

CHAPTER 5

CONCLUSION & SUGGESTION

From all the results, we arrive at the following conclusions:

1. Barium Ferrite can be prepared by using Fe : Ba ratios between 8.1 – 10.1
2. The optimum temperature for preparation of BaF for use in the magnetic recording was 1000°C with nominal dopant level between 0.25 to 0.50 since the optimum magnetic properties needed are obtained (e.g. high saturation magnetization (68-78 emu/g) and low coercivity (1965-2686 Oe).
3. H_c decrease with increasing calcination temperature and increasing concentration of dopant.
4. At the same concentration of dopants, H_c increases with increases of the surface area to volume ratio.
5. For the samples of the nominal $x=0.25$ and $x= 0.50$, the dopant ion goes into $4f_v$ as confirmed by the change of saturation magnetization.
6. The Mossbauer parameter of sample calcined at 1000°C shows that the increase of x causes increase ordering in the crystal structure.

Suggestion for future work

1. Examine more closely the parameter of co precipitation method to synthesize barium ferrite
2. Examine the effect of the Fe/Ba ratio on the morphology and magnetic properties
3. Investigate the effect of other dopants such as Ti, Co to improvement of magnetic properties.