The Università Politecnica delle Marche of Italy acquires a double reactor respirometry system model BM-EVO2 from Surcis

BM-EVO2 Multipurpose Respirometry System

The company Surcis, S.L. has just been supplied double reactor BM Multifunction BM-EVO2 Respirometry System to the Dipartimento Scienze, Ingegneria della Materia, dell'Ambiente e Urbanistica (SIMAU) at the Università Politecnica delle Marche in Italy.

The most important points for the decision to acquire the BM-EVO2 from Surcis were the fact that the BM-EVO2 respirometer is equipped with two reactors and the exclusive software that, due to its special flexibility, allows to address different types of important Applications.
Also of special importance was the Department's knowledge of the important technical support that Surcis provides to users of its BM respirometry systems.

SIMAU

The research activity of SIMAU is supported by a series of laboratories and high-level infrastructures that allow it to carry out not only a qualified research activity, both basic and applied, but also a service activity towards public and private organizations and companies, both at regional and national level.

The department carries out research and studies related to the development of innovative materials, the optimal management of natural resources, the recovery and conservation of the environment and the territory, the protection of assets of artistic value and engineering works in general.Likewise, SIMAU researchers actively collaborate with other universities, agencies and research institutes, and participate in national and international research programs.

University delle Marche in Ancona (Italia)


SIMAU

In particular, in SIMAU Department, the Research Group of Water and Waste Environmental Engineering Lab (WWEELab) is coordinated by Prof. Francesco Fatone and is managing several research projects funded by major EU research programmes. Besides national and international projects, the WWEELab coordinated the Horizon2020 Innovation Action “SMART-Plant” and has been or is WP leader/partner of: >10 Horizon2020 projects, n.2 PRIMA/Horizon2020; n.1 Water JPI; n.2 LIFE; n.1 ENI CBC Med, n. 4 Horizon Europe and n. 2 INTERREG projects.

Moreover, the UNIVPM is a member, as the SMART-Plant Coordinator, of the steering committee of the first signed Innovation Deal concerning water reuse, member of ICT4water cluster and co-leader of the "Value in Water" Cluster of Water Europe platform. Furthermore, WWEELab manages several applied research projects, commissioned by waste and wastewater utilities and public authorities (i.e. CAP Holding Spa, HERA Spa, A2A Spa, IREN Spa, SMAT Spa, CIIP Spa, ATS Spa, etc). The research fields can be divided into the following 5 macro-areas: Resource recovery technologies in the urban water cycle, Stormwater Treatment and management, Digital solutions for carbon footprinting and environmental/ economic assessment, Advanced water and wastewater treatment and Organic waste treatment and valorisation.

WWEELab at Department SIMAU can count on a 200 m^2-large pilot/demo hall located in the municipal wastewater treatment plant of Falconara Marittima (Ancona), where advanced treatment and valorization technologies for wastewater, wastes and sludge are validated in real environment.

The research group is therefore allowed to operate and validate eco-innovative solutions in real conditions, carry out research and development activities at the highest levels of experimentation and pre-industrial application.

Moreover, the group can count on 2 experimental laboratories: 1) the Smart WaterLab where equipments for chemical characterization of drinking water, for chemical-physical characterization of civil or industrial wastewater and spectrophotometric analyses can be performed; 2) Chemical-Environmental -Sanitary engineering Laboratory, where equipments for chemical-physical characterization of organic wastes and sewage sludge, lab-scale reactors for simulation of biological processes and thermo-chemical processes can be performed.


Experimental pilot hall is located at the Vallechiara wastewater treatment plant in Falconara Marittima (Ancona)

Typical Applications that can be developed with the BM-EVO2

Typical applications we can mention are the quick evaluation of the current state of the biomass and process ("take the pulse"), the analysis of the impact of industrial discharges on the biological activity of the sludge, the COD fractionation, actual oxygen requirement in the biological treatment, monitoring of the actual state of the aeration system, nitrification rate, denitrification rate and many others.

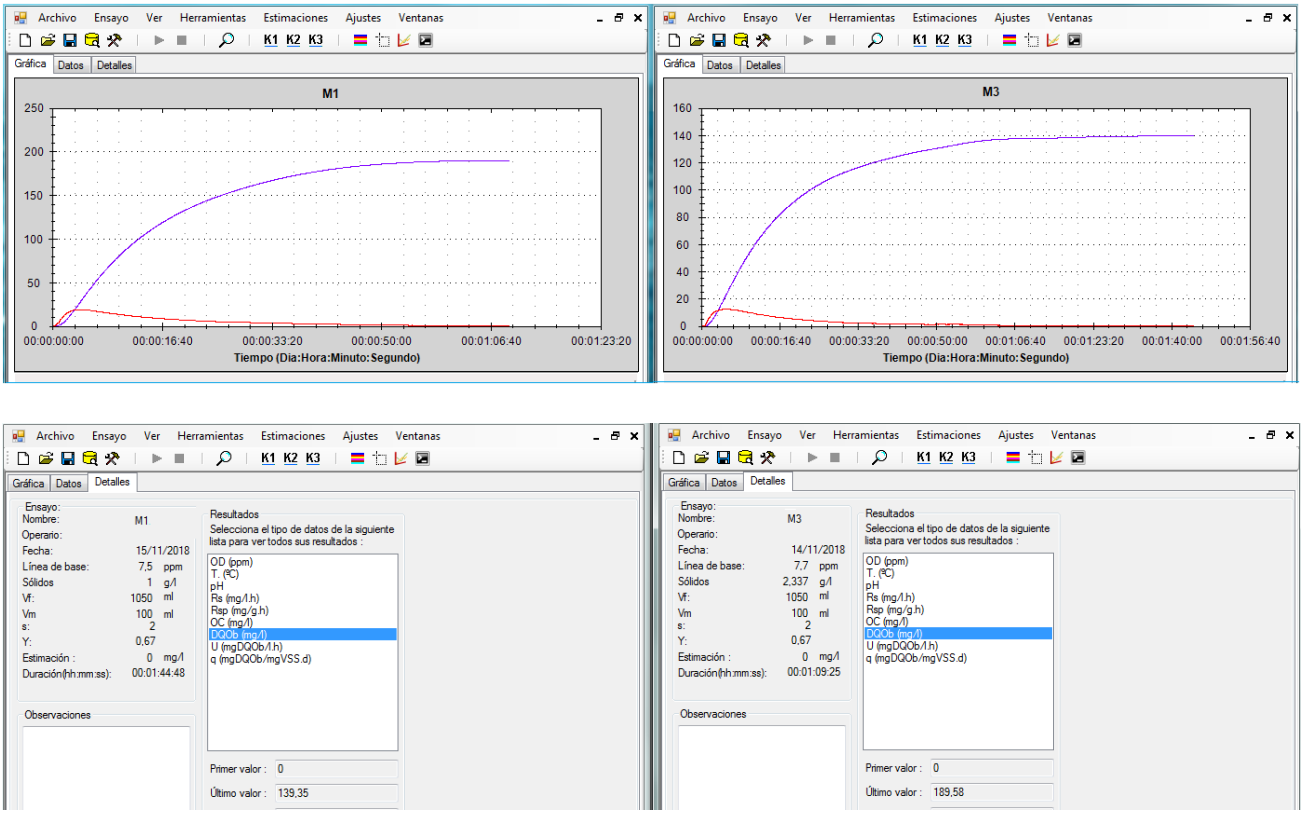
BM-EVO2

Together with the BM-Advance2 model, the BM-EVO2 is the only respirometer on the market with two isolated reactors that can operate simultaneously with three types of working modes (OUR, Cyclic and Dynamic R). Each operating mode includes a programmable automatic control of temperature, oxygen and sample volumes.

By other side, like the rest of BM models, the special "biomass-carrier" reactors can also be adapted for biomass carriers of moving bed processes (MBBR and granular biomass)

The BM-EVO2 operate by means a double software loaded on a single computer.
It has a specific adaptation to be able to automatically generate the respirograms of the different measurements that are carried out in each reactor on simultaneous mode.

From both software units in operation, the system supports the ability to display respirograms and results in real time for comparison and display of the different test screens performed graphically (respirogram) and tabular.



Simultaneous respirograms and results from, the tests performed in each reactor

BM Respirometry Systems in Italy

This BM-EVO2 for the University of the Marche is the Forth double reactor respirometry system in Italy. The others are in Department of Biotechnology of the University of Verona (BM-EVO2), A2A Ciclo Idrico (BM-Advance2) and Consorzio Aquarno SpA (BM-EVO2)
It is also the Sixth BM respirometer in Italy.

Thus, the presence of BM Respirometry in this country seems to be progressively and significantly expanding.

With this acquisition, Surcis continues to consolidate its worldwide position as a benchmark in laboratory respirometry systems in Universities, main Water Groups and Industries, with a progressive and important expansion of its references at national and international level.