Interview with a Student:

Fahad Al-Ajmi
PhD in Chemical Engineering Program, College of Engineering - Qatar University

Qatar University's Department of Chemical Engineering is ranked among the top 151-200 according to QS World University Rankings. It conducts groundbreaking research in the fields of energy, water, gas processing, environment, nanomaterials, biochemical engineering, and sustainability. The Chemical Engineering Program is committed to the highest academic standards and is accredited by the Accreditation Board for Engineering and Technology (ABET). In this issue, we are pleased to meet the PhD student Fahad Al-Ajmi, who is enrolled in the Chemical Engineering Program at the College of Engineering, Qatar University.

Fahad, to begin with, could you introduce yourself and share with us your academic career?

First of all, I would like to thank Qatar University for allowing me to participate in this meaningful academic dialogue. My name is Fahd Dhafer Al-Ajmi, and I am currently occupying the position of Operations Support Manager at QatarEnergy LNG. At the same time, I continue my academic research in the field of chemical engineering. I started my academic career in Chemical Engineering at Doha University for Technology with a Diploma degree, where I was awarded the degree of the Excellent Student in academic attainment during the first foundation year. This motivated me to move to the UK to complete my bachelor's degree in the same field. During my studies, I was so interested in this field that I dug deeper and graduated with honors. I achieved the highest academic standing at the college level in Chemical Engineering.

After graduation, I continued to develop my knowledge through graduate studies at HBKU, where I pursued a master's degree specializing in Energy and Resources. I also participated in several projects, research, and academic activities that allowed me to apply my knowledge in real-world contexts.

What motivated you to choose Chemical Engineering specifically?

I chose to specialize in Chemical Engineering because it combines basic science with practical applications, allowing me to understand chemical and industrial processes on a large scale. Additionally, I joined QatarEnergy at the beginning of my career before pursuing my academic path, which reinforced my concept of operations and industry and the importance of chemical engineering in this sector. I was also interested in chemistry and mathematics from a young age and loved learning how raw materials are transformed into products that are useful in our daily lives.

Not limited to one area, chemical engineering offers diverse opportunities in various areas such as energy, pharmaceuticals, environment, and petrochemicals, which makes it a vital and impactful field. I was also driven by a desire to contribute to sustainable solutions and to improve industrial processes, making them more efficient and environmentally friendly. This aspiration is what motivated me to pursue this specialization

What is the topic of your PhD Dissertation?

My PhD Dissertation focuses on the development of LNG-associated water treatments using innovative and advanced technologies. The research aimed to treat and reuse the water associated with gas instead of pumping it into the ground due to the lack of innovative processes for treating this type of water and because such treatment is even more complex. This complexity arises from the large number of organic and non-organic substances that need specialized and appropriate processes to treat water and improve the efficiency of removing all impurities, such as organic pollutants, heavy metals, and bacteria. The research explores ways to sustainably reuse water.

What are your most important research achievements in the field of Chemical Engineering?

This PhD research is one of my most significant achievements. The importance of this research lies in providing more sustainable and cost-effective solutions for the treatment of LNG-associated water in Qatar and in the region where water resources are scarce. It also contributes to improving water quality in an environmentally friendly manner. Through this research, I aim to develop a technology that can be widely applied in water treatment plants, helping to solve some of the environmental challenges associated with water pollution.

You have experience in LNG plants and wells. Tell us about what you have learnt from this experience.

Yes, I have experience working in LNG plants and wells. I started my career from the year 2000 at QatarEnergy LNG to the present day, where I was responsible for various tasks in supervising the processing operations, including the separation of associated water and gases, converting them into sulfur, and monitoring the performance of liquefaction and storage systems.

Through this experience, I gained important skills such as understanding technical processes, optimizing efficiency and safety, managing

operational risks, and coordinating between different teams serving the industry. This experience enhanced my deep understanding of the LNG industry and made me more competent in dealing with its processes, challenges, and future requirements in improving industrial efficiency.

What are your future ambitions in this field, and how do you endeavor to serve Qatar?

Qatar is one of the largest manufacturers and exporters of LNG. The amount of water extracted and associated with natural gas requires innovative engineering solutions to reuse and balance water, the environment, and industrial processes at the same time. By conducting advanced scientific research, developing new technologies, and participating in major engineering projects, I seek to contribute to the development of more efficient, sustainable, and cost-effective technologies to improve water treatment processes to provide innovative environmental solutions.

In serving my country, I aspire to apply modern technologies to advance the industrial and energy sectors. Through this research, I aim to contribute to environmental sustainability and strengthen water security. This will accordingly contribute to achieving sustainable development that supports the national economy.

What advice would you give to your fellow students when choosing a master's or doctoral thesis?

When choosing a thesis topic, select one that genuinely excites your passion and interest—it's a long journey, and having strong motivation is essential to sustain your curiosity and commitment as you research and explore the subject in depth. It is also important to identify real-world research problems that have both scientific and practical value, ensuring that your work addresses a genuine issue and offers meaningful practical or academic applications. From there, it's important to assess the availability of resources necessary to conduct your research effectively, such as access to data, laboratories, and required technologies. Developing a clear and feasible research plan, under the guidance of a supportive supervisor who specializes in the same field, will greatly facilitate your progress and ensure you receive appropriate direction throughout the research process.

Ultimately, choosing a thesis topic is a crucial decision that can shape both your academic and professional path, so it should be made thoughtfully and with careful consideration of all relevant factors.