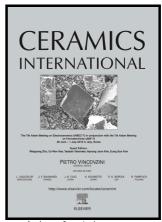
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ACCEPTED MANUSCRIPT

Preparation of Al_2O_3 -coated expanded graphite with enhanced hydrophilicity and oxidation resistance

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ABSTRACT

Expanded graphite (EG), as a new kind of functional carbon-based material, is a vital supporting material and heat transfer enhancer for preparing highly conductive form-stable composite phase change materials (PCMs). However, the hydrophobic nature of EG makes it difficult to incorporate with inorganic PCMs. In this work, we intended to solve this drawback and a modified EG named Al₂O₃-coated EG which was characterized by enhanced hydrophilicity was developed via a heterogeneous nucleation technique and subsequent heat treatment. Experiments found that the Al₂O₃ layer on the

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