DEVELOPMENT AND CHARACTERIZATION OF HYDROXYAPATITE FOR BONE USE

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Abstract : The objective of this work is the elaboration of a biomaterial Hydroxyapatite (Ca10 (PO4)6 (OH)2), by a synthetic method of precipitation, (CaCl2, 2H2O) as source of calcium and (Na2HPO4, 12 H2O) as a source of phosphate. After preparation, the powder was calcined at 900 °C for 90 minutes at a speed of 10 °C / min and compacted into pellets 12 mm in diameter and 2 mm thick. Sintered powder at different temperatures (1000 °C, 1100 °C, 1200 °C, and 1300 °C). In order to study the effect of sintering temperature on the microstructure, the physical and morphological properties of the elaborated hydroxyapatite, the density, the porosity, X-ray diffraction (DRX) and the scanning electron microscopy (SEM) were used for the characterization of the powder. The density decreases with the increase of the porosity, in fact the sample densifies easily when the porosity is lower

Keywords : hydroxyapatite, SEM, DRX, Porosity, Density