

Study of Quartz Activation, Effect of pH and Ion Fe²⁺ Concentration in Supporting Processes

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ABSTRACT

Iron oxide supported in quartz had been done. This research were studied activation in quartz, effect of pH and ion Fe²⁺ concentration to the iron oxide formation in quartz and quartz itself. Activation were done using variation of activator concentration and time contact. The variation of activator concentration were 1 and 4M, and variation of the time contact were 15, 30, 60, 90 and 1440 minutes (24 hours). Quartz in optimum condition of activation was used for the supporting processes. Processes were conducted in ion exchange method. Supporting processes were done using variation of pH and ion Fe²⁺ concentration. The variation of pH were 5, 7 and 9, and variation of ion Fe²⁺ concentration were 0, 0,001, 0,005 and 0,01M. The sampels were analyzed using gravimetric and X-Ray Diffraction methods.

The result showed that the acidity of quartz increased after activation comparing with quartz before activation. It means the activation sites formed in quartz. The activation reached optimum condition in activator concentration 1M and the time contact was 30 minutes. The result showed that supporting processes affected by pH and ion Fe²⁺ concentration. Iron oxide supported in pH 7 and 9, and maximum supported in concentration of ion Fe²⁺ 0,005M.

Keywords: iron oxide, quartz, activation, supporting processes, pH, ion Fe²⁺ concentration