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''CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD''

Characterization of Brazilian Red Mud (Bauxite Refinery Residues) and Assessment its Properties for Futures Applications

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Abstract

Aluminum is an abundant element in the Earth. In contemporaneous World it has huge application and it is very important to economy. However, Production of aluminum is associated with the generation of red mud as the major waste material. Its disposal remains an issue of great importance with environmental concerns. The alternative is find and develop red mud applications. Its applications depend on its properties. This way, the present work aimed to characterize the Brazilian red mud and after heat treatment by different techniques (granulometric analysis, powder X-Ray diffraction, thermal analyses, gas adsorption – BET, transmission electron microscopy analyses and ICP analyses). The Heat treatment of red mud increases the surface area which can promote adsorption applications. With heating of red mud, the quantity of iron oxide increases. This allows other application to red mud as coagulant, catalyst or Fenton reagent. The heat treatment enables new applications for red mud.

Keywords: *red mud, aluminium, thermal analysis, characterization.*