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Cesium adsorption isotherm on swelling high-charged micas from aqueous solutions: Effect of temperature

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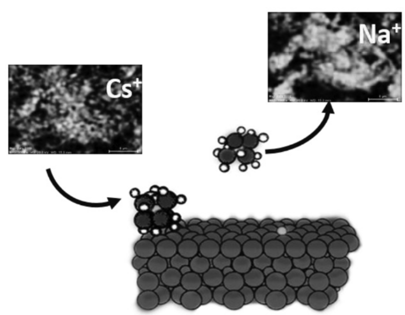
Abstract

The potential use of a new family of synthetic swelling micas for cesium immobilization from aqueous solution was evaluated and the structural modifications after adsorption were analyzed. The results have revealed that they are good cesium adsorbents compared to natural clays and as the layer charge increases, the adsorption capacity and affinity increase. The cesium ions are adsorbed through a cation exchange mechanism, but an inner sphere complex with the basal O atoms of the tetrahedral sheet is favored. These findings imply that is possible to design minerals with improved environmental applications.



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