

## Zn 첨가에 따른 Ba-Co<sub>2</sub>Z 페라이트의 마이크로파 특성 Microwave Properties of Ba-Co<sub>2</sub>Z Ferrite with Zn addition

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**Abstract :** In this study, microwave properties with compositions and frequency of the Ba<sub>3</sub>Co<sub>2</sub>Fe<sub>24</sub>O<sub>41</sub> ceramics with Zn substitution for Co were investigated. From the XRD patterns, hexagonal structure of Z-type phase was existed as main phase. Diffraction peaks of Z-type phase were shifted to lower angle by Zn substituted for Co site. The permittivity was increased with Zn additions. In all composition, loss tangent of permittivities were increased with frequency. Permeability and magnetic resonance frequency were increased with Zn additions. Permeability was increased and loss tangent of permeability was decreased rapidly over 600 MHz~800 MHz. The loss tangent of permeability did not changed with composition ratio. In the case of Ba<sub>3</sub>Co<sub>1.6</sub>Zn<sub>0.4</sub>Fe<sub>24</sub>O<sub>41</sub> ceramics sintered at 1250 °C for 3 hours, the permittivity, loss tangent of permittivity, permeability and loss tangent of permeability were 28.277, 0.193, 22.992 and 0.065 at 310 MHz, respectively.

**Key Words :** Co<sub>2</sub>Z-type ferrite, Electro-magnetic materials, Zn additions, Microwave properties

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