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Co-densification of coating sludge as alternative energy source

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A solid burnable fuel composite containing high proportion of dehydrated sludge (60% dried sludge) is presented. Thermo-chemical analyses of coating sludge showed heating and energy values to be 27.88 and 13.20 MJ/kg indicating possible use as fuel source. However, high contents of lead and zinc (2.4 and 38.8 mg/L) depicted deleterious oxides emissions. Hence sludge was pre-treated prior to co-densification with mixed paper waste (MPW). Chemically leached sludge with 5M HNO₃ at pH 1.5 recorded maximum lead reductions (below detectable limit), zinc recorded 87.6% reduction. Sludge-paper fire-log glowed with red hot, limited smoke and improved ash content during bench combustibility test.

Biography

Edith I Madukasi has completed her PhD from Harbin Institute of Technology, Harbin, China and about to under take Postdoctoral studies at University of KwaZulu-Natal South Africa in Waste Management. She is the Agricultural Deputy Director of Environmental Technology Division of the Foremost Research Institution in Nigeria. She has published more than 15 papers in reputed peer reviewed journals and has been serving as an Editorial Board Member of repute.

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