# United States Patent [19]

**Cuculo et al.**

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[54] **ANISOTROPIC CELLULOSE SOLUTIONS, FIBERS, AND FILMS FORMED THEREFROM**


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[52] **U.S. Cl.** .......... **106/203;** 106/163.1; 264/187

[58] **Field of Search** .......... 106/163.1, 194, 203



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[57] **ABSTRACT**

Lyotropic mesophase (liquid crystalline) solutions of cellulose are formed in an ammonia/ammonium thiocyanate solvent. The nature of the solution can be controlled to selectively produce lyotropic cellulose mesophases having either nematic or cholesteric character. High strength, high modulus fibers are produced from a lyotropic mesophase solution of cellulose essentially in the nematic phase. The films are prepared from mesophase solutions of cellulose that are mainly in the cholesteric phase.


**5 Claims, 5 Drawing Sheets**

Minimum cellulose concentration, Cp, for mesophase formation as determined by solvent composition : cellulose Dp, 210; storage time at 25°C, 30 days.