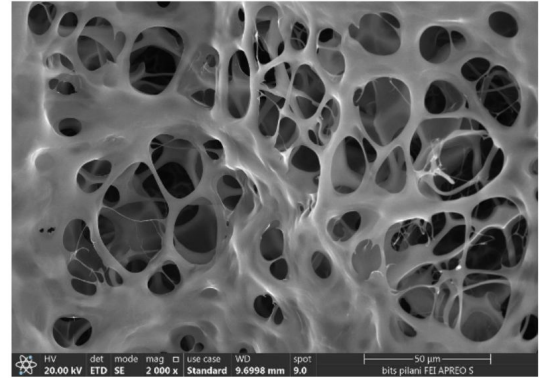


**GRANTED****(IN525160)**

## A porous scaffold composition for tissue regeneration and method of preparing the same



## NEED

Over 8 million patients each year suffer from delayed or failed tissue regeneration after injuries or surgeries. Current scaffolds show poor cell integration, leading to 60% implant rejection rates and prolonged recovery, increasing global healthcare burdens by over \$15B annually.

## TECHNOLOGY OVERVIEW

This invention introduces a porous scaffold composition made from a polyelectrolyte complex of chitosan, chondroitin sulfate, and hyaluronic acid. The scaffold forms spontaneously and allows full cell engraftment, supporting faster, more reliable tissue regeneration without chemical crosslinking or external processing steps.

## TECHNOLOGY KEY FEATURES

Self-forming scaffold with complete cell engraftment, using biopolymers chitosan, chondroitin sulfate, and hyaluronic acid, improving tissue regeneration reliability and biocompatibility, while eliminating complex fabrication and chemical treatments in regenerative medicine applications.

[Read more here](#)

## MARKET ANALYSIS

The global tissue engineering market is expected to reach \$37.9 billion by 2033, growing at a CAGR of 14.2%. Rising demand for regenerative therapies, organ failure cases, and biomaterials innovation are key drivers. [Source: Global Market Insights, 2024]

## Target Industries

Regenerative Medicine, Biomedical Engineering, Advanced Wound Care, Biomedical scaffold manufacturers, regenerative therapy R&D centers, biotech labs focused on cell-based therapies and implantable medical solutions.

## AT A GLANCE

- SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production)

Technology is available for licensing/ co-development.

Reach out to Prof. Deepak Chitkara, Coordinator, BITS Technology Enabling Centre,

BITS Pilani Contact Details: [tec.bits@pilani.bits-pilani.ac.in](mailto:tec.bits@pilani.bits-pilani.ac.in), 91 1596-255913