Corrosion Behavior of Cast Iron in the Presence of *Acidithiobacillus Ferrooxidans*

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Ferrooxidans bacteria occur widely in acid mine drainage water. This work examined the corrosion behavior of cast iron in the presence of the acidophilic iron-oxidizing bacterium *Acidithiobacillus ferrooxidans* (T.f). Results showed this bacterium accelerated corrosion of cast iron by a factor of two compared with that of acidic (pH 2) water. This bacterium oxidizes ferrous ions to ferric ions as a source of energy and the produced ferric ions is quickly hydrolyzed to generate hydrogen ions, which partly offsets that consumed in the corrosion reaction. Besides, pitting was found on the cast iron surface in culture medium containing *Acidithiobacillus ferrooxidans*.

Keywords: Cast iron; MIC; Weight loss; morphology; EIS

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