PTC 써미스터를 위한 $(Bi_{1/2}Na_{1/2})TiO_3$ - $BaTiO_3$계

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$(Bi_{1/2}Na_{1/2})TiO_3$ - system for PTC Thermistor

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Abstract : A new type of a lead-free positive temperature coefficient of resistivity(PTCR) material based on $(Bi_{1/2}Na_{1/2})TiO_3$ - $BaTiO_3$ solid solution ceramics has been developed. The effect of Nb_2O_5 and Y_2O_3 content on the electrical properties and the microstructure of (1-x) $(Bi_{1/2}Na_{1/2})TiO_3$ - x $BaTiO_3$ (BNBT) ceramics made using a conventional mixed oxide process has been studied. The Curie Temperature was obviously increased with the increasing of $(Bi_{0.5}Na_{0.5})TiO_3$ content. The Y-doped BNBT ceramics(x=0.02) display low resistivity values of 10^2-10^3 ohm*cm at room temperature and the Curie Temperature of Tc=155 ℃.

Key Words : PTC, Thermistor, Lead-free, BNT, Curie Temperature