

ANALYSIS AND DESCRIPTION OF METHODOLOGY



The project is based on three pillars as follow:

1. Development, training and transfer of experience on state-of-the art analytical methods and preparation techniques for the selected compounds
2. Application of reliable biological assays for the assessment of the selected compounds and whole effluents potency (toxicity, estrogenicity)
3. Investigation of the fate and behavior of selected xenobiotic compounds during photocatalytic wastewaters treatment



PARTNERS



University of Cyprus

<http://www.ucy.ac.cy>



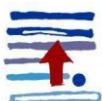
Technical University of Crete

<http://www.tuc.gr>



S.K. EUROMARKET LTD

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**Cyprus Research Promotion
Foundation**

<http://www.research.org.cy>



REPUBLIC OF CYPRUS



STRUCTURAL FUNDS
of the European Union in Cyprus
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**Development of a solar
technology for the
removal of effluent
organic matter from
urban wastewater**

SolTec

AEIFORIA/ASTI/0308/01/BIE

Project duration: 24 months

**The project is funded by the
Cyprus Research Promotion Foundation**

MAIN OBJECTIVES



- Promote a scientifically verified technology i.e Solar Photocatalysis (SPC) for the depletion of xenobiotics contained in the EOM from urban wastewater intended for reuse
- Establish an updated background in regards to the standing policy and legislation concerning wastewater treatment and reuse schemes, to the state-of-the-art technical developments in SPC, and to achievable removal levels for the selected model substances with alternative treatments
- Determine the engineering/technological parameters needed for the scale up of the SPC process
- Design, construct and operate the SPC membrane integrated pilot plant
- Assess and optimize the operation of the pilot plant

- Demonstrate that the coupling of solar photocatalysis and biological treatment is a feasible and cost effective solution for the UWTP and reuse schemes and for the removal of the remaining effluent organic matter EOM that contains endocrine disrupting compounds, pharmaceuticals and other recalcitrant xenobiotic compounds
- Decrease the final disinfectant demand, and therefore reduce the formation of disinfection byproducts during chlorination



PROJECT INNOVATION



- The integration of Heterogeneous and Homogeneous photocatalysis and conventional Urban Wastewater Treatment for the elimination of recalcitrant xenobiotics in real wastewater and maximization of EOM removal
- The use of solar light for the energy needs of the photocatalysis.

The background for initiating the project is the high public awareness on the effects of xenobiotic organic compounds and especially disrupting chemicals (EDCs) on wildlife and humans. Such compounds are contained in the remaining effluent organic matter (EOM) of the treated sewage.

Particularly, this project is motivated by: (1) the widely implemented wastewater reuse practices in Cyprus and (2) the increasing number of reports related to the existence of xenobiotic organic pollutant in the outlet of conventional UWTPs worldwide.