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Chromium Adsorption by Modified Wood

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Abstract : Chromium is one of the most common heavy metals which exist in very high concentrations in wastewater. The removal is very expensive due to the high cost of normal adsorbents. Lignocellulosic materials and mainly treated materials have proven to be a good solution for this problem. Adsorption tests were performed at different pH, different times and with varying concentrations. Results show that is at pH 3 that treated wood absorbs more chromium ranging from 70% (2h treatment) to almost 100% (12 h treatment) much more than untreated wood with less than 40%. Most of the adsorption is made in the first 2-3 hours for untreated and heat treated wood. Modified wood adsorbs more chromium throughout the time. For all the samples, adsorption fitted relatively well the Langmuir model with correlation coefficient ranging from 0.85 to 0.97. The results show that heat treated wood is a good adsorbent ant that this might be a good utilization for sawdust from treating companies.

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