



Developments in Polymer Science and Engineering

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ABSTRACT

Creation of new hybrid compounds or materials ready to assure multiple performance constraints in biomedical, engineering and consumer product applications requires novel synthetic techniques. Nanocomposites, Polymer composites, natural or synthetic siliceous sources and composed of natural or synthetic polymers, have been selected as promising substances over the past decades. The major challenges of the 21st century require new and sustainable process in the development of polymer materials. Polymers are molecules that basically contain large number of atoms ranging from tens of thousands to millions. Most of the natural polymers occur as products of biological processes, synthetic polymers or artificial polymers are formed by chemical processes that involve combination of many small units, called monomers, together in branched chains, or more complicated structures. Examples of natural polymers are cellulose, starch, proteins, and DNA, while teflon, nylon and polyethylene are examples of the synthetic polymers. Currently, numerous scientific research associated with water soluble chitosan (WSC) had been released. Since, the chitosan solubility is restricted to acidic media, there's a growing call for in opposition to the spinoff of the chitosan polymer, which is specifically to attain a fabric both having solubility in aqueous media and additionally having chitosan property.

The speedy tempo of advances in polymers, which has led to their present pervasive use, has been marvelous. Artificial polymers are so well

included into the fabric society that we take a look of our dependence on them. Society blessings throughout the board-in fitness, clothing, housing, remedy, protection, energy, transportation, electronics, trade and employment. Biological activities of Water Soluble Chitosan and its derivatives are analyzed in the terms of antimicrobial, antioxidant activity, respectively. Thereby, the obtained statistics may be useful to compare novel synthesized water soluble chitosan derivatives with alternative systems or shapes.

Our goal in this research is to highlight the present new emerging fascinating characterization and synthesis in the field of polymer science. Mostly polymers are synthesized from monomers by two different polymerization techniques: Condensation and Free radical. In addition to the ones polymerization techniques, there were splendid opportunities in modifying polymer through reactive corporations for critical utility like polymerizable surfactants. Such surfactants have determined its utility in growing in-situ biopolymer mesoporous composites.