

ASSAD ANIS

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EDUCATION

2007-2009 Masters of Science (MS) in Mechanical Engineering with distinction (1st Position) from Lappeenranta University of Technology- Finland

Major: Structural and Machine Design (Thesis related to Applied Mechanics/Fatigue/FEA)

Minor: Production Technologies

1997-2001 Bachelor of Engineering (B.E) in Mechanical Engineering with 1st division from NED University of Engineering and Technology, Karachi, Pakistan

1994-1996 Intermediate Pre-Engineering with A-Grade (73%) from Government College For Men, Nazimabad, Karachi, Pakistan

1993-1994 Matriculation in Science with A-Grade (73%) from Little Folks Paradise Secondary School, Karachi, Pakistan

EXPERIENCE

Teaching Experience

April 2011 to date *NED University of Engineering & Technology- Karachi*

Working as Assistant Professor at the department of Automotive and Marine Engineering. Teaching courses of Stress Analysis, Strength of Materials and Mechanical Vibrations.

Working as Faculty advisor of Pakistan's first Formula Student Car project based on Monocoque light weight structure.

June 2010 to July 2011 *Dawood College of Engineering & Technology- Karachi*

Worked as visiting Lecturer at the department of Industrial engineering to teach courses of CAD/CAM and Strength of Materials to undergraduate students.

May 2008 to December 2008 *Lappeenranta University of Technology- Finland*

Worked as Lecturer to teach a course of Servo Control Engineering to International Masters Students of department of mechanical engineering. Also worked as International Coordinator at to help international master students.

May 2004 to March 2007 *SUPARCO Institute of Industrial Training (SIIT)*

Taught courses of Applied Thermodynamics (emphasis on turbo machineries) and Applied Mechanics to associate engineers at SUPARCO Institute of Industrial Training (SIIT) as Full time lecturer.

February 2003 to November 2003 *NED University of Engineering and Technology- Karachi*

Taught a course of Applied Thermodynamics to undergraduate students of department of mechanical engineering.

Industrial Experience

September 2010 to date *Pakistan Space & Upper Atmosphere Research Commission- SUPARCO*

Working with research industries to do projects related to pipe designing, structure designing, FEA of structures and dynamics.

September 2008-March 2009 *Rautaruukki Oyj- Finland & Laboratory of Fatigue & Strength, Lappeenranta University of Technology*

Worked as Researcher on MSc project titled, *assessment of factors affecting fatigue strength of cold formed members/ corners*. This project involved extensive investigations of notches and residual stresses in cold formed members using linear and non-linear FEA (ANSYS is used). Press-braking process is simulated and modeled in ANSYS to achieve numerical values of residual stresses in cold formed steel plates (made up of S355 and S650) of different r/t ratios. In order to investigate stress concentration factors, cold formed rectangular hollow tubes are modeled in ANSYS and linear FEA is performed.

May 2009-August 2009 *Lappeenranta University of Technology- Finland*

Worked as Laboratory Assistant under the supervision of Prof. Gary Marquis to do projects related to FEA of welded structures, fatigue design & Fracture Mechanics (ANSYS and ABAQUS is used).

November 2003-September 2010 *SUPARCO- Karachi- Pakistan*

Worked as Assistant Manager in Mechanical Design and Development section of Satellite Research and Development Centre Karachi (SRDC-K). I have been an active member of the division in making and preparation of PC-1 documentation during my job. Lead procurement team involved in purchase of mechanical equipments related to satellite manufacturing and integration.

July 2002-November 2003 *NED University of Engineering and Technology- Karachi*

Worked as Research Assistant at the department of mechanical engineering in the area of energy engineering. My work was to develop PEM Fuel Cell test station that has a capability of testing PEM fuel cells upto 1kW.

December 2001- June 2002 *Gani Spinning Mills, Nooriabad, Pakistan*

Worked as Shift Engineer on Gas Power Plant

May 2001- November 2001 *Gani Spinning Mills, Nooriabad, Pakistan*

Worked as Trainee Engineer on Gas Power Plant

MAJOR PROJECTS

Lappeenranta University of Technology- Finland

- Determination of Microstrains at inner corners of cold formed rectangular hollow sections using FEA (ANSYS is used).
- Dynamics Analysis of Crank Mechanism using ADAMS software
- Seminar on Diode Laser Welding Applications
- Bicycle Frame manufacturing using Product Design for Laser Welding
- Robotic Virtual Welding using AGIFAP software
- Did several projects involving fatigue and fracture mechanics at Laboratory of Fatigue & Strength during summer internship (Solid Works & ANSYS is used).

Pakistan Space & Upper Atmosphere Research Commission- SUPARCO

My major projects during service at SUPARCO are as follows:

- Design & Development Spherical Satellite Propellant Tank using Titanium (Ti-6Al-4V) material (Pro/E is used for CAD modeling).
- Design & Development of Satellite Pressurant Tank using Stainless Steel (Pro/E is used for CAD modeling).
- Finite Element Analysis of Propellant Tank (Stress Analysis, Girth Weld Analysis, Vibration Analysis) using ANSYS 10.
- Development & FEA of satellite pressure vessels using composite materials.
- Development of CAD Models of Pakistan Remote Sensing Satellite Systems using Pro/E.
- Structural Integration of prototype of Pakistan Remote Satellite System.
- Design & Development of Cold Gas Thrusters of 1N, 5N & 20N
- Design & Development of Static Bench for testing Thrusters (Pro/E is used for CAD modeling).
- Design & Development of Mini Reaction Wheel for satellite applications (Pro/E is used for CAD modeling).
- Design & Development of Cold Gas Propulsion System for Small Satellite (Pro/E is used for CAD modeling).
- Integration & Assembling of sub systems on satellite structure

NED University of Engineering and Technology, Karachi- Pakistan

- I had been awarded M.Engg by research assistantship from NED University of Engineering & Technology in July 2002 to work on the area of PEM Fuel Cells. I have developed Proton Exchange Membrane Fuel Cell Test Station that has a capability of testing PEM Fuel Cells upto 1kW.
- Designed Fish Processing Plant in the final year design engineering project with emphasis on the following areas:
 - Design of Conveyer Belt System
 - Design of Mechanized Washing System
 - Design of Refrigeration System for freezing compartment
 - Selection of Fans for freezing compartment

COMPUTER EXPERTISE

- International Certificate in AUTOCAD 2000 from Autodesk
- ADAMS
- Fluent 6.0
- CATIA
- Pro-E WildFire 2.0
- SolidWorks
- Ansys
- Matlab & Simulink
- C Language
- Proficient in MS Office
- AGIFAP (Finite Element Analysis)
- IGRIP (Virtual Welding)

VISITS & CONFERENCES

- Visited EADS Astrium-Toulouse-France facilities & hold technical session with EADS Astrium Technical Experts to discuss issues regarding Satellite mission & system requirements.
- Attended International Conference on "Mathematical Models & Methods in Fluid Mechanics" held at COMSATS Institute of Information Technology, Abbottabad, from June 23-27, 2003.

PUBLICATIONS

Book

- Fatigue Strength of Cold Formed Members, Autor: Assad Anis, ISBN: 978-3847336822.

Book Chapter

- Book chapter titled “Cold Gas Propulsion Systems – An ideal choice for remote sensing small satellites” in a book “Remote Sensing” published in March 2012, ISBN: 979-953-307-231-8, Edited by Dr. Boris Escalante UNAM, Facultad Ingeniería, División de Ing. Eléctrica, Mexico.

Papers

- Assad Anis, *Design & Development of Cold Gas Propulsion System for PRSS*, ICAST 2008, 2nd International Conference on Advances in Space Technologies, Islamabad, Pakistan, 29th – 30th November, 2008, IEEE, ISBN: 978-1-4244-3299-8, Page 49-53, November 2008.
- Assad Anis, Prediction of Residual Stresses in cold formed high strength structural steels using Finite Element Analysis, Manuscript accepted in International Journal of Applied Science and Engineering Research, Vol 3, Issue 3 ISSN: 2231-8844. (Available in September 2012)
- Assad Anis, “Investigation of Stress Concentration Factors in cold formed rectangular hollow steel tubes”, International Conference on Advanced Modeling and Simulation, 28-30th November 2011, Islamabad, Pakistan, ISBN:978-869-8535-11-7.
- Assad Anis, “A Finite Element Analysis Approach to predict the stress concentration factors in Cold Formed Corners”, Manuscript accepted for publication in International Journal of Mechanical & Mechatronics Engineering, IJMME-IJENS Vol:12, Issue: 04 ISSN: 2227-2771.
- Assad Anis, Determination of Micro-strains during distortion testing in cold formed members using Finite Element Analysis, Accepted for International conference Towards Better Pakistan to be held in September 2012.
- Assad Anis, “Simulation of Slider-Crank Mechanism using ADAMS software”. Manuscript accepted for publication in International Journal of Engineering & Technology IJET-IJENS, Vol: 12, Issue: 04, ISSN: 2227-2712.

Thesis

- Assessment of factors affecting fatigue strength of cold formed members/ corners. Master’s Thesis, Assad Anis, Laboratory of Fatigue & Strength, Lappeenranta University of Technology- Finland.
- Design of a Fish Processing Plant, Bachelor of Engineering project, Department of Mechanical Engineering, NED University of Engineering & Technology- Karachi- Pakistan

MEMBERSHIP

- Life time member of Pakistan Engineering Council.