

## Research Objectives

Ahmad Ferdows "Hakime", Afghanistan, Electrical Engineering

As we all know that Energy is a synonym for life and aside from the security issues, my country's economy is badly impacted by the issues related to lack of Energy. And also I feel that today's energy importance and growing pollution is putting pressure on the organization to be more energy-efficient and reduce emissions. I want to participate in design & research that actively seeks such energy-efficient solutions.

Electrical Engineering has always held my interest because it is the actual process of creating and efficiently using energy. As an engineer, I have always had an avid interest in creating useful gadgets that facilitate daily processes. Combined with my love of constructing things from scratch and my interest in physics, I have greatly my studies in the field of electrical engineering. My undergraduate degree was in the subject and I focused on the Thermals subjects such as Fluid mechanics, solar energy, Turbomachinery... that would be more efficient for my country. I hope to continue my studies in electrical engineering in graduate school, which will prepare me to enter the industry with experience and knowledge.

My experience in the field has shown me that electrical engineering is more than simply construction. Thermal Engineering has fascinated my interest during my Bachelor Degree and concerning that, I had successfully designed and executed a no of projects such as focused on Renewable Energy. Working with materials engineers at my school, I created an Evacuated tube collector and a parabolic trough collector which focused on different methods to increase the efficiency of using solar energy. During my experience as an Electrical engineer in power plants shown me the efficiency of solar energy.

The focal point that pulled me more towards solar energy was when I participated in the First Electrical Engineering Conference held by the Ministry of Energy and Water in Kabul, Afghanistan. I was among the audience when the minister was inferring to Afghanistan's dependent on importing power from neighbors. Typically, the power cuts off regularly in winter because the power imported from Tajikistan, Uzbekistan, Iran, and Turkmenistan is supplied from their hydropower plants which shut down during winter due to cold weather. Based on the research that the minister was calling, on average Afghanistan owns 300 sunny days out of 365 days in a year. This provides a good opportunity to plant solar panels as a source of electricity for the long term and hence get rid

I have had experience in both the academic and industry aspects of the field and I hope to be able to combine my knowledge from my experience into a holistic understanding of engineering. I believe that graduate study in electrical engineering will provide me with the hands-on opportunities and the guidance I need to improve my engineering skills and pursue my goals of excelling in the industry.