KWR Watercycle Research Institute

- STUDY ON WATER PIPE
- FLEXIBILITY & AUTOMATION
- COST AND SPACE SAVING

A SOLID BUSINESS CASE IN COLLABORATION WITH
KWR Watercycle Research Institute

GENERAL INFORMATION ABOUT THE PROJECT

TARGET OF THE PROJECT:
Mimicking the upper water layer of a rapid sand filter to study effects of various ions in water on the oxidation kinetics.

DEPARTMENT:
Water systems and technology

HEAD OF PROJECT MANAGEMENT:
Erwin Beerendonk

ROLE OF MCQ INSTRUMENTS:
To control the gas mixtures.

MORE INFORMATION ABOUT THE COMPANY

The availability of sufficient clean water has become a societal issue all over the world. In its water-wise world research programme KWR works on the optimal organisation and management of the water cycle, with a circular economy as a key driver and the UN's Sustainable Development Goals in mind. Research at KWR is guided by a scientific vision, which is embodied in five research programmes.

DESCRIPTION OF THE APPLICATION AND THE TARGET

KWR generates knowledge to enable the water sector to operate water-wisely in our urbanised society. KWR stems from Kiwa, a certification institute for water pipe articles, established in 1948. In this project, KWR looks at iron oxidation in the upper part of rapid sand filters.
To study effects of various ions in water on the oxidation kinetics, KWR wants to control dissolved oxygen continuously while keeping alkalinity constant. This lab study will be combined with very hot data from X-ray absorption spectroscopy, which will be obtained at a synchrotron.

This data will allow KWR to couple detailed chemical composition of formed iron oxide deposits in real application rapid sand filters from several locations in the Netherlands to our well-controlled lab study on the effect of ions.

BENEFITS AND SAVINGS

GAS MIXER VS GAS CYLINDER

The ability to blend different gases on-demand is an incredibly powerful tool in the development of innovative gas detection equipment.
And provides a level of flexibility that gas cylinders cannot provide. Mixing of gases allowing for analysis of sensor response over a wide range of concentrations.

COSTS AND SPACE SAVINGS:

Significant reduction of number of gas mixtures required for initial sensor characterization.
Usually one mixture and balance gas is enough.
Buying cylinders is expensive and limits the availability of mixtures that may be required. Gas cylinders are also large and often require special storage arrangements, as well as taking up valuable space.

FLEXIBILITY & COMPACTNESS:

By using the MCQ gas blender it is possible to dial up a simulation of a mixture at any time, and to a certain degree, different concentrations of the blended gas mixture. Compact gas blending solution that can be used in many applications, easy to transfer and operate.

SOFTWARE AUTOMATION:

Thanks to our Software PRO Version and its option "Automatic Program", now the KWR can bring forward experiments in automation. Moreover Software is easy to operate (no need for long training of personel).

STABLE FLOW & REPEATABILITY:

Thanks to our revolutionary method every gas flow has a great stability as KWR can easily conduct repeatability tests that can be used to verify components quality.

SUCCESSFUL ACHIEVEMENT:

The MCQ gas blender is used for measurements of cross sensitivity of gas sensors to gases which might potentially occur in field application.
Allowing on-demand, real time characterisation of sensors.

READY TO TALK ABOUT YOUR SOLUTION?

info@mcqinst.com - www.mcqinst.com