

BIOMATERIALS BASED ON NANOHYDROXYAPATITE

Gabriela Ciobanu^{a*}, Constantin Luca^a, Octavian Ciobanu^b

^a“Gheorghe Asachi” Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection,
63, Prof. dr. docent Dimitrie Mangeron Rd., Iasi 700050, Romania

^b“Grigore T. Popa” University of Medicine and Pharmacy, Faculty of Medical Bioengineering,
16, Universitatii str., Iasi 700115, Romania

*email: gciobanu03@yahoo.co.uk; phone (+40 741) 02 51 63; fax (+40 232) 27 13 11

Abstract. In this study, the porous hydroxyapatite-filled cellulose acetate scaffolds were prepared via dry-wet phase inversion method by dispersing hydroxyapatite nanoparticles in the polymeric matrix. The calcined hydroxyapatite prepared by wet precipitation method has the crystal size smaller than 50 nm. The unfilled and hydroxyapatite-filled cellulose acetate scaffolds have an asymmetric structure consisting of two layers, the dense top layer (active layer) supported by the porous sub-layer (substructure). The cross-sectional SEM images revealed that hydroxyapatite nanoparticles were well dispersed in the cellulose acetate matrix.

Keywords: hydroxyapatite, cellulose acetate, scaffold.