PROF. IR. DR. AHMAD KAMAL ARIFFIN MOHD IHSAN



BEng, PhD, PEng, FIMM, ADE, APLP. Field of Specialization: Computational Mechanics, Computational Methods. Reaseach Area: Computational Fracture & Fatigue, Computational Corrosion, Computational Solid & Powder Mechanics, Finite/Boundary/Discrete Element Methods/Parallel Computation, Uncertainty Analysis

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Education/Academic Qualification

Ph.D. in Mechanical Engineering University of Wales Swansea, U.K. **B.Eng in Mechanical Engineering** Universiti Kebangsaan Malaysia.

Administration

- Director, Center for Teaching and Curriculum Development, Universiti Kebangsaan Malaysia
- Chair, Centre for Integrated Design for Advanced
- Mechanical Systems Deputy Dean, Faculty of Engineering & Built Environment
- Head, Quality Management, Faculty of Engineering

Head, Dept of Mechanical & Materials Engr.

Coordinator, Mechanical Engineering Programme, UKM-UNITEK

Prize/Award

- Leibniz University Hannovar, Visiting Professor Liverpool John Moores University, Visiting Professor
- Apple Distinguished Educator (ADE), Apple Professional Learning Provider (APLP) Universiti Teknologi PETRONAS Guest Professor

Tokyo University of Science, Japan Guest

Professor

DAAD Germany Winter Semester Guest Professor UKM Quality Special Award

Professional Affiliation

P.Eng, Board of Engineers, Malaysia President & Founder, Malaysia Association for Computational Mechanics Fellow, Institute of Materials, Malaysia Member, International Association for **Computational Mechanics** Member, Institute of Engineers Malaysia

Teaching Experience

Advanced Solid Mechanics, Advanced Computational Methods, Nano-Mechanics and Materials, Probabilistic Structural Mechanics, Metallic Materials Selection, Finite Element Methods, Computational Methods, Mechanics of Materials, Engineering Design Graphics.

Research

- REliability and Safety Engineering and Technology for Large Maritime Engineering Systems (RESET).
- Reliability Formulation of Fatigue Life Assessment for Powder-Bed-Laser-Fused Materials.

Development of reliability analysis for mixed mode loading.

- Prediction of Fatigue Behaviour in Nanoscale-Structure
- Polarization Mechanism under Mechanical Loading for Corrosion Prevention.
- New Local-Global Overlay Formulation for Surface Crack Model.
- Boundary Element Analysis of Metal Corrosion using Polarisation Curve.
- Constitutive model and characterizations of fatigue fracture for multi scale structures.

Mechanical Joints reliability Assessment using Theory of Critical Distance.

Fatigue crack growth simulation and safety evaluation of pressure vessel of power plant. Inverse Analysis for Corrosion Detection Problem.

Prediction of Stochastic Fatigue Crack Using Probabilistic Method, Sciencefund.

Computer Aided Analysis of Free Piston Linear Generator Engine Development.

Development of Fatigue Life Criteria for Useful Life Prediction of Machine Components.

Publication

Journal (33 H-index, 5088 citations): more detail in https://goo.gl/7IK7K0 Selected paper below;

- L Abdullah, SSK Singh, S Abdullah, AH Azman, AK **Ariffin**, Fatigue Characterization Under Effective Strain Damage Model on Various Road Load Conditions, Journal of Failure Analysis and Prevention, 2023, 1-11.
- Mohamad Suffian, S Kamil, **AK Ariffin**, Uncertainty analysis of varied meshes of a finite MSZ element model using Monte Carlo simulation, International Journal of Structural Integrity, 2022, 13 (6), 907-921.
- U Bhardwaj, AP Teixeira, CG Soares, **AK Ariffin**, SS Singh, Evidence based risk analysis of fire and explosion accident scenarios in FPSOs, Reliability Engineering & System Safety, 2021, 215.
 - F Lamin, **AK Ariffin**, IF Mohamed, C Krutsuwan, Stress Flow Behaviour of AA2024 Under High-Pressure Torsion Deformation by Parametric Finite Element Analysis of Anvil Configuration, Journal of Failure Analysis and Prevention, 2021, 1-10.
 - M Ihsan, S Fonna, N Islami, AK Ariffin, Simulation of corrosion field measurement on reinforced concrete using BEM, Journal of Mechanical Engineering and Sciences, 2021, 15 (2), 8072-8081.

Consultancy Activities

Selected works are listed below.

- iPad for Teaching & Learning and Productivity. Analysis and Simulation of Metal Pallets, Shell Gas (M) Berhad.
- EIA Study on the Proposed Seremban-JB Double Track Train, KTM Berhad.
- Deformation Analysis of Internal and External Fixator, HUKM
- Testing and Finite Element Analysis of Carrier Shaft, Carrier Air-Cond. Sdn Bhd