

CHAPTER 6

RECOMMEN-

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The present research work is established to study and make a comparison of properties between specimens prepared by co-precipitation process and mixed oxide route. However, the following works need to be done in future in order to further develop the material and overcome the difficulties encountered in the research work.

The following suggestion need to be high line for future works and references:

1. Effect of porosity (open and close pores) on the properties of MgCuZn ferrites.

In the investigation of densification of MgCuZn ferrites, open pores and close pores play an important role in the measurement of sintered density. Therefore, a study of the effect of open pores and close pores on the properties (especially electromagnetic properties) of MgCuZn ferrites needs to be done in future in order to understand the behavior of densification in ferrites.

2. The study of surface area of MgCuZn ferrite powders with different calcination temperature.

Surface area is an important property in densification. A powder with a higher surface area can be compacted denser. However, the surface area of ferrite powders is affected by the calcination temperature. Thus, a study of the effect of calcination temperature on surface area of ferrites needs to be done in order to obtain the optimum surface area with the best calcination temperature.

3. The investigation of the effects of sodium chloride on the properties of MgCuZn ferrites.

In co-precipitation process using chlorides as starting materials, sodium chlorides are formed after reaction with sodium hydroxide. However, the effect of sodium chlorides on the properties of MgCuZn ferrites is unknown.

Therefore, the investigation of the effect of sodium chlorides on ferrites needs to be done.

4. Influence of magnetic losses on the properties of MgCuZn ferrites.

Magnetic losses such as hysteresis loss, eddy-current loss and residual loss in MgCuZn ferrites needs to be investigate individually in order to understand the major loses in MgCuZn ferrites according to particular conditions, such as frequency, temperature, pressure and etc.

5. Synthesis of MgCuZn ferrites by different processing route

Some processes such as gel-derive processing method is a better process than the mixed oxide route in synthesis of MgCuZn ferrites. A study of comparison between the properties of gel-derive MgCuZn ferrites and other processing route (such as Thermal decomposition, Auto combustion, Atomizing burner technique, Spray drying and Microwave methods) need to be done, so that a suitable processing route to produced MgCuZn ferrites can be selected and used in ferrite industry.

6. The study of MgCuZn ferrites in real multilayer chip inductor devices

Multilayer chip inductor needs to be produced in order to examine the MgCuZn ferrites in the manufacture situation.

7. Effects of frequency on the properties of MgCuZn ferrites

To study and establish the relationship between frequency (until few hundred Megahertz) and electromagnetic properties of the ferrites.

8. The investigation of pH on the properties of MgCuZn ferrites synthesize by co-precipitation process

To study the effects pH on the properties of MgCuZn ferrites, such as densification, electromagnetic properties and characteristics of the ferrites.

9. The investigation of milling effects on the properties of MgCuZn ferrites

To study the effects of ball milling on the properties of MgCuZn ferrites.

Parameters that related to milling effects are number of grinding ball, milling time and etc.