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An auto self-cleaning filter for on-line analyzers

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In most water treatment plants, there are many on-line analyzers. Line clogging, especially in the run-off time each year, has always been a very serious problem for these analyzers. It often makes the measurement very difficult, if not impossible. In order to eliminate the clogging problem, an auto-self-cleaning filter has been designed, constructed, and tested. The design and construction was done in house. To keep the cost as low as possible, most of the material and parts used in this project were harvested from old equipment. The filter consists of a Y-shaped strainer with one two-way and one three-way solenoid valve. It is fully automatic and functioning as the following: Raw water get into the Y-shaped strainer, clean water passing through the screen and directed into the monitoring devices (the Analyzer) at programmed times; Sediment accumulated in the other branch of the Y- shaped strainer is drained at programmed moments; The filter is then self-back-washed by a clean water stream after receiving a signal from the analyzer. Each function-change is indicated by a color-changing LED and the function of each operation stage is displayed on an LCD panel. This filter can be used for sample-conditioning on on-line GC for raw water analysis. Modified / simplified version of this device can be used for any other on-line analyzers. It will prevent the line clogging, reduce instrument down-time, enhance data quality and further contribute to drinking water safety.

Biography

Yuhui (Henry) Zhao completed his PhD in Analytical Chemistry from the University of Alberta in 1995. He has been working in a few analytical laboratories for the past 20 years as a Senior Scientist. His research and development interests cover the areas of Inductively Coupled Plasma (ICP)-Optical Emission Spectroscopy, ICP-Mass Spectrometry, GC and GC-Mass Spectrometry. He is currently working as a QA Scientist at Epcor Water Service Inc., Edmonton, Alberta, Canada.

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