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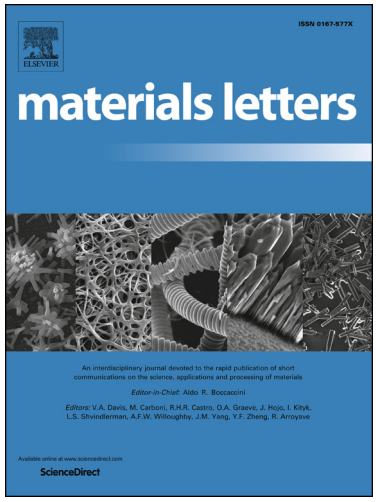

Red mud and electroplating sludge as coloring agents of distinct glazes: the influence of heat treatment

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Red mud and electroplating sludge as coloring agents of distinct glazes: the influence of heat treatment.

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Abstract

The use of red mud (RM) and Cr/Ni electroplating sludge (ES), two industrial wastes, was studied as possible coloring agents for commercial glazes: transparent (TR), bright white (BR) and matte (MT). The influence that a heat treatment produced on the color development/stability was analyzed by comparing, separately, RM and ES non-calcined and calcined at 1200 ºC. RM and ES yielded glazes with red/brown and grey/green hues, respectively. The calcination enhanced the powders coloring strength. ES (non-calcined and calcined) provides a fairly stable coloration when added to BR and MT, and RM (non-calcined and calcined) when added to TP and BR, upon firing at 1100 ±15 ºC. So, depending on the type of glaze, when using RM and ES as coloring agents their previous heat treatment can be avoid leading to meaningful environmental and economic benefits.

Keywords: Red mud; electroplating sludge; waste valorization; ceramic glazes.