

## عنوان مقاله:

Effect of morphology and nonbounded interface on dielectric properties of plasma sprayed BaTiO<sub>3</sub> Coating

## محل انتشار:

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## خلاصه مقاله:

In this research, BaTiO<sub>3</sub> thick deposit has been successfully sprayed by air plasma spray. The microstructure and dielectric properties of thick films were investigated by secondary electron microscopy (SEM) and LCR meter respectively. XRD measurement was carried out on plasma sprayed BaTiO<sub>3</sub>. The results illustrate differences in the crystal structure between plasma sprayed coatings and feed stock powders. The as deposited films were mainly crystalline with small amount of an amorphous second phase. The amount of crystalline to amorphous phases was found to be critically dependent upon the degree of melting of feed stock powders. The as-deposited BaTiO<sub>3</sub> films had maximum dielectric constant as high as ۸۵ at room temperature. Upon annealing in air at ۱۰۵۰ °C, the dielectric constant increased to ۱۶۵. Increasing in dielectric constant was attributed to the crystallization of the amorphous phase. The dielectric constant of BaTiO<sub>3</sub> thick films produced by plasma spray was lower than that of sintering ceramic. Reduction in dielectric properties of deposited films was related to splats interface and lamellar structure of plasma sprayed coatings.

## کلمات کلیدی:

Plasma spray, BaTiO<sub>3</sub>, Dielectric Constant, Amorphous phase, Nonbounded interface

## لینک ثابت مقاله در پایگاه سیویلیکا:

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