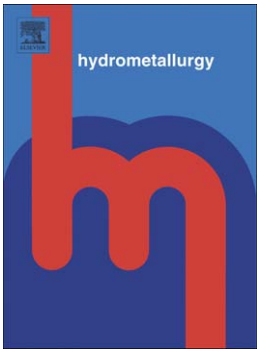

Anaerobic bioleaching of jarosites by *Shewanella putrefaciens,* influence of chelators and biofilm formation

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Anaerobic bioleaching of jarosites by *Shewanella putrefaciens*, influence of chelators and biofilm formation

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Abstract

Development of clean mining processes is a topic of increasing interest. Biotechnology could be a cost-effective and environmentally friendly alternative to conventional methods. Jarosites can have important economic and environmental impacts because of their content of valuable metals. The anaerobic reductive dissolution of jarosites and gossan mineral by *Shewanella putrefaciens* strain CN2 and its secondary products have been investigated. In addition, the ability of *S. putrefaciens* to reduce insoluble Fe(III) in presence of chelators (citrate and EDTA) was examined. The main components in the biofilm extracted from the cultures were determined. In addition, it was observed the formation of extracellular polymeric substances (EPS) during the biological process.

Keywords: *Shewanella putrefaciens*, jarosites, bioleaching, chelator, biofilm