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Postdoc Research Activities

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Development of membranes for heparin removal devices

Currently I am working to contribute in the **research and development of an artificial kidney device**. The project involves the development of a **filter** for the removal of heparin, which is required during the dialysis treatment.

The device is composed of three main parts, a modified PES hydrophilic membrane that allows the removal of heparin, PVDF hydrophobic membranes that acts as venting and a polymeric housing. The studies comprise technology development, membrane production, as well as membrane surface modification devoted to produce an effective heparin filter device.

So far a vapor induced phase separation (VIPS) technology has been developed allowing the production of the PVDF and PES base membranes.

Current work

Current work deals with the membrane surface modification to activate the PES membranes in order to promote the removal of heparin. First trials showed promising results so that this project is expected to finish with the development of an effective heparin removal device that could be patented and commercialized.