Study on the process and characterization for the production of thin film from direct soluble cellulose

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ABSTRACT

With the past twenty years, considerable effort has been directed toward finding simple, nonderivatizing solvents for cellulose. It is anticipated that this will lead to new cellulosic products of improved properties. Several broad reviews of cellulose solvents have been previously published. However, we are particularly interested in those that have been proven to dissolved cellulose without formation of a derivative during dissolution. The NMMO/H2O system has been given the greatest attention. The cellulose products from NMMO/H2O are known as Lyocell which has been claimed as green product for twenty-first century. In this report, we are concentrated on the study of those interaction behavior between cellulose and solvent. Preferably, most of the result were obtained on the NMMO/H2O solvent system.According to the studies, an improved method of making cellulose dope made up of NMMO/H2O solvents with added sodium hydroxide and other additives. Also, we had reach a 18.23 wt.%cellulose in drop, which may show a liquid crystalline behavior. The cost and efficiency of cellulose direct solvent system were calculated from the recovery of solvent. These results showed a 99%solvent recovery which could make a commercialized film process possibly in the future.

Keywords : 纖維素 ; 液晶 ; 氧化甲基瑪琳 ; 溶劑法 ; 黏膠法

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