Contaminated inorganic sludges, coming from river bed sediments or from industrial production processes, are causing worldwide a large threat for humans and ecology. This is not only related to toxic compounds, but also to the large amounts of sludges that are disposed in landfills. These landfills are not always safe and every year several dam breakages lead to large environmental disasters.

*Ex situ* techniques are commonly practiced to obtain a better dewatering and consolidation of the sludges as pretreatment for disposal in new landfills. Reduction of the water concentration in the sludge would increase the geostability, decrease the leaching of toxic compounds and reduce the sludge volume in the landfill. This leads to an increased disposal capacity, which is of high economic importance, especially for dredging sludge and mine tailings.

This presentation will describe the ‘*In situ* sludge consolidation’ project executed in Flanders (Belgium) in the framework of the *Environmental Technology Platform* (MIP). It is executed by 4 research centers, 8 companies (of which 2 SMEs) and 2 public organizations. The approach of *in situ* dewatering technology combined with the addition of reagents for improving the coagulation-flocculation will be discussed, as well as biological stabilization methods. Special attention will be paid to the injection and mixing technologies, as well as to methods for water removal. The *in situ* dewatering will be combined with chemical and biological oxidation, reduction and fixation techniques to
degrade or immobilize pollutants in the sludges. The latter will also be useful for in situ
treatment of toxic compounds (e.g. PCBs, PAHs, TBT, dioxins, heavy metals, ....) in river
bed sediments.
The first results of laboratory testing for landfill and river bed test sites will be presented.