

Intermediate Activities

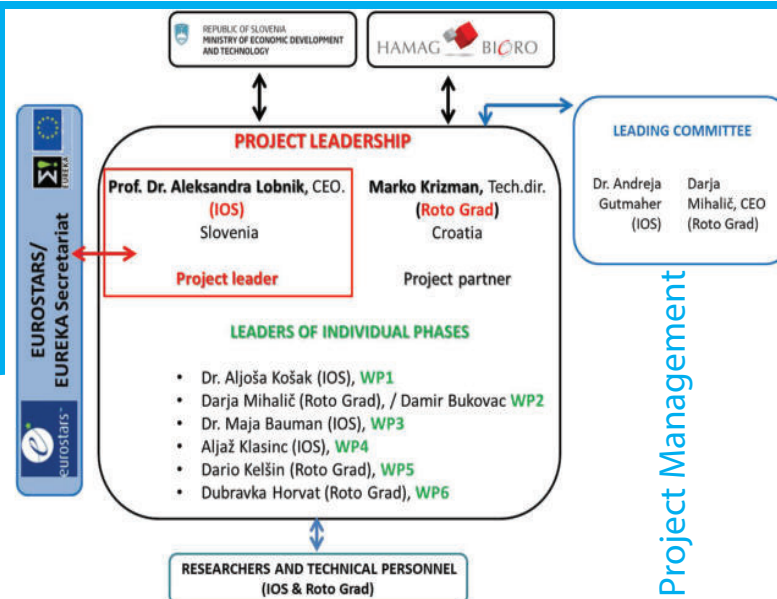
The important intermediate activities for realization of main project goal are:

- development of cartridge that will contain the FNMs/adsorbents with user-friendly manner design,
- optimization of FNMs synthesis for adsorption of HMs,
- performance of FNMs regeneration,
- scale-up production of FNMs, which is a highly demanding task.

The Main Advantages of HMRecycle

The main advantages of HMRecycle compared to the existing solutions are following:

- improved cleaning efficiency up to 40 % (negative impact of HMs on biodegradation in the secondary water treatment process is reduced),
- re-usability of purified water in the cooling systems of different industrial plants, for watering the surrounding grasslands etc.,
- possibility of regeneration of used FNMs and their reuse,
- possibility of recycling the specific HMs as secondary raw materials.



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ROTO-GRAD d.o.o. (Croatia)



EI113543

“Recycling of heavy metals from wastewaters – HMRecycle”

Duration: 01.09.2019 – 31.08.2022

HMRecycling system - Industrial wastewater as a source of metals & water for reuse



This project has received funding from the Eurostars-2 joint programme with co-funding from the European Union Horizon 2020 research and innovation programme

About the Project

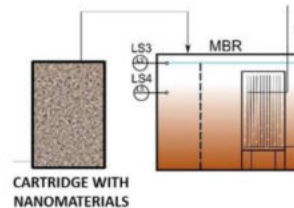
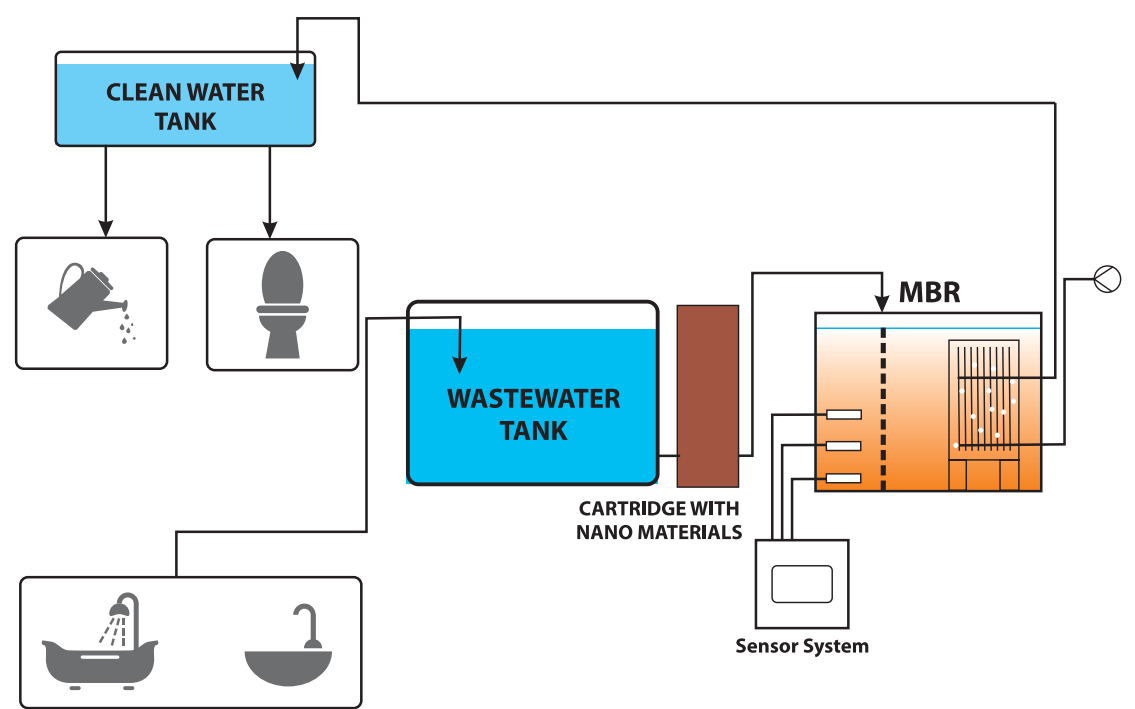
Eurostars Project:
E!113543 "Recycling of heavy metals from wastewaters – HMRecycle"

HMRecycle project will introduce a heavy metal (HM) recycling system for wastewater treatment or more precisely, the novel membrane biological reactor (MBR) with innovative nano pre-treatment cartridge that contains functionalized nanomaterials (FNMs) as adsorbents for heavy metals. Adsorbents can later be reused and heavy metals recycled. With the optimization of functionalized nanomaterials (FNMs) and the innovative HMRecycling MBR system, we will be able to clean and reuse not only municipal, but also leachate/industrial wastewaters, where existing MBR treatment plants are not effective. HMRecycling system represents a complete market novelty, as it has wider applicability and introduces a new technological approach to the recycling of heavy metals from wastewaters.

The novel HMRecycling MBR system will represent a novel, up to 40% more efficient treatment system in comparison to the classical MBR, as well as an easy handling solution for leachate/industrial wastewater treatment and reuse, for extraction of secondary raw materials from such wastewaters, for reduction of operating costs and reduction of negative environmental impacts.

»The operation is partially funded by EU funds and by MGRT - Ministry of Economic Development and Technology, Slovenia and Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO)."

Scheme of HMRecycling system



HMRecycling work packages

