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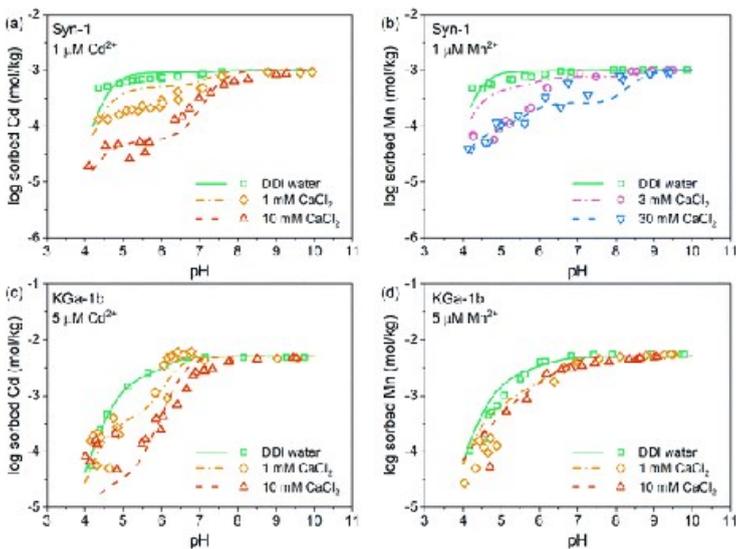
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Investigating pH affect on Cadmium levels

Elevated concentrations of cadmium in agricultural soils are of widespread concern due to its high toxicity. Cadmium causes liver and kidney damage and increases the risk of cancer. The World Health Organisation labelled it as one of the "ten leading chemicals of concern". Dissolved cadmium in soils occurs from, amongst other sources, agriculture, industrial and mining activities. Plants like rice accumulate cadmium. Clay soils absorb cadmium and other metal ions like manganese.

Researchers in Zurich are assessing the influence of manganese on cadmium and attachment to clay soils. They predicted that elevated manganese ion concentrations would decrease cadmium attachment.

Part of the process involved taking measurements at different pH levels. The scientists used a Microlink to connect four burettes to a computer. The Microlink monitored the pH of clay suspension during acid-base titrations.



Windmill software logged the pH

Unexpectedly, the team observed an increase in both manganese and cadmium with increasing pH. They concluded that in contaminated paddy fields used for rice production, manganese increased the retention of cadmium in the presence of clay minerals.

Further reading

Natacha Van Groeningen et al, [Surface precipitation of Mn²⁺ on clay minerals enhances Cd²⁺ sorption under anoxic conditions](#), Environ. Sci.: Processes Impacts, 2020, Advance Article DOI: 10.1039/D0EM00155D

Your Data Acquisition Questions Answered: Memory Size of Data Acquisition data logger

Question

A quick question. The memory of the Microlink 851 is stated as 65000 scans. Is this per channel or in total? If it's in total is there anyway the memory could be expanded to hold say 250000 or half a million scans?

Answer

One scan comprises a reading from each channel (eg each strain gauge or thermocouple). So with 16 channels the [Microlink 851 data logger](#) would store 16 x 65000 or 1040000 data points.

DAQ News Round-up

Welcome to our round-up of the data acquisition and control news. If you would like to receive more timely DAQ news updates then follow us on [Twitter](#) - [@DataAcquisition](#) - or grab our [rss feed](#).

Stretchable sensor detects nitrogen dioxide

A stretchable, wearable gas sensor for environmental sensing has been developed which uses newly developed laser-induced graphene foam

Source: Penn State University

<https://news.psu.edu/>

Break-through sensor for drones detects power lines

A novel sensor lets drones detect and avoid energised power lines.

Source: U.S. Army CCDC Army Research Laboratory

<https://www.army.mil/>

Understanding locust swarms could improve collision avoidance

Low-power collision detector mimics locust avoidance response

Source: National Science Foundation

<https://www.nsf.gov/>

New LiDAR Sensor Uses Mirrors to Achieve High Efficiency

Light Detection and Ranging (LiDAR) technology relies on fast, precisely timed laser pulses - a useful application for various kinds of sensors, including those that support the Internet of Things (IoT).

However, until now sensors that rely on LiDAR were expensive, bulky, heavy and power hungry.

Source: The University of Chicago

<https://spectrum.ieee.org/>

Underwater robots reveal habits of endangered whales

Unmanned underwater gliders equipped with acoustic monitors recorded the sperm whale sounds over several months and 1000s of kilometres of ocean. Continuous day and night monitoring during winter months suggests different foraging strategies between different areas.

Source: SCUBA News

<https://news.scubatavel.co.uk/>





Sperm whale

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Windmill Software Ltd, PO Box 58, North District Office,
Manchester, M8 8QR, UK

Telephone: +44 (0)161 833 2782

Facsimile: +44 (0)161 833 2190

E-mail: monitor@windmillsoft.com

<https://www.windmill.co.uk/>

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