

**Gumińska, J., Kłos, M. Effect of Coagulation Sludge Recirculation on the Efficiency of Water Treatment in the Case of High Color Intensity. *Ochrona Środowiska* 2008, Vol. 30, No. 1, pp. 9–12.**

**Abstract:** The efficiency of the coagulation process makes a remarkable contribution to the efficiency of the whole water treatment train. To enhance the efficiency of the water treatment process, it is advisable to conduct coagulation and sedimentation in a multifunctional system with a sludge blanket, where coagulation sludge can be made subject to recirculation. The study reported on in this paper focused on the problem of how the recirculation of the coagulation sludge affects the coagulant dose required and the efficiency of pollutant removal from model water characterized by a high colored matter content. The results have shown that with an optimal extent of sludge recirculation the coagulant dose can be noticeably reduced as compared to the one required in conventional coagulation, where sludge is not recirculated. It has also been found that even if the extent of recirculation slightly deviates from the optimal value, the quality of the treated water, obtained with the same coagulant dose, will be higher than when use is made of conventional coagulation. But if the quantity of recirculated coagulation sludge was excessively high, this was concomitant with a decrease in the efficiency of water treatment even in comparison to the classical coagulation process.

**Keywords:** Water treatment, coagulation, sludge recirculation.