

DEVICE FOR CAPTURING METAL IONS FROM POLLUTED WATERS BY BIOLOGICAL IMMOBILIZATION



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TECHNOLOGY:

The technology is based on the combinability of three modules with specific functions. Modules (columns) are filled with fillings that serve both as an active element in immobilization processes and as a carrier of microbial biomass in the form of its biofilm. The first module serves mainly to create optimal conditions for the growth of bacteria. From the first module, the liquid passes to the second module, where a consortium of sulfate-reducing bacteria is maintained and the pH is regulated. The third module is used to precipitate metals from water pollution simultaneously with the precipitated mixture from the second module.

WHAT TECHNOLOGY SOLVES:

The technology combines the advantages of active (chemical) and passive (biotic) decontamination of polluted waters (mainly mining and industrial). Another advantage is the transferability of the solution to other types of waste water, e.g. landfill water.

COMMERCIALIZATION:

The main benefit for companies that would use our results is to expand their service offering with a technology that offers a solution for the removal of metal ions from wastewater by biological means, which is more cost-effective than most of the chemical processes that are widely used nowadays. It is also necessary to take into account the fact that biological procedures are generally better perceived by the public than chemical procedures, and companies are aware of this fact.



A view of the apparatus in the arrangement for precipitation of metal ions



Collection of samples

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Patent situation:

CZ utility model, SVK patent

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