CLAIMS

What is claimed is:

1. A grafted polysulfone membrane comprising:
one or more monomers grafted onto one or more surfaces of the membrane, and benzophenone,
wherein the grafted polysulfone membrane has a water flow rate that is at least 75% of the water flow rate of an ungrafted polysulfone membrane.

2. The grafted polysulfone membrane of Claim 1, wherein the grafted monomer is an anionic monomer.

3. The grafted polysulfone membrane of Claim 1, wherein the grafted monomer is a cationic monomer.

4. A grafted polysulfone membrane comprising one or more monomers grafted onto one or more surfaces of the membrane, wherein the grafted polysulfone membrane has a water flow rate that is at least 75% of the water flow rate of an ungrafted polysulfone membrane, and wherein the grafted monomer is a cationic monomer comprising one or more of 2-(dimethylamino)ethyl hydrochloride acrylate, [2-(acryloyloxy)ethyl] trimethylammonium chloride, 2-aminoethyl methacrylate hydrochloride, N-(3-aminopropyl) methacrylate hydrochloride, 2-(dimethylamino)ethyl methacrylate hydrochloride, [3-(methacryloylamino)propyl]trimethylammonium chloride solution, [2-(methacryloyloxy)ethyl]trimethylammonium chloride, acrylamidopropyl trimethylammonium chloride, 2-aminoethyl methacrylamide hydrochloride, N-(2-aminoethyl) methacrylamide hydrochloride, N-(3-aminopropyl)-methacrylamide hydrochloride, diallyldimethylammonium chloride, allylamine hydrochloride, vinyl imidazolium hydrochloride, vinyl pyridinium hydrochloride, and vinyl benzyl trimethyl ammonium chloride.

5. The grafted polysulfone membrane of Claim 1 or 6, wherein the brittleness of the grafted polysulfone membrane in the machine direction is no greater than 130% of the brittleness of the ungrafted polysulfone membrane in the machine direction, the crossweb direction or both.

6. A method of making a grafted polysulfone membrane, comprising:

a) contacting the polysulfone membrane with an alcohol solution comprising benzophenone;

b) contacting the polysulfone membrane with an aqueous exchange solution;

c) contacting the polysulfone membrane with an aqueous grafting solution comprising:

i) an anionic or cationic monomer;

ii) sodium sulfate; and

iii) sodium persulfate; and

d) exposing the polysulfone membrane to electromagnetic radiation, thereby resulting in a grafted polysulfone membrane.