

BIO-MONITORING AND AUTOMATIC MICROBIOLOGICAL CONTAMINATION CONTROL SYSTEM OF INDUSTRIAL HYDRAULIC CIRCUITS

Duration Start Date:01/01/2013 – End date: 31/12/2015

OBJECTIVE

Validate and demonstrate a new technology that allows the real time monitoring and quantification of aerobic microorganisms present in the water of a hydraulic system, and the subsequent correct dosage and constant optimisation of the biocide to minimise these microorganisms. An industrial-scale prototype of the plant has been constructed and put into operation to demonstrate the technique in two representative Spanish textile companies with very different hydraulic systems, both of whom require disinfection systems: the cooling towers of a finishing company and the air-conditioning system of a weaving company.

Industrial-scale Prototype



Structured Circuit



Dosing System



Programmable Logic Controller (PLC)

Advantages and benefits of the end-users:

PASCUAL Y BERNABEU S.A. (with cooling towers)

- Control and monitor the amount of free chlorine between 0,8-1,2 ppm with high accuracy.
- Reduce biocide consumption by 50-66% compared to conventional methods, representing 1.824 €/year savings
- Control and monitor the bacterium growing below 10.000 ufc for principal water contamination (80.000-240.000).
- Depending on the bacterium concentration, the prototype analyses 1 or two samples per day, when the bacterium concentration is below 10.000 the prototype produces results within 24 hours.

RAMÓN ESPÍ (with air-conditioning system)

- The pH levels must be between 7-8 pH units and the conventional system controls this parameter without any problems.
- Free chlorine concentration values are usually above 2 mg/L, while they should be between 1-2 mg/L.
- Results confirm the necessity for a new system to control a more accurate biocide dosage in order to avoid excess quantities of chlorine in the environment.

Visit the project website to obtain more information:

www.biomomi.eu



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