Statement of Purpose

Presently I am pursuing my Bachelors of Technology in Mechanical Engineering with honors from Indian Institute of Technology Ropar. With this statement of purpose, I intend to present my sincere thoughts about why I feel this research internship is apposite for me. In this ever-changing world of Engineering and Technology, each passing day makes the present advancement in science obsolete. I intend to contribute to this advancement by producing new scope of research in Mechanical Engineering as I have always been fascinated by this field and want to continue my academic pursuit in this field.

Right from my school days, I found myself fascinated by the intricacies of Mathematics and Physics, enjoyed those countless problem-solving sessions, which have enhanced my analytical and quantitative skills and have immensely helped me to acquire 90% in my 10th grade. There was no point in thinking about the subjects that I will be choosing in my high school and as I was determined to pursue Mechanical Engineering. My endurance and resilience towards academics helped me to outshine in my junior college as well with 92% combine in mathematics and science. I have always felt a strong need for the achievement, which has been the motivating force behind whatever I have achieved in my academic career. In all of my academic successes, my competitive spirit acted as a catalyst in me.

Given my dream to be an Engineer, pursing study in the engineering field was almost like a natural consequence. To study the programme, I had to overcome many hurdles, which I was able to do only due to my perseverance. My dream was to study in the most prestigious college of India which specializes in mechanical engineering for which I had to take a National level entrance examination (JEE Advance) which was taken by me alongside 1.3 million other students from all over the country. I passed the examination with flying colours, placed among the top 0.35% of all the students who had written the examination. I took up Mechanical Engineering in Indian Institute of Technology Ropar.

My undergraduate program has given me a wide and comprehensive exposure with a solid foundation to numerous courses that I found interesting- namely Material Science & Engineering, Material Characterization Techniques, Mechanics of Materials, Manufacturing with metallic materials, Machine Element Design, Manufacturing with metallic materials, Manufacturing with non-metallic materials and many more. In addition, I made concentrated effort in developing a strong ability in lab research as I strongly believe path breaking results can only be achieved through experimentation.

I took my study beyond just the four walls of my classroom keeping myself occupied with numerous industrial visits. There is this one particular industrial intern after which my interest in research was enhanced greatly. This happened when I visited the Research and Development department of Jyoti CNC automation Ltd. after the completion of my first academic year where I understood the importance of research in an industry and how necessary it is for any industry to improve and develop their product in this ever fast changing world. After this experience I felt to do something in my field and that is when I decided to approach a Professor for a research project in my second year. I managed to spend my time for this project along with my semester going on. I was so involved in the project that I decided to spend my twomonth summer holidays on this project which was like an adventure for me. During this two months I got a hands-on experience on how research happens in real life. The topic on which I did my research was to use recently developed solid state techniques know as Friction Stir Processing to form Surface composites of magnesium in order to increase its micro-hardness and decrease its corrosion so that it can be used as an acceptable biodegradable implant. The project was still underway at the end of my internship, so I was unable to write a paper on it; however, I am confident that my efforts will contribute to the final assessment. This experience helped me to get a closer look at the application of various aspects of the subject. I have enjoyed myself learning about the theory behind engineering applications, and I have also enjoyed the experiences I have had with experimentation and research. There is something extremely satisfying about performing an experiment oneself, analysing the data retrieved, and interpreting the results in a meaningful way.

This Project is a great opportunity for me to increase my knowledge and enhance my skills by carrying out an extensive research project in aforementioned topic. I am fully aware of the fact that pursuing this research project requires a high level of motivation, dedication and immense sacrifice. I am confident that I have the capability to contribute positively towards this project and to complete this project with the given time frame. This valuable experience and work culture that I can achieve from this project is of utmost importance for me as I intend to take research as a career.