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Experimental Assessment of Alkaline Leaching of Lepidolite

Authors : António Fiúza, Aurora Futuro, Joana Monteiro, Joaquim Góis

Abstract : Lepidolite is an important lithium mineral that, to the author's best knowledge, has not been used to produce lithium hydroxide, which is necessary for energy conversion to electric vehicles. Alkaline leaching of lithium concentrates allows the establishment of a production diagram avoiding most of the environmental drawbacks that are associated with the usage of acid reagents. The tested processes involve a pretreatment by digestion at high temperatures with additives, followed by leaching at hot atmospheric pressure. The solutions obtained must be compatible with solutions from the leaching of spodumene concentrates, allowing the development of a common treatment diagram, an important accomplishment for the feasible exploitation of Portuguese resources. Statistical programming and interpretation techniques minimize the laboratory effort required by conventional approaches and allow phenomenological comprehension.

Keywords : alkaline leaching, lithium, research design, statistical interpretation
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