

## 저유전율 소재에서의 유리조성에 대한 분석

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### Analysis of Glass Composition on Low k Materials

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**Abstract :** The effect of several SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>-R(R;Ca, Sr, Ba) borosilicate glass system on sintering behavior, dielectric properties and mechanical properties of glass/ceramic composites were investigated. The amount of '+2 valency' metal elements(Ca, Sr, Ba) were examined in LTCC composite of low k glass with cordierite filler. It was sintered for 60minutes in temperature range from 850C to 950. Properties of frit and glass/ceramic composites were analyzed by DTA, XRD, SEM, Network Analyzer, UTM and so on. Dielectric constant ( $\epsilon_r$ ) and  $Q \times f_0$  (Q) of the composite with 50% glass contents demonstrated  $\epsilon_r = 5.4$   $Q \times f_0 = 1600$  GHz. Sintering was complete and maximum bending strength of 160MPa was obtained.

**Key Words :** Borosilicate, Cordierite, low k, Ceramic/glass, LTCC