

**STUDY THE PROPERTIES OF DENSE HYDROXYAPATITE
- EXTRACT FROM COW BONE**

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In this study, natural HA were extracted from clean cow bone by treatment with NaOH and heating at high temperature before ground into fine powder. The HA powder were than mixed together with binder for several hours. Dense HA were formed in die steel mould by using uniaxially pressing method. Sample was sintered at different temperature 1150, 1200, 1250 and 1300°C for several hours. The phases of specimen were identified using X-ray diffraction (XRD). The mechanical properties were analyzed using MOR testing and the microstructure was observed by scanning electron microscopy. From XRD results, natural HA shows phase of pure HA up to 1000°C and modulus of rupture (MOR) results indicated that the mechanical properties of specimen increase as temperature increase. From microstructure observation using SEM, HA specimen shows initial stages of sintering process at temperature 1150°C and show changes in microstructure evolution as temperature increase up to 1300°C.

Keywords: hydroxyapatite, natural, sintering, dense, properties