

PERSONAL STATEMENT

This is Saba Mehsar Khan from India. I am highly willing to join this Project as it is related to Field of my Research Interest. Currently i am working as a Junior Research Fellow at INST Mohali-India and my work is on Fabrication & Characterization of FET & Sensors of 2-D materials. Basically, my project is making a Flexible Room Temperature based Bolometric sensor of reduced Graphene Oxide for Thermal imaging applications. Besides this project i have made FET of MoS₂ & Graphene and done their Characterization. In addition, I am exploring Characterization techniques like-AFM & SEM to enhance the capabilities of these techniques so that we can improved our device performance. This year i have attended a Science Festival for the Demonstration of rGO based Infrared Temperature sensor where i got to meet local public and come to know the difficulties they are facing to. They have suggested me many devices and sensors to fabricate, that time i have realized the actual problem they are going through. I want my research to apply in real time applications and contribute to the Science as well as technology development. To achieve this aim i need well settled lab facility. I believe that my serious research intention and knowledge in Physics and Mathematics will be beneficial for this Project and it will be a great opportunity for me to work with first class equipment under the guidance of Potential Supervisors.

I have developed a Non-Cryogenic Temperature Sensor of Reduced Graphene Oxide that can sense very small energy like Infrared radiations, the radiations that is coming out from our bodies to very high energy. It is still being improved to enhance the sensitivity and responsivity. In addition, I am trying to make a thermal imaging camera that will work at room temperature with the TCR value comparable to the current developed technology (Cryogenic sensors) so that we can reduce its cost and weight.

My reason for choosing Research field– During High School my Social Science teacher taught us about the world war and let us know that Japan is a victim of atomic bomb and does not have much natural resources but still comes in the queue of developed countries because of its Technology development. That day I came to know the power of Science and its effect on our lives. Science and Technology can make the human lives easier and better that's why I have chosen to go in the research field. Being a researcher, we have a great opportunity to invent some bigger and can serve this world as much as possible.

Basically, I belong to Physics background but in my Bachelors I have studied Physics, Chemistry & Mathematics up to two years and in the final year I have left with Physics & Mathematics only. So, I have the basic idea of all subjects, Physics, Chemistry & Mathematic. Having a good command on Mathematics, i have chosen Physics for Master study instead Mathematics because physics made me curious and compel to think about the natural phenomena.

It is my conviction that persistent hard work is most important key to success. I will only say that may be I am not intelligent enough for this position but I am a hard working person who can complete her job in a decent way while confronting with the hurdles. I would like to mention that as a researcher I have high hope from myself and strongly believe that I can contribute to our science community by making some new beneficial inventions.

I am hoping that it would be a very nice and valuable experience for me to work with the potential supervisors with first class equipment's in a nice & peaceful environment. As a researcher, we should have the exposers to various labs so that we can interact with the others intellectuality and learn from each other's. If I get my PhD degree in India then my knowledge will be limited by Indian's ways of doing research and then i could not be able to

exchange my ideas with the people of having different research approach. I strongly believe that if I get the chance to study here then I will get to learn many novel way to do research and try to convey my Knowledge as much as possible so that we can serve this planet's people.

