puShing aHead with field implementatiOn of best fitting WasteWater treatment and management solutions: SHOWW project (LIFE10 INF/IT/000282)

The SHOWW project aims to solve environmental problems resulting from overexposure to negative effects associated with inadequate wastewater treatment strategies, methods and technologies. Previous LIFE projects identify a wide range of available solutions, but insufficient knowledge of these results creates a barrier to their understanding and adoption. So, the main outcomes of the project are (a) the production of a set of solutions selected by all LIFE projects, grouped by implementation issues and accessible to the public via a semantic web interface and (b) the dissemination of innovative treatment and management solutions among Italian and Spanish operators in the wastewater field.

The workshop entitled **Technological innovation through LIFE projects: the best solutions compared** aims to disseminate among wastewater stakeholders LIFE solutions concerning wastewater treatment and management.

Phosphorus removal in anaerobic effluent by struvite process: ANPHOS process (LIFE03 ENV/NL/000465)

Environmental profit with new method of phosphate removal "ANPHOS®"

With a new sustainable technique, it is possible to remove phosphate from anaerobic treated wastewater. Traditionally this is done with iron- or aluminium salts. But there are many disadvantages at the use of these chemicals. The new technique uses magnesium and converts the phosphate into a usable fertilizer. The so-called ANPHOS® process is developed by Colsen B.V. and LambWeston/Meijer.

Disadvantages traditional methods

- Use of expensive chemicals
- Heavy environmental load
- Expensive handling/disposal of formed sludge

Advantages ANPHOS®

- Use of magnesium cheaper
- Low environmental load
- Simultaneous NH4-N removal
- Formed struvite can be used as fertilizer
- Cradle to cradle phosphorous
- Advantages in following aerobic treatment; less aeration energy requirement, formation of less sludge with a better quality

Successful test period

The first ANPHOS® installation with a capacity of 100 m3/h was put into use in February 2004 and is in continuous operation ever since at LWM WWTP. At the end of July, the installation was expanded to a capacity of 200 m3/h. ***Grants***

Partners LambWeston/Meijer and Colsen have worked since 2002 at the development of the ANPHOS® technique. For the research and the tests there has been received governmental subsidy of the environmental technology program of NOVEM. The full scale plant was built as a demonstration plant with LIFE projects subsidy of the European Community.

Eco-sustainable management of water and wastewater in rural communities: ECOMAWARU project (LIFE08 ENV/IT/000390)

The ECOMAWARU project started at March 2010 and closed at October 2013. The project was carried out in Varese Ligure rural community of Northern Italy.The municipality of Varese Ligure is a large, but sparsely populated territory; there are only about 2 400 inhabitants spread among more than 20 hamlets. Due to the high number of hamlets and related economic costs, the area is not completely served by a public sewer system.

So the aim of the project was, among other things, the development and the implement a water/wastewater management model in rural areas based on the adoption of the phytodepuration technique.

Two treatment plants have been built: one in the urban catchment area of S. PietroVara hamlet (500 I.E.), a photobioreactor, at pilot scale, with micro algae that has been installed at the outlet section of wastewater treatment plant; one in the rural areas of farmhouse (10IE) at Le Pezze hamlet, a pond, at full scale, with micro algae that has been installed at the outlet section of the Imhoff tank.

The main results of project are: the algal species dominating the phytodepuration systems has beenChlorophyceae(90%) and the average elemental composition of biomass was: C = 40.52%, H = 5.70%, N = 5.39%, P =2%, K= 1.1% and S = 0.20%. The biomass produced was easily separable by sedimentation and can be used as fertilizer for agricultural purpose. The nutrients removal for the both phytodepuration systems has been satisfactory: 35-50% for COD; 80-90% for N; 60-80% for P.

A new idea of hospital waste and wastewater management: PHARMAFILTER project (LIFE07 ENV/NL/000576

Pharmafilter represents a change in the way we work that positively enhances the work environment, patient safety and care.

It is an environmentally friendly way of dealing with complex waste, sewage and wastewater streams emanating from the hospitals.

It is a thoroughly integrated waste management system that at every interface delivers a significant improvement in the handling, removal and treatment of waste streams arising in hospitals.

Logistically and historically, waste in hospitals is removed and separated into various categories. This activity requires both significant staffing hours, physical infrastructure and recording (sorting rooms, internal and external storage, lifts etc.)

Pharmafilter system greatly simplifies the methods by which waste is handled and decontaminated and therefore reduces overall costs.

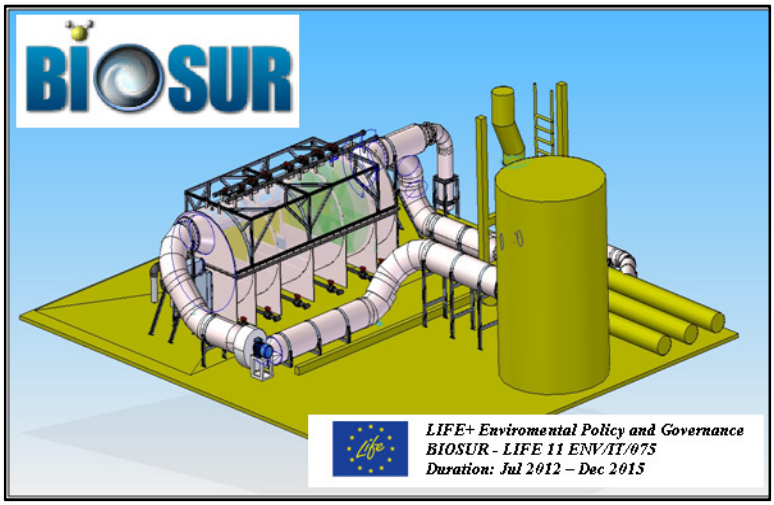
Eduardo van den Berg, founder, architect and joint CEO of Pharmafilter, will take through the journey of the prior eight years of Pharmafilter from concept to proof of principal, full-scale demonstration plant and todays commercialization.

The biological removal of hydrogen sulphide from gaseous steam: BIOSUR project (LIFE11 ENV/IT/000075)

The BIOSUR project stems from the need to mitigate environmental effects of the use of sulphide in tannery industrial process. H_2S desorbs from wastewaters and its presence in atmosphere negatively affects the air quality in tannery districts.

The objectives of the BIOSUR project are to demonstrate the applicability and the economical and environmental sustainability of an innovative biotechnology for the removal of hydrogen sulphide from contaminated gas streams. The new technology, based on the use of a Rotating Biotrickling Filter (RBTF), will allow to reduce chemicals and energy consumption and the overall carbon footprint of the treatment.

Hydrogen sulphide emissions control implies high carbon footprint and economic costs. The success of the project and the full scale application of the innovative technology will allow the implementation of new, and more sustainable, strategies for tannery wastewater treatment and will reduce economics and environmental costs of tanneries and other industries.



Monitoring the efficiency of full-scale oxygen transfer: AERE project

The AERE project, funded from Italian Environmental Ministery, deals with the increasing energy efficiency in wastewater treatment plants. In particular the project aims to realize a system for oxygen transfer efficiency measurements in operating conditions. The main purpose is to reduce energy consumption in wastewater treatment plants. The measuring instrument, designed and implemented within the project, uses off-gas method which is based on a mass balance, in the gas phase, on the whole oxidation tank.

The advantages of this method are:

- reliability;
- it does not require the interruption of the normal operation of the system;
- it allows the evaluation of the efficiency of different aeration systems in different process conditions.

The experimental activity was carried out in some Italian wastewater treatment plants.

The measurements allows:

- to evaluate oxygen transfer versus time;
- to identify problems in the aeration process (no efficient aeration systems, high oxygen concentration, treated wastewater properties, fouling or deterioration of aeration systems).

il progetto dei progetti

SHOWW

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Seguici su:

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