

Studies on Plasma Processing of Blue Dust

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Abstract: Plasma smelting was carried out using blue dust and petroleum coke mixtures for five different compositions. By altering percentage of reductant and type of plasma forming gas, recovery rate and degree of metallization were calculated in order to examine the extent of reduction of blue dust. The products were characterized by XRD and optical microscopy techniques. The results of these investigations exhibited that highest degree of metallization and recovery rate of about 98% and 86% respectively, were achieved for nitrogen plasma smelted products.

Keywords: Blue dust, waste utilization, plasma smelting, argon and nitrogen, recovery, degree of metallization.

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