

고분자 열분해를 이용한 세라믹 밀봉제 개발

Development of sealing materials by polymer pyrolysis

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Abstract.

novel ceramic seal materials derived from polymer have been developed for SOFC seals. The formation and properties of ceramic composites derived from the mixture with polymethylsiloxane and filler were researched. And the mixtures with polymethylsiloxane and fillers conversions to ceramic composites at 750°C in N₂ atmosphere were studied. In the presence of filler materials such as ZrO₂ and AlCo, the thermal properties of ceramic composite could be controlled. The microstructure that consist of filler particles and silicon-oxycarbide glass matrix phase derived from polymer were formed. The thermal expansion behaviors were measured and discussed.