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A parametric study on the factors affecting the froth floatation of Jordanian tar sand utilizing a fluidized bed floatator

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Abstract: Different parameters affecting the behavior of froth floatation of Jordanian tar sand , obtained from the Dead Sea area, were studied. This study was performed in a modified fluidized bed floatator. The effects of the addition of a flotation agent, NaOH, temperature and flotation time on the beneficiation of bitumen in the froth were investigated. It was found that the beneficiation factor in the froth increased with the increase of temperature and flotation time. However, the amount of base (NaOH) and the flotation agent were found to have a negative effect on that factor. A regression model based on a full factorial experimental design results was obtained with a significant correlation coefficient. The optimum beneficiation factor was found to be 7.2 and the bitumen content in the froth was found to be 79% in the froth, which was obtained at 0.2 gNaOH/L, zero agent, 80 C, and 30 min.