Professional Summary

Dr.Waleed Khalil Ahmed

Engineering Requirements Unit
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Contact Information

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Qualifications

2002-2006	• **Ph.D. in Applied Mechanics (2002-2006).** Mechanical Engineering Department, College of Engineering, University of Mustanseriya-Iraq. My research is done in collaboration with the University of Nottingham-UK, School of Mechanics, Materials and Manufacturing Engineering under the memorandum of understanding between the University of Technology and the British Council in Baghdad. • **Thesis Title: Strengthening of Thin Walled Circular Steel Tubes by Composite Materials.** Supervisors: 1.Professr Wail N. Al-Refaie, University of Technology, Iraq. 2.Professor Christopher D. Rudd Vice chancellor, University of Nottingham, UK.
1997-2000	• **M.Sc. in Applied Mechanics** Mechanical Engineering Department University of Technology Iraq. **Thesis Title: Parametric Investigation of Cracked Pipes by Finite Element Method.** Supervisor: Professor Wail N. Al-Refaie, Building and Construction Engineering Department University of Technology, Iraq.
1988-1992	• **B.Sc. in General Mechanical Engineering.** Mechanical Engineering Department University of Baghdad, Iraq.

Academic Experience

Instructor 2009-upto date	Engineering Requirements Unit (ERU) Faculty of Engineering (FOE) United Arab Emirates University (UAEU)
Subject taught:	1.Engineering Practice and Entrepreneurship:GENG315 2.Engineering Materials Lab:MECH390 3.Differential Equations and Engineering Applications:MATH2210 4.Engineering Thermodynamic Lab:GNG220 5.Linear Algebra& Engineering Applications:MATH2220

	6.Freshman Lab:GENG250
Academic Assistant 2007 to 2009	College Requirements Unit (CRU) College of Engineering United Arab Emirates University (UAEU)
Subject taught:	1.Linear Algebra& Eng. Applications:MATH2220 2.Freshman Lab:GENG250 3.Engineering Materials Lab**:**MECH390 4.Engineering Design & Ethics. 5.Engineering Practice & Entrepreneurship:GENG315 6.Engineering Thermodynamic Lab:GNG220
Research Assistant 2006-2007	Mechanical Engineering Department College of Engineering United Arab Emirates University (UAEU)-UAE
Research Subject:	1. Particle Image Velocitymetry (PIV). 2. Localized Electrochemical Deposition (LECD). 3. Analyzing failure Nano-composite by FEM. Supervised by professor Yousef Haik, the head of the Mechanical Engineering Department.
Lecturer 2001-2006	Department of Materials Engineering. College of Engineering University of Al-Mustanseriya-Iraq
Subject taught:	1. Principle of Engineering Design and Stress Analysis 2.Mechanics of Materials 3. Programming
Teaching Assistant 1997-2001	Department of Mechanical Engineering University of Technology-Iraq
Subject taught:	The Principle of Engineering Machine Design.
Academic Experience in Technical Colleges and Molds Institutions-Adjunct Lecturer	
Lecturer 2000-2001	Department of Molds Engineering. The Technical Institute of Molds. Ministry of Industry-Iraq.
Subject taught:	1. Engineering Statics and Dynamics. 2. Design of Plastic molds. 3. Design of Cold forming Dies.
Lecturer 2001-2002	Department of Welding Engineering. Technical College of Engineering-Iraq.
Subject taught:	1. Mechanics of Materials. 2. Fundamental of Engineering Drawing. 3. Principle of Weldments Design.
Lecturer 2002-2003	Department of Molds Engineering. Technical College of Engineering-Iraq.
Subject taught:	1. Application to the Theory of Plasticity in Manufacturing processes. 2. Design of Cold forming Molds. 3. Engineering Drawing.

Industrial Experience	
1994-1997	**Head of Molds Manufacturing Workshop** Department of Molds Manufacturing Precision Casting Factory
Duties:	Supervise and control the manufacturing process of the wax prototypes Aluminum molds, wax pouring process, shell coating process, precision casting, and rotational rubber molding process.
1992-1994	**Engineer** Cold Forming Factory.
Duties:	• Coordinate the manufacturing process layout of the molds parts. • Assist the quality assurance process of the manufactured parts. • Control the production of injection Molds, compression molds, die casting molds, rubber molds, deep drawing, blanking and piercing molds, progressive molds. • Experience in the operation the following Machines: NC & CNC, jig boring, milling, drilling, grinding, wire cut, EDM, Facing, turning, presses and copy machines and etc,.
Consultations	
2001-2003	**Principal Consultant and Designer**
Duties:	Design and steer the manufacturing process and supervise the production of : 1-Furnaces for metals heat treatments, Electrical Bread furnaces, Double and single axel trailer and Water tank trailer. 2-Comprehensive stresses and finite element analysis of : Gantry crane 20 Ton, 20 meter span, Water intake structure. A contract of two years duration on the behalf of the FAO-Ministry of Industry through the University of Mustanseriya-Engineering Consulting Bureau.
International Certificates	
2011	MaterCam 2010 licensed programmer.
2010	Nondestructive Test of Materials(NDT) Inspector Level II-American Society - Nondestructive Test of Materials (ANST): 1. Magnetic Particles Inspection 2. X-Ray Radiographic Inspection 3. Ultrasonic Flaw Detection Method 4. Liquid Penetrate Inspection
ABET	
During my working in UAEU, I'm still involved in the preparing the course assessment file (CAF) which is related to ABET assessment activities of the following courses that usually I teach:	

1. Linear Algebra& Engineering Applications.
2. Freshman Lab.
3. Engineering Materials & Material Lab.
4. Differential Equations and Engineering Applications.
5. Engineering Practice & Entrepreneurship.
6. Engineering Thermodynamic.

Computer Skills

Professional in AutoCAD drawing (**since 1992**), Professional in Finite Element Simulation (10 years of Practical and Academic experience) Finite Element Analysis(ANSYS **since 2001**, SAP **since 1997**) Microsoft Visio. Lab View, MatLab and SIMULINK, Programming, Engineering Equation Solver (EES), Microsoft Windows & MS-DOS, Microsoft Excel, Microsoft Power Point, Microsoft Word. Professional user of Blackboard system. Mastercam 2010, Solidworks.

Undergraduate Graduate Projects Supervision

2008-2009	• Design a ship base using adhesively bonded hollow steel members to Reinforce Aluminum Plates. MEM 2-2,Mech.Dept.COE-UAEU
2004-2005	• Improving shear strength of polyester by fiberglass filler. • The flexural behavior of steel-fiberglass sandwich panel. • Confining steel pipes by fiberglass.
2005-2006	• The behavior of MDF-Fiberglass sandwich panel. • Strengthening of thin steel plate by fiberglass. • Using waste cardboard-Cement for production of thermally insulated brick. • Manufacturing of Wood Floor-Cement brick. • Manufacturing of Waste Cardboard-Gypsum board.

Current Researches

- Improving recycled PET properties.
- Investigating the failure of nanocomposite due to interfacial stresses.
- Virtual e-learning project for engineering course.

Publications

1. Wail N.Al-Rifaie**, W.Kh.Ahmed** '"**Parametric Study on The Effect of The Fiber Reinforced Polymer (FRP) Pad on The Stress Intensity Factor of A Cracked Pipe**", Engineering and Technology Journal, 1, 25, 2007.
2. **W.Kh.Ahmed**," **Improving The Flexural Stiffness of Bonded Beam by Composite Material**", Engineering and Development Journal.

2006

3. **W.Kh.Ahmed**,M.K.Aldoory and F.E.Gharib**, "Structural Behavior of Adhesively Bonded Steel Tube Structures Versus Their Welded Equivalent"**, 4th Jordanian Civil Engineering Conference JCEC 2006, Structural-Geotechnical Engineering and Construction Management, 10-13 April 2006 Amman and the Dead Sea, Jordan.
4. **W.Kh.Ahmed**,S.A.Shakir,"**The Influence of Nanoholes on the Interfacial Stresses in Discontinuous**

Nanofiber Composite", International Conference on Bio-Nanotechnology, ICBN 2006, November 18-21, 2006, Al-Ain, UAE.

5. **W.Kh.Ahmed**,C.D.Rudd, W.N.Al-Rifaie," **Using Composite Materials For Strengthening Thin Walled Steel Tubes"**, International Conference on Bio- Nanotechnology, ICBN 2006, November 18-21, 2006, Al-Ain, UAE.

2007

6. **W.Kh.Ahmed**,S.A.Hareb,Y.Haik, **"The Behavior of Nano-Composites with Nano-Circular Holes -Finite Element Analysis"**, The Eighth Annual U.A.E. University Research Conference, April-2007.

7. **W.Kh.Ahmed**, F.Kh.Omar,Y.Haik**,"The Effect of Nano-Circular Inclusion on the Interfacial Stresses of Nano-Composite,** First Sharjah International Conference on Nanotechnology and its Applications, Sharjah, UAE, 10-12 April, 2007, **Abstract Copyright:**(c) 2007: **American Institute of Physics. DOI:**10.1063/1.2776685, **Bibliographic Code:**2007AIPC..929...38A.

2008

8. **W.Kh.Ahmed**,S.A.Shakir,W.N.Al-Rifaie, "**USING FIBER REINFORCED POLYMER (FRP) FOR RESTORING DAMAGED PIPE WITH OUTER CIRCUMFERENTIAL SURFACE CRACK", 3rd** IMS International Conference for Applications of Traditional and High Performance Materials in Harsh Environments, School of Engineering American University of Sharjah**,** January 23 – 24, 2008**.**

9. **W.Kh.Ahmed**, C.D.Rudd, W.N.Al-Rifaie**"The Flexural Behavior of Hybrid Steel-Composite Tubes"**,**3rd** IMS International Conference for Applications of Traditional and High Performance Materials in Harsh Environments, School of Engineering American University of Sharjah**,** January 23 – 24, 2008**.**

10. **W.Kh.Ahmed**,F.Kh.Omar,Y.Haik**," Elucidating the Consequences of Nano-Inclusion Embedded in Nano-Composite"**, Knowledge Based Industries & Nanotechnology Conference, Doha – Qatar, February 11th – 12th, 2008 **(Invitation)**.

11. **W.Kh.Ahmed**,Ahmed AlAwar," **The FLEXURAL BEHAVIOR of ADHESIVELY BONDED and WELDED CORRUGATED STEEL SHEETS",** The Ninth Annual U.A.E. University Research Conference,April-2008.

2009

12. **W.Kh.Ahmed**,Ahmed AlAwar," **Flexural Behavior of Adhesively Bonded Stiffened Panel in Comparison with Welded One"**, The 10th Annual U.A.E. University Research Conference,April-2009.

13. **W.Kh.Ahmed, "Investigation the Effect of Nano-Inclusion Embedded in Nano-Composites",** International Workshop on Advanced Materials (IWAM-09),RAK-CAM,Feb.2009.

2010

14. **W.Kh.Ahmed**, Ahmed AlAwar **,"Mechanical Response of Steel Plate Strengthened by Adhesively Bonded Hollow Steel Tube",** The 11th Annual U.A.E. University Research Conference,April-2010.

2011

15. **W.Ahmed,** K.Harib**, "MATLAB/SIMULINK TO SOLVE MATHEMATICAL MODELS OF ENGINEERING SYSTEMS: CLASS ACTIVITY",** ICERI2011 (4th International Conference of Education, Research and Innovation) , Madrid –Spain, **14th, 15th and 16th of November, 2011.** ISBN: 978-84-615-3324-4.

2012

16. W.N.Al-Rifaie, O.M.Mahdi, **W.K.Ahmed**, **"Nano-Ferrocement Construction"**, International Workshop on Advanced Materials (IWAM) 2012, Ras Al Khaimah Center for Advanced Materials (RAK CAM), RAK, UAE, 19-21, Feb., 2012.

17. ,∗R.A. Al-Samarai **W.K.Ahmed**, H.K.R.Ahmad, Y.Al-Douri**,"Tribological property of nanoparticles WS_2 lubricants on aluminum-silicon alloy and carbon steels"**, International Workshop on Advanced Materials (IWAM) 2012, Ras Al Khaimah Center for Advanced Materials (RAK CAM), RAK, UAE, 19- 21, Feb., 2012.

18. **W.K.Ahmed**, Yarub Al-Douri, W.N.Al-Rifaie, **"The Impact of the Nano-fiber's Misalignment on the Interfacial Stresses of the Nano-Composite"**, International Workshop on Advanced Materials (IWAM) 2012,

Ras Al Khaimah Center for Advanced Materials (RAK CAM), RAK, UAE, 19- 21, Feb., 2012.

19. **Waleed Khalil Ahmed**, **"Wind Turbine: Mathematical Model of Mechanical System"**, "2nd International Conference on Renewable Energy: Generation and Applications" ICREGA'12 March 4-7, 2012, UAE.

20. **Waleed Khalil Ahmed**, **"MATLAB/ode45 for Differential Equations and Engineering Applications: Advantages and Disadvantages"**, Fourth International Conference on Mathematical Sciences, ICM2012, March 11-14, 2012, UAE.

21. **Waleed Khalil Ahmed**, **"Using MATLAB to solve Mathematical Models of Thermal Systems"**, 10th UAE Math 2012, AUS, UAE, April 14, 2012.

22.**W. K. Ahmed, A-H. I. Mourad, "Using Fiber Reinforced Polymer to Restore Deteriorated Structural Members"**, International Journal of Material and Mechanical Engineering, 2012,1,1-24 .

Duties severed in the Faculty of Engineering, UAEU since 2009

- Member in Quality Circle and Seminars Committee.
- Member in Assessment and Continuous Development Committee.
- Member in Teaching Development Committee.
- Member in seminars committee.
- ERU's Website Coordinator.
- ERU's Meetings Secretariat

Research Interest

1. Strengthening of deteriorated members by FRP.
2. Nano-composite failure.
3. Finite Element Analysis.
4. Fracture mechanics.
5. Adhesively bonded elements.
6. Recycling of materials.
7. Developing engineering mathematical models.
8. E-learning for engineering courses.

Member of committees and Reviewer

Technical Committee's member

- **International Conference on Internet, E-Learning & Education Technologies (ICIEET 2012),Dubai, UAE from September 23-24 , 2012. http://www.icieet.com/committee12.php**

Conferences' Reviewer

- **ICREGA2012 2nd "International Conference on Renewable Energy: Generation and Applications", March 4-7, 2012, Al Ain UAE. http://www.engg.uaeu.ac.ae/icrega12/**
- **IEEE International Conference on Power and Energy (PECON 2012) , Malaysia , 2 to 5 December 2012. http://www.ieeepecon.org/2012/**
- **IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA2012, Bandung, Indonesia,**

23 -26 September 2012. http://www.uitmrmi.org/isbeia2012/

- **ICL2012, International Conference Interactive Collaborative Learning, 26 - 28 September 2012, Villach, Austria. http://www.icl-conference.org/icl2012/**

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