

Cover Letter

To whom it may concern,

I am writing this letter to express my interest in the PhD Fellowship-LifETIME CDT advertised on the Scholarshipdb website. According to my educational background and research experiences, I believe I am a well-qualified candidate for this role.

During my MSc degree, I worked on the performance evaluation of a bubble column bioreactor for the proliferation of encapsulated hematopoietic stem cell models under different oxygen concentrations. I designed and constructed a bioreactor as a dynamic system for cell proliferation and also gained valuable skills in cell viability assays and encapsulation of different types of cells in hybrid hydrogels such as alginate, gelatin, and gelatin methacrylate. As a part of my project, I have also been involved in collaborative work with xxxxxxxx Hospital, an affiliated hospital to xxxxxxxx University of Medical Sciences, Iran, which was a unique opportunity to get expertise in hematopoietic stem cell biology, isolation, collecting, and preparation of cord blood samples.

After my graduation, I was involved in a project funded by the Ministry of Health and Medical Education in the Stem Cell Research Center at xxxxxxxx University of Medical Sciences, Iran. This project was an experimental study on the role of microencapsulation in angiogenic behavior and molecular orientation of endothelial cells as well as the maturation of the human myelomonocytic cell line. It led me to learn how to prepare a three-dimensional (3D) environment to study cell proliferation, migration, and differentiation and also get expertise in immunofluorescence staining, histological staining, ELISA, qRT-PCR techniques, and *in vivo* studies. Besides, I learned how to independently perform projects as well as interpret my experimental data, writing my research articles (two papers as first author and three papers as co-author) and contributing to a wider research theme.

Recently, I have been working as a visiting researcher in the Bioengineering Department of xxxxxxxx University (Republic of Korea) with the main focus on bone tissue engineering. I have learned how to fabricate electrospun nanofibers and modify the surface of nanofibrous scaffolds using biomineralization, polyphenols, and 2D materials (such as graphene oxide and reduced graphene oxide) to improve their cellular response. However, my main focus has been laid on the preparation of cell spheroids with controllable size by using thermosensitive hydrogels as a modular building block for bone tissue regeneration. To improve the cell functionality, I have made engineered fragmented fibers as a carrier of bioactive molecules and incorporated them into the cell spheroids. I also gained expertise in characterizing instruments such as FTIR, SEM, contact angle, and fluorescence microscopy. As a part of the scientific community, I have participated in several reputable international conferences in the field of tissue engineering to not only socialize with my colleagues around the world but also have thought-provoking discussions regarding the current challenges and prospects in the area of my expertise. Additionally, I have contributed as a first author to an invited review article entitled "Article Title", which has been recently published in Nano Convergence Journal.

I firmly believe that I can transfer my experimental knowledge of cell biology, biomaterial fabrication, and tissue engineering to this job opportunity. This PhD position is appealing for several reasons. Firstly, I would like to share my knowledge and take the chance to provide a new perspective on the tissue engineering field and also extend my knowledge in this area. Secondly, being able to open up an area of personal research and expertise is a very attractive proposition, and finally, I will have the chance to work in an innovative and interdisciplinary environment.

I appreciate you for your kind consideration of my application and look forward to hearing back from you.

Kind Regards,

Full Name

