Chitosan was grafted onto poly(3-hydroxybutyrate) (P(3HB)) as in our earlier work by using gamma radiation-induced polymerization reaction. We now provide structural and surface characteristics of the graft copolymer in view of potential applications. The modified P(3HB) was characterized by $^1$H/solid-state $^{13}$C CP-MAS nuclear magnetic resonance, Fourier transform infrared spectroscopy, thermogravimetric analysis, atomic force microscopy, contact angles and scratch resistance determination. Copolymer surfaces resemble those of neat P(3HB) and are unsuitable for membranes. However, a novel composite based on grafting copolymer and polyurethane was developed. It displays good properties for the preparation of 3D-scaffolds with potential uses in tissue engineering.

Keywords: Poly(3-hydroxybutyrate), chitosan, scaffolds

References:


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