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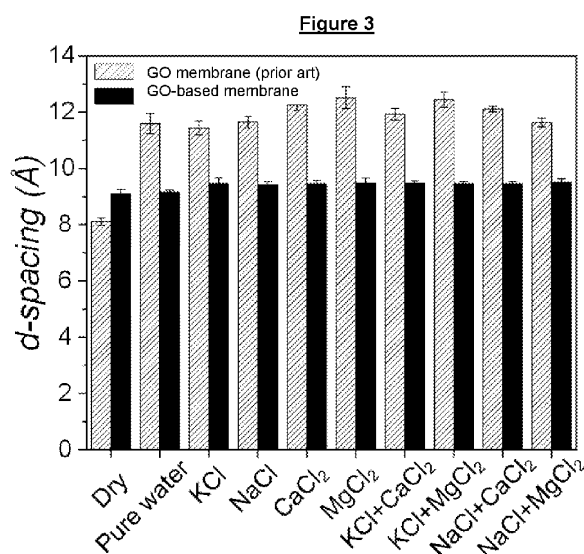
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(54) Title: A GRAPHENE OXIDE-BASED MEMBRANE



(57) Abstract: There is provided a graphene oxide-based membrane comprising a substrate and a plurality of layers of single-layered graphene oxide formed on the substrate, each of the plurality of layers of single-layered graphene oxide is functionalised by at least one diamine functional group, wherein interlayer spacing between two adjacent layers of single-layered graphene oxide is < 10 Å. In specific embodiments, the substrate is a porous carbon-based conductive substrate i.e. a carbon fibre substrate; and the diamine functional group includes methanedi-amine, ethylenediamine and p-phenylenediamine. The membrane may be comprised in an electrocapacitive unit for regenerative dialysis system. There is also provided a method of forming the membrane.

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