$$Fe^{2+} + 2Fe^{3+} + (6 + X)OH^{-} \rightarrow Fe_3O_4 \cdots\cdots\cdots\cdots (1)$$

$$Fe(OH)_2 + XOH^{-} + O_2 \rightarrow Fe_3O_4 \cdots\cdots\cdots\cdots (2)$$

Equation (1) is the reaction of the coprecipitation method to form magnetite. In the reaction, it is known that fne magnetite particles are formed in an alkali solution[6]. Equation (2) is the reaction of the air-oxidation method to form magnetite. The particle sizes formed in this reaction are larger than those of the coprecipitation method, being of submicron order[7,8]. Some reports indicate that the particle shape depends on the kind of anion in the applied raw material solution, the equivalent ratio to alkali ($2OH^{-}/Fe^{2+}$), the hydroge g the tpe Î , on,e theeum]

3.3 Properties of Ferrite Core Using Fine Iron Oxide Powder

Figure 8 shows the effect of iron oxide particle size and sintering temperature on sintered density of NiCuZn ferrites. By using fine iron oxide powder, a high sintered density above 5.1×10^3 kg/m^3 was obtained

4.