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APPLICATION OF AUTOMOTIVE PAINT SLUDGE IN THE PRODUCTION OF WHITE CERAMIC

Praxedes, P.B.(1); Ponte, H.A.(2); Mymrine, V.(3);
Pontificia Universidade Católica(1); UFPR(2); UTFPR(3);

Paint wastes of an automotive industry were evaluated in terms of their chemical and mineralogical characteristics in order to analyse its potential use as a reinforcing agent in white ceramic. Both kaolin and sludge paint were analysed using the techniques of XRF, XRD, SEM, EDS. In order to understand the behaviour of the sludge during firing, TGA and DTA analysis were done. Samples containing kaolin and 0, 1, 2, 4 and 8 (wt.%) sludge paint were prepared. The ceramics were compacted at 10MPa and sintered at 1000 °C, 1200 °C, 1250 °C and 1300 °C. Water absorption, linear shrinkage and flexural strength were the mechanical properties evaluated in the samples. The experimental results showed that the samples with larger amounts of sludge performed better or similar to the samples that only contained kaolin. The insertion of 8 (wt.%) of sludge in the specimen increased flexural strength in 63%.