

Special Issue on
**Biomedical Materials for Extracellular Matrix-Mimicking
3D Assemblies**

CALL FOR PAPERS

The extracellular matrix (ECM) is considered as the structural framework of human tissue architecture and plays an inherent role in maintaining biological function. The loss of this minimum essential structural medium via injury, degeneration, disease condition, or surgical intervention may not only affect the normal functioning of the tissue/organ but also diminish the effectiveness of therapeutic strategies applied to restore the lost function.

Over the years, tissue engineers and biomedical scientists have applied several strategies to fill and refill the ECM-devoid tissue defects through designing ECM-mimicking assemblies. These specialized assemblies require rational selection and complex composition of biomedical materials capable of complementing the morphological, chemical, biological, and mechanical characteristics of the native ECM consisting of the three Ps: peptides, proteins, and proteoglycans. This biomimicking is required to be done to such an extent that the tissue surrounding the implant recognises the artificial-ECM as natural tissue with no adverse immunological response and scar formation.

The search for an all-functional and all-inclusive ECM is still on and can potentially be achieved via two broad approaches: designing unique 3D assemblies using well-known biomedical materials and specialized fabrication techniques and synthesizing, functionalizing, and creating biomedical materials that are capable of self-assembling or fabrication into an ECM-mimic.

This special issue invites researchers to submit innovative research studies and comprehensive review articles.

Potential topics include but are not limited to the following:

- ▶ Implantable extracellular matrix-like materials
- ▶ Bioinks for 3D printing of artificial extracellular matrices
- ▶ Novel strategies to decellularize native ECM
- ▶ Functionalization of biomedical material archetypes employing peptides, proteins, and proteoglycans
- ▶ Multidimensional, electrospun, ECM network components
- ▶ Incorporation of ECM signals into and onto biomedical materials
- ▶ Cell-encapsulating and self-forming ECM matrices
- ▶ Polymeric hydrogel networks with biomechanical properties

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bmri/biomaterials/bmea/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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