

Klos, M. Use of the Stream Current Analyzer for the Control of Sweep Coagulation. *Ochrona Srodowiska* 2012, Vol. 34, No. 2, pp. 15–18.

Abstract: Efforts at improving the coagulation effect during water treatment require that the coagulation process should be conducted according to the underlying assumptions of enhanced coagulation. A sine qua non condition for achieving this is the switch from the mechanism of adsorption–destabilization of the pollutants to the mechanism governing sweep coagulation. A side-effect of such a switch is the risk that excessive amounts of residual coagulant and post-coagulation suspended solids will appear in the effluent from the settling tank. In this paper presented are the results of investigations into a procedure of coagulant dose control in real time. In the procedure use is made of a stream current analyzer, which not only significantly improves the efficiency of the coagulation process, but also minimizes the proportion of fine particles in the post-coagulation suspended solids. The study has produced the following findings. The development of the procedure by including measurements of organic matter content (UV absorbance at 254 nm) and suspended solids (with major focus on particle size of $\sim 1 \mu\text{m}$) had a beneficial effect on the technological performance of the control system, as well as on the accuracy of predicting the coagulant dose.

Keywords: Sweep coagulation, coagulant dose control, pre-hydrolyzed coagulant, stream current analyzer, prediction, water control.