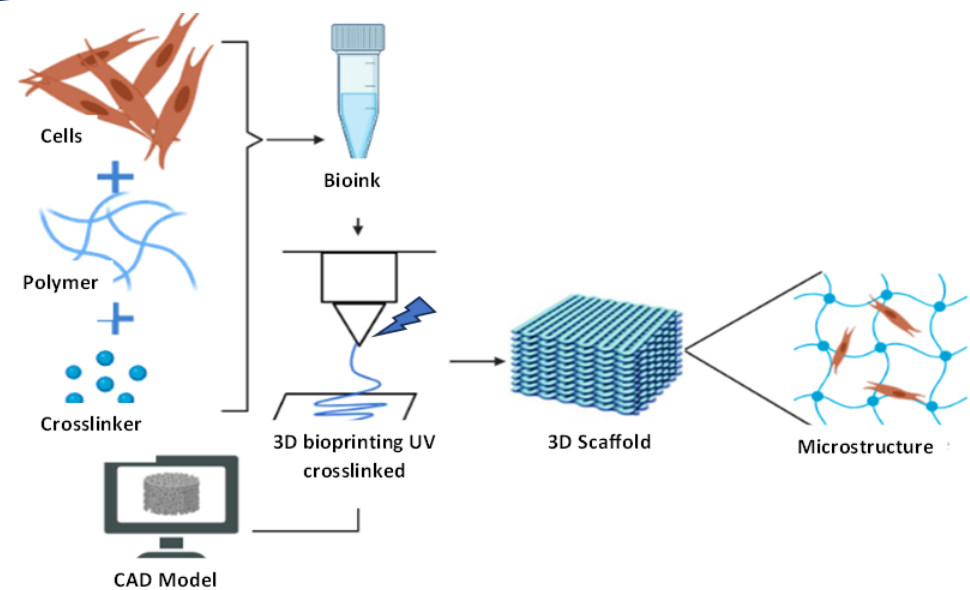


Development of Self-feeding hydrogel based bioink formulation for 3D bioprinting



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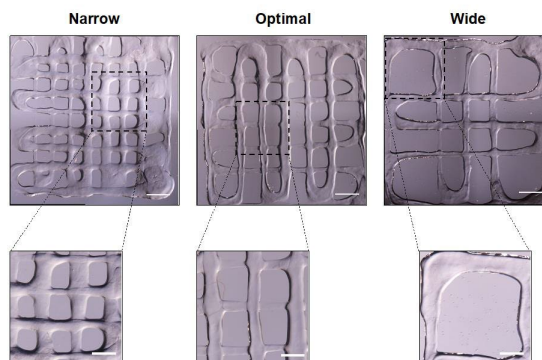
Diagrammatic Representation of work involved

Project Description:

The overall aim of the proposed work is to develop a “self-feeding” hydrogel and a bioink thereof for 3D cell culture and tissue engineering applications. “Self-feeding hydrogel”-The bulk of the hydrogel is made up of modified laminarin, a polysaccharide composed of glucan units in the chains. Laminarin hydrogel will not only be biodegradable by the action of an encapsulated enzyme but also its degradation will lead to the release of glucose which eventually will be a source of energy to the embedded cells. We are proposing 3D bioprinting of photocrosslinkable laminarin hydrogel modified with collagen mimicking peptides. For the six months duration, we have proposed two objectives in this project which will be achieved by several work elements as given below

1. Preparation of photo-crosslinkable self-feeding hydrogel conjugated with collagen mimicking peptide.
2. 3D Bioprinting of photo-crosslinkable self-feeding hydrogel conjugated with collagen mimicking peptide.

Products/ Instruments/ Results/ Outreach Activities



Name of the Funding Agency

Department of Science and Technology (DST)

Name of the Scheme

SERB International Research Experience (SIRE)

Sanctioned Amount (in Rupees)

Rs. 17,05,881

Duration of the Project (years)

1

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