Engr. Sajjad Ahmad

Department of Mechanical Engineering Faculty of Engineering and Technology International Islamic University Islamabad, Pakistan.

Contact No: +92334-5085683 E-mail: <u>sa.ahmad@iiu.edu.pk</u>



Education

PhD Mechanical Engineering, International Islamic University Islamabad, Pakistan.

Thesis Title: Modeling for damaged-based fatigue life assessment of steel wire ropes.

2007 | MS Nuclear Engineering, PIEAS, Nilore, Islamabad, Pakistan.

Theses Title: Effect of coolant to mainstream velocity and temperature ratios on film cooling of turbine blade.

2005 | B. Sc Mechanical Engineering, UET Peshawar KP Pakistan.

Project: Expert system of machine selection in manufacturing system.

Date of Birth

29th June 1983

Nationality

Pakistani

Academic Experience

October 2014 to date | Assistant Professor, International Islamic University Islamabad.

Teaching experience of different subjects:

- Engineering Drawing and Graphics
- Thermodynamics
- Fluid Mechanics-I
- Mechanics of Materials-I
- Mechanics of Material-II
- Applied Physics
- Math-I

Supervision of Final Year Projects (Under Graduate Students)

- Design of Heat Exchanger using ASME Codes
- Design and Fabrication of Vortex Hydro-turbine
- Design and Fabrication of Road Power Generation System
- Finite Element Analysis of Drawn Wire and Wire Rope
- Design and Fabrication of Wire Cut Machine
- Design and Fabrication of Water Tank Cleaner
- Numerical Analysis of Wire Rope using Different Meshing Techniques

Administrative Responsibilities

- Incharge Industrial Liaison (2015-2020)
 - o Arrange Internships for undergraduate students
 - Make tours for students to visit industries
 - o Collect feedback of students from employer

- Counseling students for professional career and selecting Final Year Project
- Inviting industries representatives at Open House of undergraduate students for commercial evaluation of projects
- Member of FET monitoring Committee (2015-2019)
 - Monitors the undergraduate student classes and their issues
 - Deals with the unfair means during examinations
- Advisor ASME Students Society (2018-2019)
 - Advise ASME students in arranging their events
 - Facilitating ASME students in arranging seminars and technical events

Research Publications

- 1. Khan, R., Jan, S., Amjad, M., Badshah, S., & Ahmad, S. (2017). Crack Closure and Fibre Bridging Contribution in The Stress ratio Effect on Delamination Growth Under Fatigue. Journal of Engineering and Applied Sciences, 36(1), 107-114.
- 2. Ahmad, S., Jan, S., Khan, R., Amjad, M., & Badshah, S. *Effect of Velocity and Temperature Ratios on the Film Cooling of Turbine Blades*.
- 3. Khan, R., Jan, S., Ahmad, S., Amjad, M., Badshah, S., & Ahmad, M. (2015). *Fractographical Investigation of the Delamination under Fatigue using Laser Confocal Electron Microscope*. International Journal of Scientific Engineering and Technology, 4(2), 120-122.
- Ahmad, S., Badshah, S., Ul Haq, I., Abdullah Malik, S., Amjad, M., & Nasir Tamin, M. (2019). Numerical Investigation of 1× 7 Steel Wire Strand under Fretting Fatigue Condition. Materials, 12(21), 3463.
- 5. Amjad, M., Rafai, A., Badshah, S., Khan, R. U., & Ahmad, S. (2018). Finite element analysis of the real life loadings on the ti-27nb hip bone implant. JOURNAL OF ENGINEERING AND APPLIED SCIENCES, 37(2), 15-20

Conferences

- Organizing member of 2nd Power Generation Systems and Renewable Energy Technologies 2015 (Pakistan).
- Organizing member of 3rd Power Generation Systems and Renewable Energy Technologies 2017 (Malaysia).
- Organizing member of 4th Power Generation Systems and Renewable Energy Technologies 2018 (Pakistan).

Conference Proceeding

- 1. Ahmad, S., Badshah, S., Abdulhamid, M. F., Kang, H. S., Kader, A. S., & Tamin, M. N. (2018). *Incremental fatigue damage simulation for reliability assessment of steel wire ropes under fretting fatigue conditions*. Safety and Reliability—Safe Societies in a Changing World, Proceedings of ESREL.Numerical Framework for Fatigue Life Prediction of Steel Wire Ropes Employing Damage-based Failure Models
- M. F. Abdulhamid, M. Kamarudin, H. S. Kang, A. S. Kader, M. N. Tamin, S. Ahmad and S. Badshah (2019). *Numerical Framework for Fatigue Life Prediction of Steel Wire Ropes Employing Damage-based Failure Models*. Proceedings of the 29th EUROPEAN SAFETY AND RELIABILITY CONFERENCE (ESREL 2019).
- 3. Jan, S., Badshah, S., Amjad, M., & Ahmad, S. (2019, August). Wake Modeling of Tidal Current Turbine Array. In *2019 International Conference on*

Power Generation Systems and Renewable Energy Technologies (*PGSRET*) (pp. 1-5). IEEE.

Industrial Experience

October 2009 – October 2014 | Senior Engineer, Pakistan Atomic Energy Commission

October 2007 – October 2009 | Junior Engineer, Pakistan Atomic Energy Commission

Highlight of Job responsibilities and achievements:

- Design of 500 TR chilled water system for underground facility
 - Distinguish feature of the design was use of Odor Removal Filters, HEPPA Filters, Nuclear Biological and chemical filters, over pressurization system and air vestibules.
 - Smoke ventilation in parking areas.
 - Plant room design and space allocation to all equipment like chillers, pumps, fans and AHU's.
- Design and selection of Air Conditioning equipment to achieve 10 % RH.
- Design of 3 x 50 TR of Direct Expansion system for underground facility
 - Distinguish feature includes use of VAV's to conserve energy inside the facility.
 - Use of fire dampers in each room.
- Installation of 110 TR Chilled Water System for underground facility
 - Supervision of Installation work of chilled water piping carried out through external contractors
 - Supervision of Installation of duct working carried out through external contractors
 - Supervision of Insulations and cladding works on piping and ducting carried out through external contractors
 - Supervision of equipment placing inside the plant room carried out through external contractors
- Preparation of tender documents, Bill of Quantities and comparative statements based on technical features for various projects.
- Procurement of equipment on tenders and spot purchases.

Affiliations

Pakistan Engineering Council (PEC), Registration Number MECH / 18980

Trainings / Workshops

- Two-week course on "Linear FEM Analysis on Ansys" in ICCC (Instrumentation Control and Computer Complex) Islamabad, Pakistan.
- Once week training on "Welding Technology for Engineers" from PWI (Pakistan Welding Institute)
- Two months training on REVIT MEP Software.
- One-week workshop on "In-service workshop for Senior Faculty Members of Universities"
- One-day course of "Project and Contract Management".
- 5 Days workshop on Faculty Skills Development
- 2 Days worskshop on Outcome based Education (OBE)
- 1 Day workshop on Application of Primavira

- 5 Days workshop on Curriculum Development
- 2 Days workshop on Outcome Based Education (OBE)

Skills

- Microsoft Office
- Autocad
- Revit MEP 2011
- ABAQUS
- Carrier HAP LOAD
- Fortran Language