

## STATEMENT OF PURPOSE

I pursued my Bachelor's degree from VIT University, Vellore, Tamil Nadu, India in Mechanical Engineering and then my Master of Science degree from University of Washington, Seattle, USA. I received "Riley Family Endowed Fellowship" in 2014-15. I am currently pursuing an MS degree in Energy Science and Engineering from IIT Bombay.

I want to become a professor and teach students about the various intricacies of mechanical engineering. I also want to do research. Being a professor at a reputed university will help me in many ways. First, teaching is a profession that I am attracted to and it is said that the most successful men take an interest in their jobs. Second, in the process of teaching, I will gain more in-depth knowledge of the subjects when faced with student's queries. It will enable me to do research work due to the various research labs and ongoing funded researches going on at the universities.

When I came across this advertisement for a PhD position, the real life application and the fact that it will help many people motivate me to learn more about the project. It is interesting to note that studying the hydrodynamics can help design better valves so that there is less risk of thromboembolism and thrombosis in patients. Since thermal and fluid sciences is my favourite in mechanical engineering, I feel that I can contribute to this project.

My project in the current MS degree is "Study and Design of a Heliostat Field for India". I had proposed modifications in the Genetic Algorithm for design of a heliostat field. Then I had proposed that various field parameters be studied for designing a heliostat field for Indian conditions.

During my Bachelor of Technology degree, I did an extra internship at Indian Institute of Technology Madras, Chennai, India on "Design of Improved Efficiency Solar Collectors". This project was about developing a solar collector which comprised a cavity collector and a parabolic reflector. I tried to theoretically design the collector along with the parabola so that sun's rays will be utilised at the maximum. The various dimensions were tried theoretically and the best dimensions were found. This project gave a better understanding of thermal sciences, solar energy and also doing research.

While in these projects, there were difficulties and I felt as if I have failed. But due to getting stuck, time and again, I got various ideas. I learned a valuable lesson that failure is a step towards successful endeavour. When the problems were solved, the “Eureka” moment was memorable.

Kinshuk Shekhar