

MFC4Sludge: Microbial fuel cell technologies for combined wastewater sludge treatment and energy production

Project no.: FP7-SME-2013-605893-MFC4sludge
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Brief overview

MFC4Sludge is a research project that aims to develop, according to participating SME needs, an innovative solution consisting of a MFC coupled to a hydrolytic-acidogenic anaerobic digestion (to treat sewage sludge from wastewater treatment plants (WWTPs).

The technologies to be developed herein will not only improve existing sludge treatments in environmental terms (even avoiding sludge disposal) but also in cost-effectiveness terms (generating electricity in the MFC in order to power the sludge treatment).

The objective is to develop a reliable, cost-effective and efficient alternative to existing wastewater sludge treatments with minimum environmental impacts and without increasing energy consumption of current wastewater treatment plants.

To that end, “MFC4Sludge” will take advantage of the potentials of MFC regarding direct conversion of sludge into electricity while operating at ambient temperature with low biomass production and neither requiring gas handling nor aeration.

Taking into account the latest state-of-the-art, research activities will be focused in:

- wastewater sludge pre-treatment using partial anaerobic digestion;
- MFC system development aimed at improving system efficiency and cost-effectiveness;
- MFC control strategies design in order to reach an optimal performance;
- integration of the different elements which compose the final solution.

Given the SME participants’ financial and scientific limitations to conduct the needed research themselves, key European RTD performers will be subcontracted within the project in order to transfer their research results to such SMEs.

Project consortium

- ECO trend s.r.o. (coordinator) – Czech Republic
- Emefcy Ltd. - Israel
- Automação e controle industrial, Lda - Portugal
- Fraunhofer-Institute for Interfacial Engineering and Biotechnology IGB - Germany
- Acondicionamiento Tarrasense Asociacion - Spain
- Optimización orientada a la sostenibilidad S.L. - Spain
- Gipuzkoako Urak, S.A. - Spain

