **International Conference on Mechanical, Industrial and Materials Engineering** , ICMIME2015, pp.ET-05
14. Islam,M. S. ,Kader,M. G. and Uddin,M. M. K. (20 - 21 June, 2014) , "Investigation of order of singularity in 3D two-phase transversely isotropic piezoelectric dissimilar joints by eigen analysis method," **International Conference on Mechanical Engineering 2013** , ICME BUET, pp.069
13. Islam,M. S. ,Ahmed,M. and Uddin,a. M. M. K. (13-15 February, 2014) , "Numerical Investigation of Singularity at a Vertex in 3D Transversely Isotropic Piezoelectric Bonded Joints by FEM," **1st International Conference on Electrical Information and Communication Technology (EICT 2013)** , 978-1-4799-2299-4/13/\$31.00 ©2013 IEEE, pp.256-273
12. (17-18 May, 2013) , "Analysis of Intensity of Singularity at a Vertex in 3D Transversely Isotropic Piezoelectric Bimaterial Joints by Boundary Element Method," **2nd IEEE International Conference of Informatics, Electronics & Vision (ICIEV 2013)**
11. (1-2 February, 2013) , "Analysis of Intensity of Singular Stress Fields in Three-dimensional Transversely Isotropic Piezoelectric Bonded Joints," **2nd International Conference on Mechanical, Industrial and Energy Engineering (ICMIEE 2012)**
10. (February 3-5, 2012) , "Stress Analysis for Three-Dimensional Two-Phase Transversely Isotropic Piezoelectric Bonded Joints," **The 1st International GIGAKU Conference in Nagaoka (IGCN)**
9. (September 25, 2010) , "Fundamental Solution of Three-Dimensional Two-Phase Transversely Isotropic Piezoelectric Bonded Joints," **13th Annual Peper Meet (APM)**
8. (March 9-10, 2010) , "Effect of Singularity at Vertex in Transversely Isotropic Piezoelectric Dissimilar Material Joints," **JSME 47th Hokuriku-Shinetsu Branch Conference**
7. (November 13-16, 2009) , "Characteristics of singular stress distribution at a vertex in transversely isotropic piezoelectric dissimilar material joints," **Asian Pacific Conference for Materials and Mechanics**
6. Islam,H. K. a. and Shahidul,M. (October 10-12, 2009) , "Order of Stress Singularity Analysis in 3D Transversely Isotropic Piezoelectric Bonded Joint by FEM," **JSME 22nd Computational Mechanics Conference**
5. (March 07, 2009) , "Stress Singularity Analysis of Three-Dimensional Transversely Isotropic Piezoelectric Bimaterial," **JSME 46th Hokuriku-Shinetsu Branch Conference**
4. Mashud,M. , Islam,M. S. , Ferdous,C. R. , Rahaman,M. and M.L.Rahman,K. H. M. (19-20 December, 2003) , "Wind Energy: Energy from Moving Air," **Published in seminar on the role of Renewable and Alternative Energy Sources for National Development**
3. Ferdous,C. , Islam,M. S. , Islam,M. and Rahman,M. A. A. M. (19-20 December, 2003) , "Solar Photovoltaic Technology And Bangladesh," **Published in seminar on the role of Renewable and Alternative Energy Sources for National Development**
2. Ali,M. S. , Islam,M. S. , Alam,M. A. and Mia,S. (19-20 December, 2003) , "Formation of Pollution from the Transports and Vehicles and the

Regulation Policy for Emission Control And Environmental Issue," **Published in seminar on the role of Renewable and Alternative Energy Sources for National Development**

1. Islam,M. M. , Khan,K. , Ali,D. M. N. and Islam,M. S. (19-20 December, 2003) , "An Investigation on the Raw Materials and Products of the Briquetting Machine," **Published in seminar on the role of Renewable and Alternative Energy Sources for National Development**