REDUCTION OF PHOSPHORUS CONTENT OF CERTAIN HIGH PHOSPHORUS
MANGANESE ORES
OF INDIA BY ROASTING WITH SODIUM CHLORIDE FOLLOWED BY
LEACHING IN ACID MEDIUM
I : STATISTICAL DESIGN OF ROASTING EXPERIMENTS
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ABSTRACT
The high phosphorus manganese ores of eastern coastal region of India require drastic
crystal chemical treatment to reduce their phosphorus contents because of its very complex
nature of occurrence in these ores. The method consists in roasting the ore with 2-6%
sodium chloride (by weight of ore) at 750o- 800oC followed by leaching in dilute nitric
or hydrochloric acid. Both roasting and leaching operations are important in this process
involving a number of variables or factors which influence the phosphorus content in the
final product. In such cases statistical analysis of the data provides a better picture of the
influence of different variables or the combination of variables. An attempt has been
made in this paper to use statistical methods not only to assess the significance of
different variables but also to ascertain the optimum conditions of roasting.