

**Name: Eng. Omar Al Rifai****Rank: Senior Instructor - Mechanical Engineering****Personal Information**

Nationality:	Lebanese
AU Joining Date:	18 Aug 2019
E-Mail Address:	O.alrifai@au.edu.kw

Professional Information

Education:	Qualification: Masters Major: Mechanical engineering College/University: Florida State University Year: 2005/2006 Qualification: Bachelor's Major: Mechanical engineering College/University: Beirut Arab University Year: 2001/2002
Specialization:	• MILD combustion • Fluid mechanics • Thermal energy • Biomass renewable energy
Current Academic Position:	Senior Instructor- Mechanical Engineering
Current Professional Positions:	NA
Previous Administrative Position Held:	NA
Previous Academic Positions Held:	Instructor- Mechanical Engineering

Fellowships And Honors:	Research Assistantship
Teaching Experience:	• Senior Instructor of Mechanical Engineering, Australian University, Mishref, Kuwait, presently. • Led courses and provided instruction in mechanical engineering, ensuring a comprehensive understanding of core concepts and practical applications. • Material Laboratory Instructor, University of New Mexico, Fall 2006 • Conducted laboratory sessions for material science courses, guiding students through experiments and material testing processes. • General Chemistry Course Instructor, Florida State University, Spring 2006 • Taught introductory chemistry courses, focusing on fundamental principles and fostering student engagement in laboratory and theoretical learning.
Industrial And Technical Experience:	# Saudi Diyar Consultants, Saudi Arabia Title: Senior Mechanical Engineer Tenure: • Period 1: November 2012 – July 2019 • Period 2: May 2007 – July 2008 Key Responsibilities: • Supervised the installation, commissioning, and acceptance testing of mechanical systems. • Led advanced troubleshooting efforts for equipment commissioning and system alarms. • Reviewed and approved documentation for the first/second fix and commissioning phases. • Collaborated with third-party vendors to coordinate system activities. • Conducted regular audits to ensure optimal equipment performance and operational health. • Analyzed and resolved alarms with vendors, testing response times to enhance system performance and reliability. • Assessed and actioned material submittals, verified technical calculations and compiled detailed technical reports. #Saudi Oger Ltd., Saudi Arabia Title: HVAC Quality Engineer Tenure: October 2008 – October 2012 Key Responsibilities: • Developed and issued Inspection, Testing Plans (ITPs), and inspection checklists for mechanical activities. • Reviewed project-specific design drawings and identified technical details addressed to the design office.

	- Conducted audits to ensure installation and testing compliance with project specifications and international standards. - Issued Non-Conformance Reports (NCRs) to comply with quality standards. - Addressed customer complaints, providing solutions and recommendations within agreed timelines. - Collaborated with suppliers to resolve complaint issues by fine-tuning parameters, conducting indoor and lab testing, and modifying equipment.
Research Interest:	- Examining the composition of low-grade producer gas generated through different gasification techniques. - Characterizing Moderate to Intense Low Oxygen Dilution combustion - Utilizing biomass renewable resources for the generation of clean energy. - System optimization using a structured approach based on (DOE) for efficient analysis and evaluation of multiple factors to achieve optimal performance.
Research Grants:	NA
Research and Publications including Journal and Books:	BEng. Project: Predictive maintenance via developing a prototype of mechanical components such as pulleys, gears, and shafts. Intentional faults were introduced into the system and, therefore, detected and identified using specialized probes and analyzers. MSc. Research Experience (Jan 2004 – Apr 2006): Acquired hands-on expertise in the experimental operation of micro-pumps. Additionally, designed and manufactured scaled-up meso-pumps using 3000 FDM machining techniques and conducted comprehensive experiments on these prototypes. UNM Research: Conducted experiments to verify the uniformity of specific nano-paramagnetic particles in terms of geometry and physical properties. Utilized a Nano-Indenter machine to evaluate and assess their physical characteristics. #Journal Papers: - Al Rifai O, Al-attab KA, Enagi II, Mustafa KF, Mohamad AR. Optimization of MILD Chamber Design for Combustion of Producer Gas from Biomass Gasification. Green Technologies and Sustainability. 2025 May8: 100220 - Majed Al Sarheed¹, Ahmad Sedaghat^{1*}, Mahdi Ashtian Malayer², Hayder Salem¹, Seyed Amir Abbas Oloomi³, Wisam K. Hussam¹, Abeer Abdullah Al Anazi¹, Omar Al Rifai¹, "Experimental and Computational Study on Thermal Performance of Wood-Plastic Composites in Building Envelop", Journal of Porous Media, 2023. - Haik Y, Kilani M, Hendrix J, Rifai OA, Galambos P. Flow field analysis in a spiral viscous micropump. Microfluidics and Nanofluidics. 2007 Oct;3(5):527-35
Paper Presentations at Professional Conferences:	NA

College Service including committee Membership:	• Accreditation Committee Member, Mechanical Engineering, Australian University • Contributed to the accreditation process by ensuring program compliance with academic standards and quality assurance requirements within the mechanical engineering.
National Service:	Second Lieutenant , Lebanese Army (2002–2003) • Completed one year of military service, demonstrating leadership and discipline while fulfilling various responsibilities within the Lebanese Army.
College Committees:	NA