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Electrospinning of Natural Polymers[1] AIHUA HE, Institute of Chemistry, Chinese Academy of Sciences, SHANSHAN XU, HUARONG NIE, JUNXING LI, CHARLES C. HAN, STATE KEY LAB OF POLYMER PHYSICS AND CHEMSITRY, INSTITUTE OF CHEMISTRY, CHINESE ACADEMY OF SCIENCES TEAM — Electrospinning is an effective and simple method to fabricate polymer fibers in the range of nano scale. However, electrospinning of natural polymers is a challenge. The key reason for this problem is that natural polymers have very different chain conformation and hydrodynamic responses in solution, especially in aqueous solution, when compared with synthesized polymers. The objective of our study is to find the key parameters in order to have a good control in the electrospinning process. We studied the electrospinnings of gelatin from its aqueous solution, of hyluronic acid without airblowing, and of pure alginate. It was found that electrospinning of those natural-polymer solutions could be successfully carried out when key parameters were properly adjusted, such as viscosity, elasticity (chain entanglement) and sufrace tension.

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