Biooxidation at adaptation of iron-oxidizing bacterial strain

*Acidithiobacillus ferrooxidans* JCM 3863 to 16 g/L ferrous ions

E. Petrova\textsuperscript{a}, P. Zlateva\textsuperscript{b}

\textsuperscript{a}Institute of Mechanics, Bulgarian Academy of Sciences, Acad. G. Bonchev Str. Block 4, 1113 Sofia, Bulgaria; ely@imbm.bas.bg

\textsuperscript{b}Institute of System Engineering and Robotics, Bulgarian Academy of Sciences, Acad. G. Bonchev Str. Block 2, 1113 Sofia, Bulgaria; plamzlateva@icsr.bas.bg

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**Abstract**

*Acidithiobacillus ferrooxidans* are acidophilic chemolithioautothropic bacteria, with capability to oxidize ferrous ions and used in waste water, tail gas treatment and bioleaching technologies. As experimental data show, *Acidithiobacillus ferrooxidans* form unique non-stoichiometric porous solid compound named jarosite. The dynamics of substrate degradation and accumulation of the product in terms of periodic cultivation of suspended cell culture have been studied. The aim of the study is to analyze the influence of high concentrations of Fe\textsuperscript{2+} on bacteria. It is a part from larger study on adaptation of the strain to high concentrations of ferrous ions. The obtained experimental results show stability in the strains behavior at the beginning stages of cells adaptation to high concentrations of ferrous ions. They allow to carry out the next stage of adaptation of *Acidithiobacillus ferrooxidans* JCM 3863 to most higher substrate concentrations.

**Keywords**: *Acidithiobacillus ferrooxidans*, ferric ions, biooxidation