

## عنوان مقاله:

Mechanical evaluation of poly (3-hydroxybutyrate)/bioactive glass nanocomposite scaffold fabricated by electrospinning for bone tissue engineering

## محل انتشار:

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## خلاصه مقاله:

Recently, 3-D nanocomposite scaffolds have shown wide applications in bone tissue engineering for replacement, regeneration and repair of damaged tissues. In this study, poly (3-hydroxybutyrate) (P3HB)/bioactive glass (BG) nanocomposite scaffolds with 7.5, 10 and 15 wt% BG nanoparticles were prepared by electrospinning process. Scaffolds were characterized by scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). Mechanical properties of the prepared scaffolds were determined by tensile test. BG nanoparticles showed agglomerate formation tendency in more than 10 wt%. SEM images proved interconnected porous architecture of the scaffolds. FTIR analysis confirmed the interaction of P3HB and BG nanoparticles. Scaffolds containing 7.5 wt% of BG nanoparticles demonstrated highest tensile strength. In conclusion, electrospun P3HB/ (7.5wt%) BG nanocomposite scaffold could be used as a candidate for bone tissue engineering.

## کلمات کلیدی:

Bioactive Glass Nanoparticles; Poly (3-hydroxybutyrate); Tissue Engineering; Electrospinning; Nanocomposite Scaffold

## لینک ثابت مقاله در پایگاه سیویلیکا:

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