WHAT IS CLAIMED IS:

1. A method of preparing a composition, comprising the steps of:
(a) providing a mixture of carbon particles and a solvent and shearing the mixture to form a dispersion of the carbon particles in the solvent; and
(b) adding non-fribrillated poly(tetrafluoroethylene) to the dispersion to provide a resultant mixture and shearing the resultant mixture until at least a portion of the poly(tetrafluoroethylene) has been fribrillated.

2. The method of claim 1, being operated at room temperature.

3. The method of claim 1, being operated in 30 seconds to 10 minutes.

4. The method of claim 1, wherein a rate of shearing is 400-3500 rpm.

5. The method of claim 1, wherein the solvent is water.

6. The method of claim 1, wherein the solvent is ethanol.

7. The method of claim 1, wherein the mixture comprises conducting material.

8. The method of claim 7, wherein the composition comprises: 2-10% by dry weight of poly(tetrafluoroethylene); 0-30% by dry weight of conducting material; and 60-98% by dry weight of carbon particles.

9. The method of claim 8, wherein the conducting material comprises strongly acidic cation ion exchange resin.

10. The method of claim 8, wherein the conducting material comprises a strongly basic anion ion exchange resin.

11. The method of claim 8, wherein the conducting material comprises carbon black.

12. The method of claim 8, wherein the conducting material comprises graphite powder.

13. The method of claim 1, wherein the non-fribrillated poly(tetrafluoroethylene) is added portionwise.

14. A method of forming a sheet, comprising the steps of:
(a) providing a mixture of carbon particles and a solvent and shearing the mixture to form a dispersion of the carbon particles in the solvent;
(b) adding non-fibrillated poly(tetrafluoroethylene) to the dispersion to provide a resultant mixture and shearing the resultant mixture until at least a portion of the poly(tetrafluoroethylene) has been fibrillated; and
(c) processing the resultant mixture into a sheet.

15. The method of claim 14, wherein the resultant mixture is processed into the sheet by calendering.

16. A method of forming an electrode, comprising the steps of:
(a) providing a mixture of carbon particles and a solvent and shearing the mixture to form a dispersion of the carbon particles in the solvent;
(b) adding non-fibrillated poly(tetrafluoroethylene) to the dispersion to provide a resultant mixture and shearing the resultant mixture until at least a portion of the poly(tetrafluoroethylene) has been fibrillated;
(c) processing the resultant mixture into a sheet; and
(d) attaching the sheet to a current collector.

17. The method of claim 16, being operated at room temperature.

18. The method of claim 16, being operated in 30 seconds to 10 minutes.

19. The method of claim 16, wherein a rate of shearing is 400-3500 rpm.

20. The method of claim 16, wherein the solvent is water.

21. The method of claim 16, wherein the solvent is ethanol.

22. The method of claim 16, wherein the mixture comprises conducting material.

23. The method of claim 22, wherein resultant mixture comprises: 2-10% by dry weight of poly(tetrafluoroethylene); 0-30% by dry weight of conducting material; and 60-98% by dry weight of carbon particles.

24. The method of claim 23, wherein the conducting material comprises a strongly acidic cation ion exchange resin.

25. The method of claim 23, wherein the conducting material comprises a strongly basic anion ion exchange resin.

26. The method of claim 23, wherein the conducting material comprises carbon black.

27. The method of claim 23, wherein the conducting material comprises graphite powder.

28. The method of claim 23, wherein the solvent is water and a ratio by weight between the water and total of the PTFE, the conducting material and the carbon particles is 3:2 to 4:1.

29. The method of claim 16, wherein the non-fribrillated poly(tetrafluoroethylene) is added portionwise.

Claims:

1. A method of forming an electrode, comprising the steps of:

(a) providing a mixture of carbon particles and water and shearing the mixture to form a dispersion of the carbon particles in the water;

(b) adding non-fibrillated POLY(TETRAFLUOROETHYLENE) to the dispersion to provide a resultant mixture comprising 2-10% by dry weight of POLY(TETRAFLUOROETHYLENE), 0-30% by dry weight of a conducting material, and 60-98% by dry weight of carbon particles, wherein a ratio by weight between the water and a total of the POLY(TETRAFLUOROETHYLENE), the conducting material and the carbon particles in the resulting mixture is in a range of 3:2 to 4:1, and shearing the resultant mixture until at least a portion of the POLY(TETRAFLUOROETHYLENE) has been fibrillated;

(c) processing the resultant mixture into a sheet; and

(d) attaching the sheet to a current collector.

2. The method of claim 1, wherein the resultant mixture is processed into the sheet by calendering.

3. The method of claim 1, wherein each of steps (a) and (b) is operated at room temperature.

4. The method of claim 1, wherein each of steps (a) and (b) are collectively operated in 30 seconds to 10 minutes.

5. The method of claim 1, wherein a rate of shearing in each of steps (a) and (b) is 400-3500 rpm.

6. The method of claim 1, wherein the conducting material comprises a strongly acidic cation ion exchange resin.

7. The method of claim 1, wherein the conducting material comprises a strongly basic anion ion exchange resin.

8. The method of claim 1, wherein the conducting material comprises carbon black.

9. The method of claim 1, wherein the conducting material comprises graphite powder.

10. The method of claim 1, wherein the non-fribrillated POLY(TETRAFLUOROETHYLENE) is added portionwise.

11. The method of claim 1, wherein the carbon particles comprise activated carbon particles.