The main limitation for the long-term operation of BTF in biogas sweetening is the accumulation of elemental sulphur due to oxygen mass transfer limitations. Apart from reducing the removal efficiency, this accumulation of packing material is an influent factor in H2S removal and the operating life of the BTF is extended if in minimally the abatement efficiencies currently obtained.

In the present study, the dynamic model developed and validated by Rodriguez (2013) has been used to evaluate different control strategies and optimize the performance of a BTF located in the WWTP. Particularly, the use of different kind of packing materials (organic and inorganic) has been evaluated to determine in different operation conditions which removal efficiency (RE) and sulphur accumulation could be expected, in order to avoid the polymerization of packing material.

**Results and Discussion**

The proposed technique has proven its suitability to study different strategies (without using a pilot plant), to evaluate different operation strategies, and, finally, to optimize processes. After evaluating different strategies with the BTF mathematical model, it can be concluded: the area of packing material is an influent factor in H2S removal and the operating life of the BTF is extended if in each module of the BTF an appropriate contact area is selected.

**References**
