CLAIMS

1. A process for producing cellulose shaped articles in which:

a) cellulose is at least partly dissolved at a temperature of ~~about~~ 100°C or lower in a dope comprising an ionic liquid and a cosolvent to form a cellulose solution with a viscosity of 30000 centipoise or lower, wherein said cosolvent comprises a polar aprotic component, and

b) cellulose shaped articles are cast from the cellulose solution.

2. The process of Claim 1, wherein the shaped articles are fibres.

3. The process of Claim 1, wherein the shaped articles are ropes, yarns, cloths or cigarette filters.

4. The process of Claim 2, further comprising:

c) forming the cellulose fibres produced in step b) into an article.

5. The process of Claim 4, wherein the article is a rope, yarn, cloth or cigarette filter.

6. The process of any one of Claims 1 to 5, wherein the temperature of dissolution is ~~about~~ 90°C or lower.

7. The process of any one of Claims 1 to 6, wherein the temperature of dissolution is ~~about~~ 80°C or lower.

8. The process of any one of Claims 1 to 7, wherein the temperature of dissolution is ~~about~~ 70°C or lower.

9. The process of any one of Claims 1 to 8, wherein step a) and/or step b) are performed under ambient atmospheric conditions.

10. The process of any one of Claims 1 to 9, wherein the dope comprises ~~about~~ 50% or less ionic liquid by weight of the dope.

11. The process of any one of Claims 1 to 10, wherein the dope comprises ~~about~~ 20% or more ionic liquid by weight of the dope.

12. The process of any one of Claims 1 to 11, wherein the dope comprises between 20% and 50% ionic liquid by weight of the dope.

13. The process of any one of Claims 1 to 12, wherein the dope comprises ~~about~~ 25 to ~~about~~ 45% ionic liquid by weight of the dope.

14. The process of any one of Claims 1 to 13, wherein the dope comprises ~~about~~ 25 to ~~about~~ 40% ionic liquid by weight of the dope.

15. The process of any one of Claims 1 to 14, wherein the dope comprises ~~about~~ 25 to ~~about~~ 35% ionic liquid by weight of the dope.

16. The process of any one of Claims 1 to 15, wherein the cellulose and the polar aprotic component are pre-mixed prior to formation of the dope.

17. The process of any one of Claims 1 to 16, wherein the cosolvent consists exclusively ~~or essentially~~ of the polar aprotic component.

18. The process of any one of Claims 1 to 17, wherein the polar aprotic component is selected from the group consisting of dimethyl sulfoxide (DMSO), tetrahydrofuran (THF), dimethylacetamide (DMAc), dimethylformamide (DMF), formamide, N-methylmorpholineoxide, pyridine, acetone, dioxane, N-methylpyrrolidone, piperyline sulfone and hexamethylphosphoramide or mixtures thereof.

19. The process of any one of Claims 1 to 18, wherein the dope comprises a base.

20. The process of Claim 19, wherein the base is a nitrogen containing base.

21. The process of Claim 19 or 20, wherein the base is selected from the group consisting of pyridine, ammonia, piperidine, morpholine, diethanolamine or triethanolamine, pyridine, triethylamine, urea or mixtures thereof.

22. The process of any one of Claims 19 to 21, wherein the base is present in an amount of 1 to 10% by weight of the dope.

23. The process of any one of Claims 19 to 22, wherein the base is present in an amount of 3 to 8% by weight of the dope.

24. The process of any one of Claims 1 to 23, wherein the ionic liquid is selected from the group consisting of 1-ethyl-3-methyl imidazolium chloride, 1-ethyl-3-methyl imidazolium acetate (EMIM acetate), 1-butyl-3-methyl imidazolium chloride, 1-allyl-3-methyl imidazolium chloride, zinc chloride/choline chloride, 3-methyl-N-butyl-pyridinium chloride, benzyldimethyl (tetradecyl) ammonium chloride, 1-methylimidazolehydrochloride or mixtures thereof.

25. The process of any one of Claims 1 to 24, wherein the cellulose solution has a viscosity of ~~about~~ 5000 to ~~about~~ 12000 centipoise.

26. The process of any one of Claims 1 to 25, wherein the degree of polymerisation of the cellulose is ~~about~~ 500 or lower.

27. The process of any one of Claims 1 to 26, wherein the degree of polymerisation of the cellulose is ~~about~~ 400 or lower.

28. The process of any one of Claims 1 to 27, wherein the cellulose solution comprises ~~about~~ 1 to ~~about~~ 20% cellulose by weight of the cellulose solution.

29. The process of any one of Claims 1 to 28, wherein the cellulose solution comprises ~~about~~ 5 to 15% cellulose by weight of the cellulose solution.

30. The process of any one of Claims 1 to 29, wherein the cellulose solution comprises ~~about~~ 8 to 12% cellulose by weight of the cellulose solution.

31. The process of any one of Claims 1 to 30, wherein the cellulose solution is filtered prior to step b).

32. The process of any one of Claims 1 to 31, wherein the cellulose solution obtained in step a) is shaped prior to step b).

33. The process of any one of Claims 1 to 32 wherein step b) comprises contacting the cellulose solution with a first casting solution comprising a non-solvent to produce regenerated cellulose shaped articles.

34. The process of Claim 33, wherein the non-solvent is water.

35. The process of Claim 33 or 34, wherein the first casting solution is maintained at a temperature of 60°C or lower.

36. The process of any one of Claims 33 to 35, wherein the first casting solution is maintained at a temperature of 35°C or lower.

37. The process of any one of Claims 33 to 36, wherein the first casting solution comprises ~~about~~ 70% or higher of non-solvent by weight of the first casting solution.

38. The process of any one of Claims 33 to 37, wherein the first casting solution comprises a dope mixture comprising ionic liquid and a cosolvent, the cosolvent comprising a polar aprotic component.

39. The process of Claim 38, wherein the dope mixture has essentially the same composition as the dope in which cellulose is at least partly dissolved in step a) of Claim 1.

40. The process of any one of Claims 33 to 39, wherein the regenerated cellulose shaped articles are removed from the first casting solution and contacted with a second casting solution, said second casting solution comprising a higher proportion of non-solvent than said first casting solution.

41. The process of any one of Claims 33 to 40, wherein the proportion of non-solvent present in the first and second casting solutions is maintained by the provision of a countercurrent flow of non-solvent to the first and second casting solutions.