

MEZAGUER, M., KAMEL, N.E.H., LOUNICI, H., KAMEL, Z.

Characterization and properties of *Pleurotus mutilus* fungal biomass as adsorbent of the removal of uranium(VI) from uranium leachate

(2013) Journal of Radioanalytical and Nuclear Chemistry 295 (1) PP. 393 - 403 Cited 4 times.

doi: [10.1007/s10967-012-1911-y](https://doi.org/10.1007/s10967-012-1911-y)

ABSTRACT:

Removal and recovery of uranium from dilute aqueous solutions by dead fungal biomass (*Pleurotus mutilus*) have been studied by biosorption. The parameters that affect the uranium(VI) adsorption, such as: pH solution, temperature, biomass particle size and speed of stirring have been investigated and optimized. The experimental data were analyzed using pseudo-first-order and pseudo-second-order equations. The Freundlich and Langmuir adsorption models have been used for the mathematical description of the adsorption equilibrium. The maximum uranium biosorption capacity has been calculated. The value obtained (636.9 mg g⁻¹) showed that *P. mutilus* is a good adsorbent. Also, the chemical bands involved in uranium link have been identified. We have applied this biosorption to actual waste uranium leachate, the results are satisfactory and promising