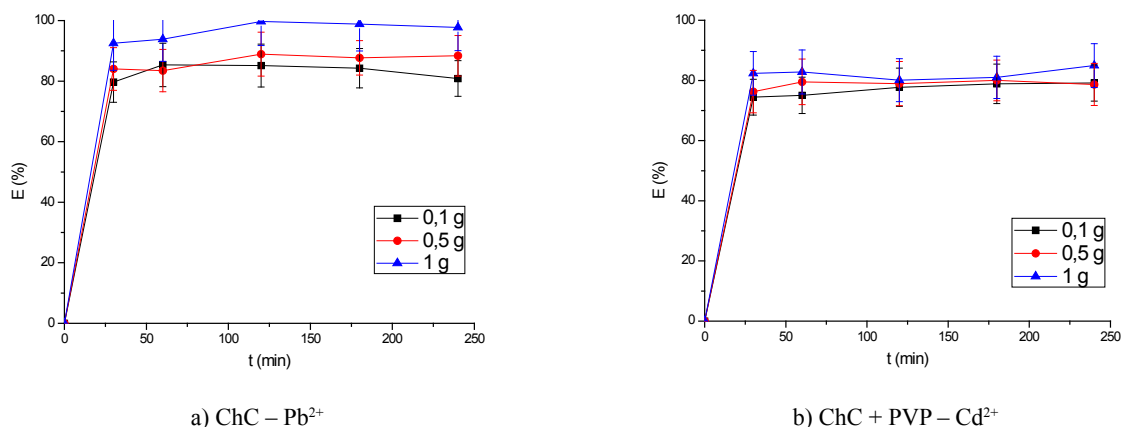


**Figure 5** – Dependence of the degree of extraction of Cd<sup>2+</sup>, Pb<sup>2+</sup> ions (T = 298K, pH = 6, C = 10 mg/l) on time



**Figure 6** – Dependence of the degree of extraction of Pb<sup>2+</sup> (a) and Cd<sup>2+</sup> (b) ions with different masses of ChC(a) and ChC+PVP (b) on time (T = 298 K, pH = 6, C = 10 mg/l)

As the results presented in Fig. 6 show, the efficiency of extracting HM ions from solution increases with a raise in sorbent mass. It was found that the optimal sorbent mass required for the most complete extraction of metal ions was 1 g per 100 cm<sup>3</sup> of a metal salt solution for both cadmium and lead.

## Conclusion

It was found that the degree of extraction of Pb<sup>2+</sup> ions by ChC reaches (97.0 ± 7.2)%, while for Cd<sup>2+</sup> ions it shows a lower efficiency – (86.0 ± 6.4)%. This is probably due to the fact that lead ions have a larger ionic radius (0.112 nm) compared to cadmium ions (0.099 nm). Based on the analysis of the physicochemical characteristics of ChC, it was found that the imposition of polyvinylpyrrolidone significantly increases the sorption ability towards Cd<sup>2+</sup> ions. The

optimal mass for the sorption of lead and cadmium ions – 1 g per 100 cm<sup>3</sup> of solution was also determined during the study at T = 298 K and pH = 6. The use of chamotte clay as the basis for the development of sorbents helps reducing the cost of cleaning water bodies, and also allows solving the problem of wastes disposal.

## References

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