

Influence of *S.carnosus* Bacteria as Biocollector for the Recovery Organic Matter in the Flotation Process

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Abstract : The mineral bioflotation represents a viable alternative for the evaluation of new processes benefit alternative. The adsorption bacteria on minerals surfaces will depend mainly on the type of the microorganism as well as of the studied mineral surface. In the current study, adhesion of *S. carnosus* on coal was studied. Several methods were used as: DRX, Fourier Transform Infra Red (FTIR) adhesion isotherms and kinetic. The main goal is the recovery of organic matter by the microflotation process on coal particles with biological reagent (*S. carnosus*). Adhesion tests revealed that adhesion took place after 8 h at pH 9. The results suggest that the adhesion of bacteria to solid substrates can be considered an abiotic physicochemical process that is consequently governed by bacterial surface properties such as their specific surface area, hydrophobicity and surface functionalities. The greatest coal fine flotability was 75%, after 5 min of flotation.

Keywords : fine coal, bacteria, adhesion, recovery organic matter

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