

MICROSTRUCTURAL AND MECHANICAL PROPERTIES OF MELEAGRIS GALLOPOVA HYDROXYAPATITE

¹Suleyman Serdar PAZARLIOGLU, ²Serdar SALMAN

¹Department of Metal Education, Technical Education Faculty, Marmara University, Goztepe Campus, 34722, Istanbul/TURKEY, spazarlioglu@marmara.edu.tr

²Mehmet Akif Ersoy University, Engineering-Architecture Faculty, İstiklal Campus, BURDUR, ssalman@mehmetakif.edu.tr

ABSTRACT

In this study, we obtained hydroxyapatite powders from the femur bones of meleagris gallopova at three steps and sintered at five different temperatures. The reactions, which occur during sintering of obtained powders, have been characterized by X-ray diffraction (XRD) patterns and scanning electron microscope (SEM). The mechanical properties of meleagris gallopova hydroxyapatite powders were determined by the measurements of density, hardness, porosity and compression strength. The X-ray diffraction patterns showed that decomposition of meleagris gallopova hydroxyapatite into tricalcium phosphate and calcium oxide was observed for the sintered samples at 1300°C. At the same temperature, formation of microcracks were also detected by scanning electron microscopy image. Mechanical tests showed that maximum hardness, fracture toughness and compression strength values were measured for the sintered samples at 1200°C.

Keywords: *Meleagris gallopova, hydroxyapatite, sintering*