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TREATMENT OF RED MUD AND BAUXITE SAMPLES BY ELECTRIC ARC

In the present industrial technologies a lot of different waste with metallic content are produced. Among them the ones containing high iron concentration are having considerable importance, such as converter sludge and red mud. They have 55-65 and 10-30 % iron content, respectively. As the iron is not a rare element, the recovery of that is having economic sense at a certain concentration interval. It seems to be sensible to recover other elements also from the waste in order to increase the profitability. Such as cink and led from converter sludge, and rear earth elements and scandium from red mud, so the combined productivity can make the technology economically feasible. In this research red mud and bauxite were treated by electric arc and the produced iron droplets and the slag was investigated by electron microscope, and ICP. The results shown that the iron droplets contain only silicon as impurity, and the REE and scandium concentration increased by two-three fold in the slag, by using sulfuric and hydrochloric acids the scandium can be leached.

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