



Case Study CS-96

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ION Science Falco fixed PID helps improve odour treatment plant efficiency

With environmental legislation in relation to odour management becoming increasingly more stringent, Italy-based Tecnologia & Ambiente (T&A) has purchased a Falco fixed, continuous photoionisation detector (PID) from ION Science Italia leading manufacturer of gas detection instrumentation for environmental and occupational health monitoring applications – as a key component of its newly developed Online System for Monitoring Odours Treatment Efficiency (OSMOTREFF).



T&A was established in 2010 as a division of the Polytechnic of Bari. The company offers a wide range of environmental services including waste management, reclamation of polluted sites and treatment of waste water and emissions. Backed by highly qualified staff including industrial chemists and environmental engineers, T&A can offer tailor-made solutions for complex applications in chemistry and environmental engineering applications.

T&A's OSMOTREFF is a pilot system specially designed to analyse odour treatment facilities. Once connected to odour treatment plant using physical chemical absorption, such as chemical scrubbing and activated carbon filtration, the innovative OSMOTREFF provides on line monitoring of treatment efficiency and can conduct pilot tests on effluent gases to help further improve the process.

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The odorous compounds contained in conveyed gaseous flows are difficult to monitor continuously because of their multiplicity, the peculiarity of the specific application and the sampling and analysis methodology.

Ion Science's Falco PID is installed on T&A's OSMOTREFF and represents one of the key components of the system. It provides continuous, online measurement of volatile organic compounds (VOCs) in both inlet and outlet conveyed gas streams that have odour problems.

T&A's Roberto Pisconti comments: "Odorous molecules are typically found in VOCs with a market tendency to be present in the vapour phase. Many VOCs contained in gas streams generate odours and, for a given process, in most cases there is a direct correlation between the concentration of VOCs and amount of odorimetric units in accordance with European Standard EN13725, Air quality – determination of odour concentration by dynamic olfactometry.

"Once this correlation has been determined, a Falco PID can be useful for easy online monitoring of VOCs and indirectly of odorimetric units on outlet conveyed gas streams.

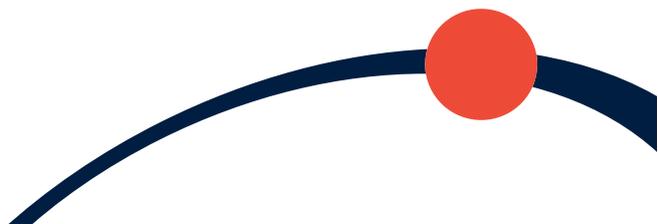
Roberto continues: "In Italy, a new legislation with specific odour limit thresholds has also been recently introduced making it ever more important for companies that have treatment in their processes to monitor and improve the treatment efficiency of their systems in line with regulatory requirements.

"Ion Science and its products are well known across our business so we were confident in the Falco's ability to reliably and accurately measure VOCs in both inlet and outlet gas streams," he adds.

Most gas streams cause condensation. Although T&A's OSMOTREFF incorporates a feature that can dilute the gas sample in order to avoid condensation, it can still occur making it essential to have an instrument with condensation resistant design.

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A 0-3000 parts per million (ppm) detection range can cover most petrochemical applications. For other applications, 0-1000 ppm may be suitable.

The Falco PID operates in conjunction with T&A's OSMOTREFF system with a pilot test on conveyed gas streams taking from two hours up to several days, depending on the application requirements.

Data from the Falco PID is easily recorded and downloaded using a USB memory stick and then loaded in a PC for viewing and processing.

Roberto Pisconti concludes: "Since Ion Science Italia provided training, we have found the Falco very easy to use and operate, and it has been excellent in terms of accuracy and reliability. The service has also been very good and they were quick to respond when we needed assistance with calibration. "

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