

Synthesis and Characterisation of a Polysulfone-Polyvinyl Alcohol Hydrogelic Material

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Hydrogels are flexible materials that have found a niche in membrane science owing to their ability to absorb water without dissolving. The synthesis of polyvinyl alcohol-polysulfone hydrogel in the presence of *N*-hydroxy succinimide is presented herein. This hydrogel is characterised using FTIR spectroscopy, UV-visible spectroscopy, SEM and electrochemical techniques. The FTIR spectroscopic analysis shows that the hydrogel retains bonds that are related to both polysulfone and polyvinyl alcohol moieties. The new hydrogel displays a highly branched morphology with reduced pore size in comparison with polysulfone. The hydrogel also has a lower charge transfer resistance (R_{ct} : 12.065 k Ω) in comparison with the polysulfone (R_{ct} : 23.260 k Ω), which implies that the hydrogel is more conductive than the original polysulphone.

Keywords: hydrogel, polysulfone, polyvinyl alcohol, cross linker, *N*-hydroxyl succinimide

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