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## *ICEEM/03 – ENVIRONMENTAL POLLUTION PREVENTION*

# ASPECTS REGARDING CHEMICAL TREATMENT OF MUNICIPAL SLUDGE

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**Abstract**

This study reports data obtained during the treatment process of the sludge resulted from the wastewater treatment plant of Timisoara City. Ferric chloride and synthetic polyelectrolyte were used as coagulation agent and adjuvants, respectively. The value of Zeta (ξ) potential indicated the possibility of sludge conditioning by using both cationic and anionic polyelectrolytes. To establish the optimum dose, the sludge behaviour to gravitational sedimentation and filtering was studied under normal and vacuum conditions. The correlation of the results related to gravitational sedimentation and filterability under normal conditions led to the establishment of the optimum dose for anionic and cationic polyelectrolyte, respectively. These were identical for the two types of polyelectrolytes, i.e. 0.28 g/kg dry solids. Despite identical optimum doses, the sludge samples treated with cationic polyelectrolyte were characterised by better behaviour to gravitational sedimentation and filtration under normal conditions. In addition, the low specific resistance to filtration was a reason to use the cationic polymer for the conditioning process. The change of sludge behaviour related to gravitational sedimentation during storage was underlined by using a new term: "0 dose".

*Keywords*: municipal sludge, chemical conditioning, gravitational sedimentation, filterability

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