

## Accepted Manuscript

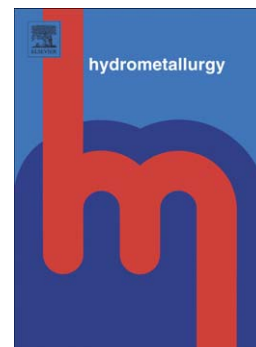
Anaerobic bioleaching of jarosites by *Shewanella putrefaciens*, influence of chelators and biofilm formation

Laura Castro, M. Luisa Blázquez, Felisa González, Jesús A. Muñoz, Antonio Ballester

PII: S0304-386X(16)30540-0  
DOI: doi: [10.1016/j.hydromet.2016.08.002](https://doi.org/10.1016/j.hydromet.2016.08.002)  
Reference: HYDROM 4415

To appear in: *Hydrometallurgy*

Received date: 25 February 2016  
Revised date: 3 August 2016  
Accepted date: 10 August 2016



Please cite this article as: Castro, Laura, Blázquez, M. Luisa, González, Felisa, Muñoz, Jesús A., Ballester, Antonio, Anaerobic bioleaching of jarosites by *Shewanella putrefaciens*, influence of chelators and biofilm formation, *Hydrometallurgy* (2016), doi: [10.1016/j.hydromet.2016.08.002](https://doi.org/10.1016/j.hydromet.2016.08.002)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

Laura Castro, M. Luisa Blázquez, Felisa González, Jesús A. Muñoz and Antonio Ballester\*

*Department of Material Science and Metallurgical Engineering, Complutense University of Madrid, Av. Complutense s/n, 28040 Madrid, Spain.*

lcastror@ucm.es, mblazquez@quim.ucm.es, fgonzalezg@quim.ucm.es,  
jamunoz@ucm.es, ambape@ucm.es

**\*Corresponding author**

**Address: Av. Complutense s/n, 28040 Madrid, Spain.**

**Phone: +34 91 394 4335**

**Email: ambape@ucm.es**

**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

Download English Version:

<https://daneshyari.com/en/article/4769082>

Download Persian Version:

<https://daneshyari.com/article/4769082>

[Daneshyari.com](https://daneshyari.com)