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Authors: Shaofeng Wang, BeiBei Jiao, Mingmei Zhang,
Guoqing Zhang, Xin Wang, Yongfeng Jia



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Arsenic release and speciation during the oxidative dissolution of arsenopyrite by O₂ in the absence and presence of EDTA

Shaofeng Wang^{a,*}, BeiBei Jiao^{a,b}, Mingmei Zhang^a, Guoqing Zhang^a, Xin Wang^a,
Yongfeng Jia^{a,**}

^a Key Laboratory of Pollution Ecology and Environmental Engineering, Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, China

^b University of Chinese Academy of Sciences, Beijing 100049, China

* Corresponding author, Dr. Shaofeng Wang, Email: wangshaofeng@iae.ac.cn,

Telephone: +86 24 8390502, Fax: +86 24 8390503

** Co-corresponding author, Prof. Yongfeng Jia, Email: yongfeng.jia@iae.ac.cn,

Telephone: +86 24 8390503, Fax: +86 24 8390503

Highlights

The oxidative dissolution of arsenopyrite could be largely accelerated by EDTA

The formation of Fe oxyhydroxide minerals inhibits arsenopyrite dissolution

Arsenite can be oxidized to arsenate by aqueous Fe species

ABSTRACT

The oxidative decomposition of arsenopyrite is an important source of As in surface environment. This study investigated the oxidative dissolution of arsenopyrite by O₂ and aqueous arsenic transformation at different pHs, dissolved oxygen (DO) contents, and temperatures in the absence and presence of EDTA. The oxidative dissolution was greatly inhibited at neutral and alkaline pH in the absence of EDTA.

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