

عنوان مقاله:

Optimization of bioleaching of a vanadium containing slag using RSM

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

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خلاصه مقاله:

Recovery of vanadium from LD (Linz-Donawits) converter slag was evaluated by means of microbial leaching. Vanadium leaching was performed in two stages. In the first stage, the bacteria were grown in a culture medium and in the second stage; vanadium containing slag was added to the metabolites produced by bacteria. Bioleaching was performed using heterotrophic bacteria *Pseudomonas Putida*. Response surface methodology was applied to optimize the recovery of vanadium. Experiments were conducted based on a rotatable central composite design (CCD) and analyzed using response surface methodology (RSM). The bioleaching process was investigated as a function of three independent factors viz. slag concentration (6–20 g/L), initial medium glucose content (20–80g/L) and bioleaching time (5–15 days). The optimum conditions for the vanadium recovery were found to be respectively 6 g/L, 79 g/L and 15 days, for slag concentration, initial medium glucose content and bioleaching time. Under these conditions, maximum bioleaching capacity of the medium for recovery of vanadium was determined to be 90.58%

کلمات کلیدی:

Vanadium, Microbial leaching, *Pseudomonas Putida*, RSM

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