

Chemical Engineering Thesis Defense

Preparations of 3D printed Bioactive Scaffolds for
Tissue Repair and Drug Delivery

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Abstract

Combining 3D bio-printing and drug delivery are promising techniques to fabricate scaffolds with well controlled and patient-specific structures for tissue engineering. In this study, we developed derivatives of silk bioink consisting of silk fibroin mixture then 3D printed into scaffolds. The scaffolds would be evaluated for small molecule release, cell growth, degradation, and morphology. Preparations and design of the scaffolds are major parts of engineering and tissue engineering. Scaffolds are designed to mimic extracellular matrix by providing structural support as well as promoting cell attachment and proliferation with minimum inflammation while degrading at a controlled rate. Scaffolds offers new potentials in medicine by aiding in the preparation of personalized and controlled release therapeutic systems.



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Zoom Link: <https://asu.zoom.us/j/3554380210>