technology profile

REMOVAL OF CHELATING AGENTS FROM WASTE WATER

Aim of developed technology

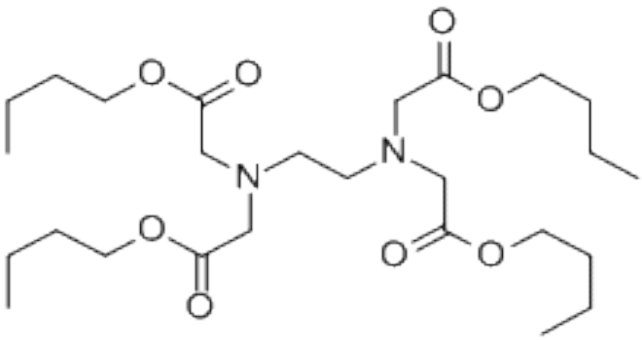
Problem: EDTA and similiar chelating agents are commonly used chemicals capable of chelating metals. They can increase bioavailability of heavy and radioactive metals in the environment, restrict the availability of essential metals or contribute to eutrophication. EDTA concentrations around 200 µg/l in Labe (Ústí nad Labem), in Bílina cca 60 µg/l have been observed.

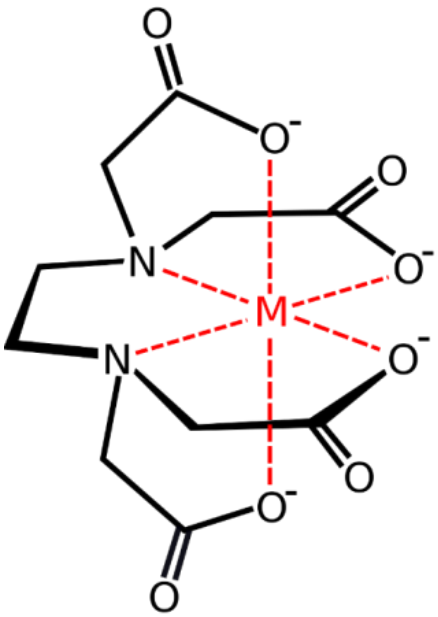
Solution:In the first step we developed the methods for determination of chelating agents by GC-MS and HPLC-DAD. Subsequently, degradation of EDTA on columns with biofilm under various conditions have been tested. Degradation efficiency was around 50 %. This solution can help to reduce emissions of EDTA and similiar chelating agents into the environment. Currently we are developing magnetic sorbent modified by EDTA which can be used for removal of heavy metals with subsequent separation of sorbent by magnetic field and regeneration.

Potential adopters

Potential user of the technology: Developed technologies can be applied to remove chelating agents used in the paper and textile industry or to purify water contaminated by cleaning solutions and detergents.

The technology was developed in cooperation with PRO-AQUA CZ, s.r.o.





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