

# Fabrication of Silk-Gelatin Using Electrospinning Technique

Ajay Kumar Sahi

Banaras Hindu University, India

## Abstract

The Blindness due to cornea as the second major cause after cataract and allograft is the most common technique used to treat corneal blindness. The demand of high quality donor corneas is significantly higher compared to availability. To meet this scenario, Tissue Engineering (TE) has become an emerging field of interest in replacement of allograft. Tissue engineering approach deals with biodegradable or non-biodegradable scaffold with cells incorporated inside to mimic the scenario of Extracellular Matrix (ECM) inner environment of an organism and must have the ability to function as body organ temporarily. There researchers have proposed many approaches that could meet the elevating demand of cornea. These approaches could satisfy a few aspects but require more relevant approach to mimic the corneal architecture. The published reports show the importance of gelatin in terms of transparency and cellular biocompatibility; usage of electrospinning with respect to fibrous alignment and mechanical strength, and exploitation of silk as a transparent, biocompatible and mechanically strongest material. The scaffold was prepared using electrospun gelatin mat percolated with a certain ratio of silk fibroin. The scaffold was air dried and further characterized in terms of transparency, swelling and degradation, porosity, nanofibrous architecture and their functional groups. The results obtained depicts transparency approximately 70-80%, FTIR characterization confirms the presence of both biomaterials.

**Received Date:** July 5, 2022

**Accepted Date:** July 10, 2022

**Published Date:** July 28, 2022

## Biography

Ajay Kumar Sahi has completed his M.Tech from IIT Guwahati and currently pursuing his PhD from Indian Institute of Technology (Banaras Hindu University), Varanasi, India. His

research interest is oriented towards corneal tissue engineering. He has published more than 2 research papers in reputed journals and attended and presented his work in more than 5 conference proceedings.