

## Chitosan/Wollastonite composite scaffold preparation by freeze gelation method

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Tissue engineering offers an alternative technique to tissue transplantation for diseased or malfunctioned organs and donor tissue shortages. It includes three basic components like scaffolds, cells and growth factors and signals to create three-dimensional tissues. Scaffolds should be porous, biodegradable, biocompatible, non-toxic and easily colonized by cells. Scaffold architecture and its properties greatly influence the success of tissue engineering. The main aim of this work is to design composite scaffold using chitosan and wollastonite by freeze gelation method and their characterization.

Composite scaffolds are fabricated using chitosan, a

biodegradable polymer and wollastonite, an inorganic material by freeze gelation method. Thermally induced phase separation principle is involved in this method. It results in the production of isotropic, highly interconnected, and porosity-designed membranes. Addition of wollastonite enhances the bioactivity and mechanical strength of the composite scaffold. The porosity, crystallinity and pore size can be characterized using scanning electron microscopy (SEM), differential scanning calorimeter (DSC), Mercury porosimeter, and X-ray diffraction (XRD).

### Biography

U. Sindhu, is pursuing M.Tech, Biomedical engineering at National Institute of Technology Rourkela, Odisha. She has completed her B.Tech, Biotechnology from JNTU-H, Andhra Pradesh. She has presented a paper at "National Conference on Tissue Engineering: Prospects and Challenges" in NIT Rourkela.