X-Ray Absorption Fine Structure Measurements on Bone Composition

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Abstract

It is well known that, bone composition has an important role in the human and animal body. Because of the inherent difficulties in the characterization of bone structure and composition as biomedicine materials, there are no more information has so far been reported in the literature. Therefore, further investigations are needed. In this study, X-ray absorption fine structure (XAFS) in Fluorescence mode was used to investigate the bone composition and the biomedicine materials as standard samples. The obtained results were compared with the published data. Thus, good agreement between our experimental results and published data is obtained. This investigation confirmed that XAFS is useful technique for bone structure and composition. In this work, details of sample preparation procedures, experimental setups, data analysis, are presented and discussed.

Keywords: X-ray absorption fine structure (XAFS); Fluorescence; Bone mineral; Hydroxyapatite