

FINAL YEAR PROJECT REPORT

MAGNETIC CERAMIC

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'TO ALL MAY ALLAH S.W.T BLESS YOU ALWAYS'.

ABSTRACT

This final year project report explained the research method of processing MgO-based soft ferrite for engineering and commercial application. It also reports an investigation of the effects of CuO addition, sintering time and sintering temperature on the microstructure and final density of MgO-based soft ferrites which have been produced by traditional method. Samples have been studied by optical microscopy (400X) and densities have been determined by Archimedes method.

The first chapter explained briefly on magnetic ceramic, this included explanation on classification, desired properties and application of magnetic ceramic. The second chapter is about general preparation of ferrites which start from powder and raw material preparation until the last process, i.e. sintering process. The third and fourth chapter reviewed about the chemical and microstructural consideration. Contents of the both chapter included explanation on the effects of iron variation; divalent iron variation; effects of powder processing; effects of grain size on permeability, power losses and coercivity.

The fifth chapter explained the experimental procedure which was done based on the general preparation of ferrites to produce the sample of magnetic ceramic. The results obtained from experiment are then shown in the sixth chapter. The seventh chapter consist of the overall discussion which was done based on the main objectives of our project, as stated earlier.

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