

Roasting Processes in Mineral Processing and Metal Extraction

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Abstract

Roasting is a versatile pyro metallurgical process used for treatment of ores and minerals in order to extract the desired metal values. A number of roasting processes namely, alkali roasting, chloridized roasting, oxidizing roasting of sulphide ores, sulphide-oxide roasting, sulphation roasting and reduction roasting have been developed for treating different kinds of ores and minerals. In this paper, the principles of these processes alongwith typical examples for metal extraction have been described and discussed. The R & D work carried out by the authors and coworkers in these areas of mineral roasting have been briefly outlined. Some of the processes being used commercially have been highlighted.

Keywords: Ores and minerals, alkali roasting, chloridized roasting, oxidizing roasting, sulphide-oxide roasting, sulphation roasting, reduction roasting, metal extraction.