

## S5-1.8

# Sorbents Obtained From Cellulose-Containing Waste for Water Purification

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As a rule, ions of some heavy metals are always found in natural and waste waters. The purpose of this work was to study the sorption properties of carbon material obtained from secondary raw materials (hazelnut and walnut shells) according to the technology we have developed; determination of its applicability in the purification of drinking and waste water, in which ions of several heavy metals are simultaneously present. The salts of lead, cobalt, iron and cadmium, as the most important pollutants of the water basin, were the adsorbates. Studies of solutions of various concentrations of metal ions showed that in the presence of all four ions, the maximum adsorption rate and the degree of extraction are achieved at a solution concentration of 0.0025 M  $Me^{+2}$  in 30 minutes, as for the effect of pH on the degree of sorption, the experimental results showed that the best values are achieved at pH 3 for cobalt ions and pH 3 ÷ 5 for copper, lead and iron ions. It was found that the nature of sorption by these absorbers is the same: for a given metal, hydrated ions are adsorbed in the same way on different absorbers. The larger the crystal radius of an ion with the same charge, the better it is adsorbed (sorption capacity for  $Pb^{++}$  ions is maximum, and minimum for  $Co^{++}$  ions).