Low-temperature Sintering and Electromagnetic Properties Evaluation of (Ni/Mn)CuZn Ferrite

Dong-Ying Ju[1], Bian Pei[2]

[1]Department of Materials Science and Engineering, Saitama Institute of Technology, Japan;
[2]Department of Materials Sciennce and Engineering, Saitama Institute of Technology, Japan

Abstract

In this paper, the ferrite powders of (Ni/Mn)CuZn was synthesized under CO_2 atmosphere at 500→ from the mixed oxalates synthesized by liquid phase precipitation method accompany with addition of a small amount of boric acid [H_3BO_3]. In order to fabricate (Ni/Mn)CuZn ferrite with high strength and high-frequency magnetic properties, the (Ni/Mn)CuZn ferrite powder compact was prepared with Newton press and CIP methods and was fabricated by a low temperature sintering method. Here, the effects of (Ni/Mn)CuZn ferrite on sintering temperature and addition amount of boric acid was investigated, so that optimized the fabricating and sintering conditions of ferrite powder were obtained. Finally, through substitution of Ni and Mn in the ferrite of CuZn type, the substituted effect of Ni an Mn on electromagnetic properties was studied.