

Statement of Research Interest

I am writing to express my interest in applying for the M.Tech in Biotechnology at Indian Institute of Technology (IIT), Kharagpur. I developed interest in the field of Biotechnology and life sciences long back, during my high school education, simply when I used to perform laboratory experiments in Biology and Chemistry. Owing to my inclination towards healthcare and belonging to an environment surrounded by researchers and scientists, I, Ahalya Shankor Das; stepped into the Department of Pharmaceutical Technology, Jadavpur University, India (2016 – 2020); where I pursued my Bachelors in Pharmaceutical Technology under the ICCR Scholarship, awarded by the Government of India. My main source of inspiration was my aunt, who was a Pharmaceutical Scientist in the United States. She passed away ten years ago after a terrific battle with fighting breast cancer. Her dedication towards her research projects instilled profound interest in me to follow her path. In 2017, during my Bachelor's degree, I also lost my mother, who was a victim of the same disease. Observing these sufferings closely I became both, emotionally and mentally attached to the field. Hence, I determined myself to do research in the field of Biotechnology and Immunology, which could relieve the suffering of people from such deadly diseases.

While I was doing my Bachelor's, the experience gained by me during the internships and research projects has drastically enhanced my interest in pursuing higher studies and research in the field of Biotechnology. During the 2nd year of my Undergraduate program, I had done a summer project at the NIPER, S.A.S Nagar, India. There, I was trained and received hands on experience on the use of advanced analytical instruments such as HPLC, GC and FTIR, for qualitative and quantitative analysis of pharmaceuticals. In the 3rd year of my Bachelor's, I was a part of two research projects conducted at CSIR-NML, India. In the first project I played an imperative role in the construction of a technique for the in-situ synthesis of Biomimetic Hydroxyapatite Nanocomposites, which have shown specific repairment properties for bone and teeth. In the second project titled "Study of pharmaceutical products using UV-Visible, FT-IR and Raman Spectroscopy", I analyzed the purity of three commercial drugs: Paracetamol, Amoxycillin and Cetrizine, using the standards as a reference. These research projects are the main cause which has motivated me and driven me towards doing research in the development of biopharmaceuticals.

On browsing through the courses offered by the Master's Program in Biotechnology at IIT Kharagpur, I feel they will effectively guide me towards my research goal and enhance my skills and competences in each aspect of the biotechnological field. Besides, the research work done here, in the Department of Biotechnology, IIT Kharagpur, by the scientists was what made me interested to apply for this program. The research done by Dr. Somedeb Bose Dasgupta, on the development of drug delivery strategies employing CRISPR/CAS9 genome editing to fight infectious diseases such as Tuberculosis and Visceral Leishmaniasis caught my interest. This is the sort of research I wish to be associated with, wherein I can implement my previous research experiences in formulation of delivery systems into practice along with gaining knowledge in genomic editing and related immunological perspectives. Apart from the research, the presence

of an aesthetic environment along with the exceptional global academic ranking of the university, is another factor which stands out among other universities from my personal perspective. Upon admission to this study program, I would deliver all my energy and takeover the challenges to excel in all the courses and projects, which I will be a part of. I envisage this program as the perfect stepping-stone to pursue my dreams and achieve my career goal of developing biotech drugs / biopharmaceuticals for immunotherapeutic purposes. I strongly believe that, given the opportunity, I will be able to make valuable contributions in these areas for the department and the University. On completion of the Master's program, I aspire to do a PhD in the same department as I see myself as a researcher in Biotechnology in the longer run. I feel IIT Kharagpur will offer me a wide range of career opportunities in terms of research, being one of the most recognized institutes all over India. I am ready and eagerly look forward to being a part of the program.