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Abstract
The ferrites is microwave absorption material (MAM) is most often used, the electric conduction high polymer also was the recent years is researched attention and developed for absorbs the material . This research take the epoxy resin as a substrate, and increase magnetic particles and electric conduction high polymer particle, its both all for nano-granule size ; The material and the epoxy resin mix, makes inside diameter 3mm, outer diameter 7mm, thickness is 2cm, 1.8cm and 1.5cm of different thickness previews. Measure use coaxial cable method. Investigation the material of three parts:
The first partial： Magnetic material is NiZn ferrite particles. The ferrite doped with metal(Ni,Zn,Fe) has been prepared by citrate gel route. The powders by the different temperature processing mode, makes the different particle size, the magnetic nano-size particles, the particles and the epoxy resin content mix is 5wt%, 10wt%, 15wt% and 20wt% makes four kinds of the previews.
The second partial： polyaniline of nanosize granule is cheaply, inexpensive and easy to prepare. Nano-size particle of polyaniline are prepared on the non-emulsification polyreaction. The granule and the epoxy resin content score is 5wt%, 10wt%, 15wt% and 20wt% makes four kinds of the previews.
The third part：Polyaniline granule and NiZn ferrites were used the ball grinding by different content(25:75, 50:50, 75:25) for 30 minutes. Taking three kinds different proportion mix powder with the epoxy resin content score is 5wt%, 10wt%, 15wt% and 20wt% makes four kinds of the previews.
The preparation compound material that to improve four characteristic parameter (Permeability real and imaginary , Permittivity real and imaginary). Alter frequency band position and bandwidth for the microwave absorption. Using Maxwell equation, Stoke' s law and penetration wave and reflected wave basic theory, research compound materials particle size, proportion of mixture and preview length and others. Research the difference of characteristic and physical.
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