



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

## **COPPER IMPREGNATED ACTIVATED CARBON FOR THE TREATMENT OF SULFUROUS WATERS**

**Raisa Nastas\*, Vasile Rusu, Tudor Lupascu**

*Institute of Chemistry of Academy of Sciences of Moldova, 3 Academiei Street, Chisinau, MD-2028, Republic of Moldova*

---

### **Abstract**

This paper deals with the experimental investigation related to removal of hydrogen sulfide from simulated groundwater by adsorption/oxidation on activated carbons. Carbonaceous adsorbents were synthesized from peach stones by physical-chemical activation method and modified by oxidation following impregnation with  $\text{Cu}^{2+}$  by ion-exchange method. Obtained carbonaceous adsorbents were characterized by specific surface area and micropore volume. Surface chemistry properties were evaluated using Boehm titration method, pH value of suspension and chemiluminescence technique. Column adsorption/oxidation experiments were performed in order to evaluate capacity of carbonaceous adsorbents to remove hydrogen sulfide from solutions. The developed copper modified carbonaceous adsorbent was found to be an effective adsorbent for treatment of sulfurous waters. The capacity of adsorbent (expressed as the ratio of the volume of used adsorbent: solution volume at breakthrough point) achieves a ratio up to 1 : 3000.

*Key words:* active carbon, hydrogen sulfide, removal

*Received: January 2013; Revised final: May, 2013; Accepted: May, 2013*

---

---

\* Author to whom all correspondence should be addressed: E-mail: [nastasraisa@yahoo.com](mailto:nastasraisa@yahoo.com); Phone: +373 22 739731; Fax: +373 22 739954