What is claimed is:

1. A filtration material for desalination, comprising:

a support layer; and

a desalination layer formed on the support layer, wherein the desalination layer is a fiber composite membrane and comprises at least one water-swellable polymer copolymerized of styrene sulfate, 4-vinyl pyridine, and styrene.

2. The filtration material ~~for desalination~~ as claimed in claim 1, wherein the support layer comprises one or more porous materials.

3. The filtration material as claimed in claim 2, wherein the porous materials comprise cellouse ester, polysulfone, polyacrylonitrile (PAN), polyvinglidence fluoride (PVDF), polyetheretherketone (PEK), polyester (PET), polyimide (PI), chlorinated polyvinyl chloride (PVC) or styrene acrylonitrile (SAN).

~~3~~4. The filtration material ~~for desalination~~ as claimed in claim 1, wherein the fiber composite membrane is in the form of a fiber with a binder, and the fiber comprises microfiber or nanofiber.

~~4. The filtration material for desalination as claimed in claim 2, wherein the porous materials comprise cellouse ester, polysulfone, polyacrylonitrile (PAN), polyvinglidene fluoride (PVDF), polyetheretherketone (PEK), polyester (PET), polyimide (PI), chlorinated polyvinyl chloride (PVC) or styrene acrylnitrile (SAN).~~

~~5. The filtration material for desalination as claimed in claim 1, wherein the water-swellable polymer is made of hydrophilic monomers and hydrophobic monomers, and the hydrophilic monomers comprise ionic monomers and non-ionic monomers, and the ionic monomers comprise cationic monomers and anionic monomers.~~

~~6. The filtration material for desalination as claimed in claim 5, wherein the cationic monomers comprise acryloxyethyltrimethyl ammonium chloride, acryloxyethyltrimethyl benzyl ammonium chloride, methacryloxyethyltrimethyl ammonium chloride, methacryloxyethyltrimethyl p-toluenesulfonate, methacryloyloxyethyl dimethylbenzyl ammonium chloride, dimethylaminoethyl acrylate, t-butylaminoethyl methacrylate,vinyl imidazole or vinyl pyridine.~~

~~7. The filtration material for desalination as claimed in claim 5, wherein the anionic monomers comprise acrylic acid, methacrylic acid, itaconic acid, beta-carboxyethyl acrylate, maleic anhydride or sodium salt thereof.~~

~~8. The filtration material for desalination as claimed in claim 5, wherein the non-ionic monomers comprise hydroxyethyl methacrylate, hydroxyethyl acrylate, hydroxypropyl acrylate, acrylamide, N-hydroxyethyl acrylamide or polyvinylpyrolidone.~~

~~9. The filtration material for desalination as claimed in claim 5, wherein the hydrophobic monomers comprise methyl acrylate,ethyl acrylate, butyl acrylate, 2-ethylhexyl acrylate, methyl methacrylate, t-butyl methacrylate, styrene or vinylidine fluoride.~~

~~10~~5. The filtration material ~~for desalination~~ as claimed in claim 1, wherein the water-swellable polymer ~~further~~ reacts with a cross-linking agent to conduct a cross-linking reaction.

~~11~~6. The filtration material ~~for desalination~~ as claimed in claim ~~10~~5, wherein the cross-linking agent comprises acid anhydride, epoxy, isocyanate, aminoplast resins, alkoxymethyl acrylamide, carbodiimide, aziridine or derivatives thereof.

~~12. The filtration material for desalination as claimed in claim 11, wherein the acid anhydride is cross-linked to a hydroxyl group of the water-swellable polymer.~~

~~13~~7. The filtration material ~~for desalination~~ as claimed in claim ~~11~~6, wherein the cross-linking agent comprises epoxy and the epoxy is cross-linked to a ~~carboxyl group, a~~ hydroxyl group~~,~~ or an amine group of the water-swellable polymer.

~~14~~8. The filtration material ~~for desalination~~ as claimed in claim ~~11~~6, wherein the cross-linking agent comprises isocyanate and the isocyanate is cross-linked to a hydroxyl group of the water-swellable polymer.

~~15~~9. The filtration material ~~for desalination~~ as claimed in claim ~~11~~6, wherein the cross-linking agent comprises aminoplast resins and the aminoplast resins are cross-linked to a hydroxyl group~~, a carboxyl group or an amide group~~ of the water-swellable polymer.

10. The filtration material as claimed in claim 6, wherein the cross-linking agent comprises acid anhydride and the acid anhydride is cross-linked to a hydroxyl group of the water-swellable polymer.

~~16~~11. The filtration material ~~for desalination~~ as claimed in claim ~~11~~6, wherein the cross-linking agent comprises alkoxymethyl acrylamide and the alkoxymethyl acrylamide is cross-linked to a hydroxyl group of the water-swellable polymer.

~~17. The filtration material for desalination as claimed in claim 11, wherein the carbodiimide or aziridine is cross-linked to a carboxyl group of the water-swellable polymer.~~

~~18~~12. The filtration material ~~for desalination~~ as claimed in claim ~~10~~5, wherein the cross-linking reaction ~~further~~ comprises an ionic cross-linking reaction.

~~19~~13. The filtration material ~~for desalination~~ as claimed in claim ~~18~~5, wherein a multi-chlorinated hydrocarbon is cross-linked to an amine group of the water-swellable polymer to form a quaternary ammonium salt.

~~20. The filtration material for desalination as claimed in claim 1, wherein the water-swellable polymer comprises polyvinyl alcohol, carboxymethyl cellulose or hydroxyethyl cellulose.~~