PERSONNEL QUALIFICATIONS

Hamid Attaran | Associate III

EDUCATION

- Civil Aviation Technology College, Iran
  - Bachelor of Science, Aircraft Repair and Maintenance Engineering, 2002
- University Putra Malaysia
  - Master of Science, Aerospace Engineering, 2007
- University of Stuttgart
  - Master of Science, Computational Mechanics of Materials and Structures, 2010
- Dresden University of Technology
  - Doctor of Philosophy, Mechanical Engineering, 2017

PRACTICE AREAS

- Structural Analysis/ Computer Applications
- Structural Analysis
- Finite Element Analysis
- Fatigue and Fracture Analysis
- Computer Modeling

PROFESSIONAL AFFILIATIONS

- American Society of Mechanical Engineers

CONTACT

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EXPERIENCE

Hamid Attaran is engaged in the finite element modeling and analysis of structural systems of civil, structural, and mechanical engineering materials. He possesses more than ten years of experience generating and running complex finite element models using commercial finite element software, including ABAQUS. Fatigue and fracture analysis are also a part of his work's focus.

Dr. Attaran is highly skilled in conducting structural assessments of slewing rings and slew drives using finite element analysis (FEA). Slewing bearings—a type of rolling element bearing designed to minimize friction—have a range of industrial applications, including wind turbines and heavy machinery.

Dr. Attaran has conducted stress analysis of the slewing rings under operational and extreme loads, assessed bolted joints against failure criteria, evaluated the contact force and contact stress against the permissible contact force, and determined the widening of the seal gap in bearings under loads and misalignments of the raceways.

Dr. Attaran conducts structural assessment and evaluation projects, utilizing nonlinear finite element analysis and industry-specific design codes. His research experience includes the development of material models for polymer gels and theoretical and experimental aeroelastic analysis of composite flat plates. Before joining WJE, he held positions as an FEA analyst and structural analysis engineer in Germany and the United States.

REPRESENTATIVE PROJECTS

Structural Analysis/Computer Applications

- Minnesota Department of Transportation: Nonlinear finite element analysis of post-tensioning anchor system
- Design evaluation and limit load structural analysis of upstream thrust flange using nonlinear finite element analysis
- Detailed structural analysis of slewing ring bearings under extreme and operational loads using nonlinear finite element analysis' ring bearings to be used in one of the world's largest test benches *
- Assessment of bolt joints and structural components of blade and yaw bearings for onshore wind turbines *
- Strength analysis of newly designed brackets of manually operated steering columns using nonlinear finite element analysis *

Finite Element Analysis

- Generating, maintenance, and validation of complex finite element models for noise, vibration, and harshness; structural analysis of steering columns *
- Theoretical and experimental aeroelastic investigation of idealized composite flat wings using finite element analysis *

Fatigue and Fracture Analysis

- Fatigue and stress analysis of newly developed lightweight housing of slew drives *

Computer Modeling

- Development and implementation of a new computer model for stimuli-responsive polymer gels for the application of finger grippers *

** Indicates with previous firms*