

## ABSTRACT

This research was carried out to study the properties of Co-Cr-Mo filled with different composition of HAP that have been prepared by powder metallurgy method. The raw materials used in this research were Co-Cr-Mo powder and HAP (hydroxyapatite, chemical formula  $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ ). The lab work comprises the mixing of Co-Cr-Mo with different HAP composition. The composition of HAP was varied from 0 wt.% to 25 wt.%. The premixed powder then have been milling for 20 minutes at 154 rpm, cold compacted at 550 MPa, and sintered at 11000C in tube furnace (inert environment) for two hours. The composites were tested for physical properties which were density, porosity and microhardness. Microstructural analysis by Scanning Electron Microscope was done for six different compositions of the premixes. The result for density showed that the value of bulk density decreased as the HAP content is increased in the sample. While for apparent porosity, the percent were increased when the percentage of HAP increased. For microstructural analysis, the micrograph of open pores shows as the percentage of HAP increased the pore become larger.