

## Designing polymeric membranes for biomedical applications

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One of the current challenge of Tissue Engineering is to produce a new generation of polymeric membranes to mimic the extracellular matrix, generating an extensive network of cells. In this field, electrospinning and rotary jet spinning techniques are highlighted due to the possibility of control the membrane pore size, surface area, and fiber alignment. This research explores both processing techniques in order to obtain polyurethane membranes with different fiber morphologies to explore the mechanical properties and in vitro cells studies.

The implants characterization showed that the morphology and aligned of attachment cells influenced the cells viability, and also showed an appropriate mechanical strain capable to support cells attachment and proliferation. It was observed that adequate polymer microspheres structures with aligned architectures can promote cell proliferation and tissue repair mimicking the extracellular matrix

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