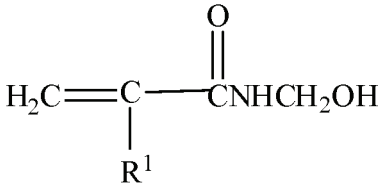
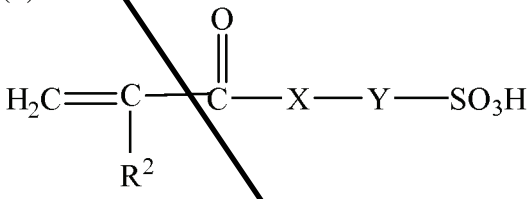
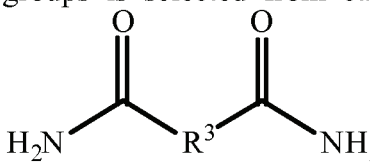
CLAIMS:

1. A method comprising copolymerizing a monomer comprising at least two amide groups, a monomer of formula (a)  , and a sulfonic acid or salt monomer, wherein R^1 is CH_3 or H.
2. The method of claim 1, wherein the sulfonic acid or salt monomer is of formula (b):

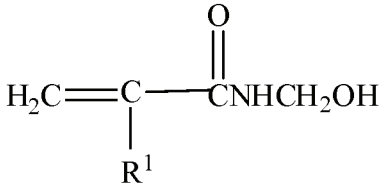


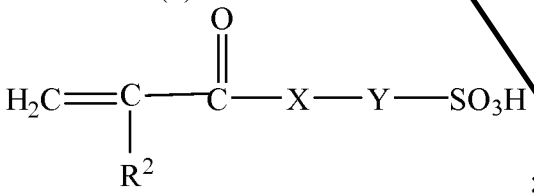
;

wherein
R^2 is CH_3 or H; X is NH or O and Y is alkyl.
3. The method of claim 2, wherein the sulfonic acid or salt monomer is 2-acrylamido-2-methylpropane sulfonic acid.
4. The method of claim 1, wherein the sulfonic acid or salt monomer is 2-acrylamido-2-methylpropanesulfonic acid, styrene sulfonic acid, sulfoalkyl (meth)-acrylates, sulfoalkyl itaconates, with a C_1 to C_6 alkyl radical, or vinylsulfonic acid and ammonium, alkali metal or alkaline earth metal salts thereof.
5. The method of claim 1, wherein the sulfonic acid or salt monomer is 2-acrylamido-2-methylpropanesulfonic acid, styrenesulfonic acid, p-styrenesulfonic acid, sulfopropyl acrylate, sulfopropyl itaconate or vinylsulfonic acid and ammonium, sodium, potassium and calcium salts thereof.
6. The method of claim 1, wherein the monomer of formula (a) is N-methylolacrylamide (N-(hydroxymethyl) acrylamide, NMA), N-methylolmethacrylamide (NMMA), N-(isobutoxymethyl)-acrylamide (IBMA), N-(isobutoxymethyl)-methacrylamide or N-(n-butoxymethyl)-acrylamide (NBMA).
7. The method of claim 1, wherein the monomer comprising at least two amide groups is selected from carbonyldiamine and a compound of formula (c)



, wherein R^3 is NH , aliphatic radical or ether unit.
8. The method of claim 1, wherein the monomer comprising at least two amide groups is selected from biuret and succinamide.
9. The method of claim 1, additionally comprising copolymerizing in the presence of a free radical initiator.

10. The method of claim 9, wherein the free radical initiator comprises ammonium or potassium persulphate, 2,2'-(azobis(2-methylpropionamidine) dihydrocloride, hydrogen peroxide, or potassium, sodium or ammonium peroxodiphosphate.
11. A polymer made by the method of claim 1.
12. A membrane comprising the polymer of claim 11.
13. A method for coating an electrode comprising:
providing an electrode;
providing a solution of a free radical initiator, a monomer comprising at least two amide groups, a monomer of formula (a)  and a sulfonic acid or salt monomer;
wetting the electrode with the solution; and
heating the wetted electrode;
whereby the monomer comprising at least two amide groups, the monomer of formula (a), and the sulfonic acid or salt monomer are copolymerized;
wherein
R^1 is CH_3 or H.
14. The method of claim 13, wherein the sulfonic acid or salt monomer is of formula (b):

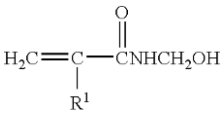


;
wherein R^2 is CH_3 or H; X is NH or O and Y is alkyl.
15. The method of claim 14, wherein the sulfonic acid or salt monomer is 2-acrylamido-2-methylpropane sulfonic acid.
16. The method of claim 13, wherein the sulfonic acid or salt monomer is p-styrene sulfonic acid.
17. The method of claim 13, wherein the monomer of formula (a) is N-(hydroxymethyl) acrylamide.
18. The method of claim 13, wherein the free radical initiator is 2,2'-(azobis(2-methylpropionamidine) dihydrocloride, ammonium persulphate, or potassium persulphate.
19. The method of claim 13, wherein the monomer comprising at least two amide groups is carbonyldiamine.
20. An electrode coated by the method of claim 13.

Claims

1. A method for coating an electrode comprising:
providing an electrode;

providing a solution of a free radical initiator, a monomer comprising at least two amide groups, a monomer of formula (a)



and a sulfonic acid or salt monomer;
wetting the electrode with the solution; and

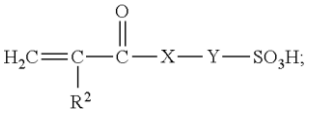
heating the wetted electrode;

whereby the monomer comprising at least two amide groups, the monomer of formula (a), and the sulfonic acid or salt monomer are copolymerized;

wherein

R^1 is CH_3 or H.

2. The method of claim 1, wherein the sulfonic acid or salt monomer is of formula (b):



wherein R is CH_3 or H; X is NH or O and Y is alkyl.

3. The method of claim 2, wherein the sulfonic acid or salt monomer is 2-acrylamido-2-methylpropane sulfonic acid.

4. The method of claim 1, wherein the sulfonic acid or salt monomer is p-styrene sulfonic acid.

5. The method of claim 1, wherein the monomer of formula (a) is N-(hydroxymethyl)acrylamide.

6. The method of claim 1, wherein the free radical initiator is 2,2′-(azobis(2-methylpropionamidine)dihydrocloride, ammonium persulphate, or potassium persulphate.

7. The method of claim 1, wherein the monomer comprising at least two amide groups is carbonyldiamine.

8. An electrode coated by the method of claim 1.