

## Physico-chemical nanomaterials science

### Adsorption of uranyl ions at the hydroxyapatite and his modification /aqueous electrolyte interface.

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Hydroxyapatite [Ca<sub>10</sub>(OH)<sub>2</sub>(PO<sub>4</sub>)<sub>6</sub>] is very interesting adsorbent , can be classified as a bioactive material, most commonly found in nature in phosphate rock as a member of the apatite mineral group [1-3]. The investigation proposed in this paper will include measurements of uranyl ions adsorption at the hydroxyapatite/electrolyte solution interface by means of spectroscopy method.

The studied adsorbents were synthesized by wet method . Surface properties of hydroxyapatite and his modification were studied: X-ray diffraction (XRD) , adsorption -desorption of nitrogen (ASAP), PCS (photon correlation spectroscopy) , SEM microscope were investigated. Physicochemical properties of hydroxyapatite [Ca<sub>10</sub>(OH)<sub>2</sub>(PO<sub>4</sub>)<sub>6</sub>] surface were studied by means of potentiometric titration and electrophoretic measurements. The surface charge density and zeta potential was measured for the basic electrolyte concentration (0.001 mol/dm<sup>3</sup> ) as a function of pH and concentration of the uranyl ions ranged from 0.01 to 0.000001 mol/dm<sup>3</sup> . Sorption of uranyl ions on hydroxyapatite and his modification was studied by investigating sorption isotherms and the influence of pH.

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**Acknowledgement** The research leading to these results has received funding from the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme FP7/2007-2013/ under REA grant agreement noPIRSESGA-2013-612484.