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An innovative apparatus for water analysis

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Hydronova 20.10 is an innovative apparatus for water analysis, specifically designed and manufactured in order to combine the maximum efficiency and the minimum technical complexity. Hydronova 20.10 has been conceived as a diagnostic robot able to automatically estimate all those chemical parameters usually analyzed by colorimetric means, following the international standard methods. One of the most important advantages of Hydronova 20.10 is represented by the low maintenance costs. In addition, this apparatus is efficient, reliable and simple. The core of the apparatus is based on a new volumetric measuring technique that allowed designing an original photometric cell (Bedendo and Taschin, 1992; Bedendo, 1992). All the analytical phases are carried out inside the cell: sample and standard loading, volumetric dosage, chromatic reaction development, photometric differential measurement. Samples and standards are delivered and transferred by a pump into the cell; afterwards, their exact volume is determined by centrifugation with a magnetic stirring device in order to assure high measurement reproducibility (Bedendo and Taschin, 1995). The overflow is discharged from the cell, while 3 four-ways peristaltic pumps deliver the required reagents. Finally, the cell is emptied and washed. All these process steps are automatically operated by specific software, which not only shows all the measured parameters on the screen and memorizes them in a database, but also provides to send them to a master station if required. Hydronova 2010 has been successfully applied and several new applications are foreseen in the field of environmental diagnosis.

References

Bedendo, A.. Taschin, R. (1992), Inquinamento, 11, 117