CHAPTER

12

Electrospinning process for green polymeric nanomaterials

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12.1 Introduction

Nanomaterials are materials with one of their dimensions in the nanoscale, typically in the range of 1−100 nm. Nanomaterials are one of the many branches of nanotechnology. The United States National Nanotechnology Initiative defines "nanotechnology" as science, engineering, and technology of things at dimensions of less than 100 nm (Sargent, 2013). However, a broader definition of nanotechnology is commonly used in industry, which includes materials of less than 1000 nm as nanomaterials (Ramakrishna, Fujihara, Teo, Lim, & Ma, 2005). Most materials that are synthesized at the nanoscale exhibit superior properties in terms of strength, weight, durability, reactivity, electrical conductivity, etc., which have been proven beneficial for various applications (Sargent, 2013). Nowadays, nanotechnology has been well integrated in industries such as aerospace, automotives, chemicals, construction, cosmetics, electronics, energy, engineering, environment, food, household, medicine, military, security, sports, and textiles

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