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ARSENATE REMOVAL BY *Withania frutescens* PLANT FROM THE SOUTH–WESTERN MOROCCO

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Abstract

Withania frutescens plant from the south–western Morocco was used as an environmentally friendly material for the removal of As(V) ions from aqueous solutions. This work presents the characteristics of the adsorption and the desorption processes of As(V) using the dried *W. frutescens* plant as an environmentally friendly adsorbent. The mass of the adsorbent, the As(V) concentration, the contact time and the pH of the tested aqueous solutions were used as controlled variable parameters during the adsorption batch experiments. When the mass of the dried plant increases the removal of As(V) accentuates though the adsorption capacity of *W. frutescens* plant to adsorb As(V) decreases due to the higher concentration of unsaturated adsorption sites. After saturation with As(V) the used plant was regenerated with 0.07M sodium hydroxide and the maximum desorption percentage of As(V) was found to be 92%. The results generally showed that *W. frutescens* plant from Morocco can be successfully used to remove As(V) ions from aqueous solutions.

Key words: adsorption, As(V) removal, desorption, *W. frutescens* plant

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