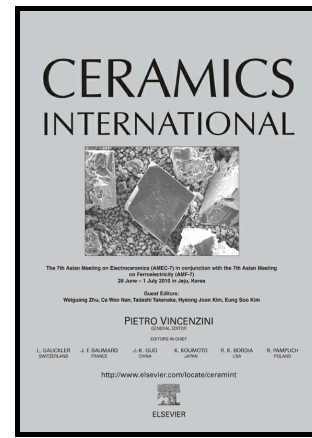


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Abstract

Piezoelectric ceramic – Portland cement composites have been developed for sensor application in concrete structures to overcome the acoustic matching problem that may occur for piezoelectric ceramic or polymers with concrete. Pozzolanic materials such as fly ash are commonly used in concrete to enhance durability. The objectives of this research were to investigate the effects of fly ash addition on the physical properties, dielectric properties and piezoelectric properties of 0–3 barium zirconate titanate ceramic– Portland cement composites. The results showed that the

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