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## ***Azolla Caroliniana* AS URANIUM AND THORIUM BIOACCUMULATING MATERIAL**

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### **Abstract**

The possibility of bioaccumulation of uranium and thorium species in the blue-green algae *Azolla caroliniana* Willd. was investigated. The behavior of the *Azolla caroliniana* –  $M^{n+}$  ( $M^{n+} = UO_2^{2+}, Th^{4+}$ ) system was studied versus contact time, pH and anion nature with no ionic competition. The effective  $UO_2^{2+}$  and  $Th^{4+}$  ions removal from low radioactive waste waters was demonstrated. The analysis of the data revealed the following optimum working conditions: for uranium: contact time 20 hours, pH = 6.0,  $t = 28$  °C and  $2 \cdot 10^{-3} M UO_2(CH_3COO)_2$  solution as uranium source; as result, the maximum of  $K_d$  is obtained for a value of nearly 600 mL/g, and a ratio  $V/M=100$  mL/g; for thorium: contact time 30 hours, pH = 5.5,  $t = 26$  °C and  $10^{-3} M Th(NO_3)_4$  solution as thorium source; the maximum of  $K_d$  is about 900 mL/g, for the same ratio  $V/M$ .

*Keywords:* *Azolla caroliniana* Willd., bioaccumulation, thorium, uranium

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