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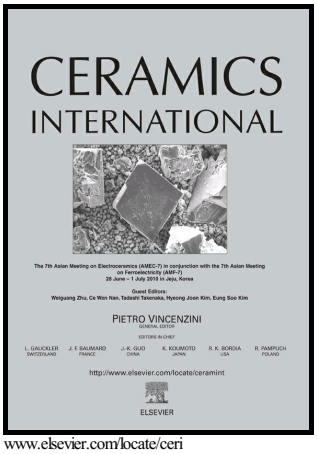

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Preparation and characterization of whisker-reinforced ceramics from coal fly ash

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Abstract

A new type of ceramic is developed based on tobermorite whiskers, in which aluminum replaces some of the original silicon atoms. These Al-tobermorite whiskers are synthesized from coal fly ash through a dynamic hydrothermal method. Their fine fiber morphology and Al-substitution produce bulk ceramics with excellent mechanical properties. When sintered at 900 °C, a temperature lower than the one used for