

PRELIMINARY ASSESMENT OF THE USE OF RED MUD SLAG FOR PHOSPHATE SORPTION FROM AQUEOUS SOLUTIONS

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Abstract

This paper shows the preliminary results of the investigation of the possibility of the use of red mud slag (RMS) for phosphate sorption from aqueous solution. The red mud slag was obtained from red mud treatment, specifically carbothermal reduction at high temperatures. This process resulted in forming a metallic phase (iron) and slag enriched with other elements. The preliminary analysis of slag is done to investigate its potential for use as a phosphate sorbent in wastewater treatment. The slag is divided into three categories. The two of them are obtained by sieving an original slag sample in the fine fraction and the coarse fraction (the slag residual after sieving). The third sample is the raw slag. After an experiment that included 24-hour shaking of slag and phosphate solution, the results show potential for using red mud slag in phosphate sorption. It is an initial experiment that will be a starting point for further investigation of the sorption characteristics of the red mud slag.

Keywords: *the red mud; carbothermal reduction; the red mud slag; phosphate removal; new sorbents;*

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