

Virtual instrument for water quality parameters measurement

Publisher: IEEE Cite This PDF

Rui Peixeiro ; Octavian Postolache ; José Miguel Dias Pereira All Authors

1 Paper Citation

136 Full Text Views

Export to Collabratec Alerts

Manage Content AlertsAdd to Citation Alerts

More Like This

Distributed virtual instrument for water quality monitoring across the Internet  
Proceedings of the 17th IEEE Instrumentation and Measurement Technology Conference [Cat. No. 00CH37066]  
Published: 2000

A Smart Sensing Node for Pervasive Water Quality Monitoring with Anti-Fouling Self-Diagnostics  
2018 IEEE International Symposium on Circuits and Systems (ISCAS)  
Published: 2018

Show More

Abstract

Document Sections

I. Introduction

II. System Description

III. Calibration and Experimental Results

IV. Conclusions

Authors

Figures

References

Citations

Keywords

Metrics

More Like This

Footnotes

Download PDF

**Abstract:**Due to the nowadays demanding for the environmental concerns and the growing importance of the pollution reduction for a sustained development, the water quality monitori... **View more**

**Metadata**  
**Abstract:**  
Due to the nowadays demanding for the environmental concerns and the growing importance of the pollution reduction for a sustained development, the water quality monitoring it's very important and useful to study the physical and chemical characteristics of all kind of water and essential to understand the needs to protect and recover the quality of one element which is vital to all of us and also all the beings who surround us. The present work has the target to develop a low cost virtual instrument for water quality parameters measurement. The developed system allows to measure three of the most important physical variables in water quality monitoring that are: electrical conductivity, temperature and turbidity. An important characteristic is the flexibility to add also other measurement channel without significant change of the system hardware component. Making measurements for several hours in remote locations is possible due to system autonomy provided by appropriate battery supply selection. The designed and implemented virtual instrument is characterized by accuracy that satisfied the application requirements of water quality assessment in rivers and estuaries.

**Published in:** 2012 International Conference and Exposition on Electrical and Power Engineering

**Date of Conference:** 25-27 Oct. 2012 **INSPEC Accession Number:** 13326191

**Date Added to IEEE Xplore:** 19 February 2013 **DOI:** 10.1109/ICEPE.2012.6463829

**Publisher:** IEEE

Contents

I. Introduction

Nowadays is reported the existence of commercial water quality measurement systems for industrial or laboratory application which are many times expensive individual instruments with high accuracy or multiparametric devices also of high economical cost which go far

beyond the required accuracy to making common measures in rivers, lakes or even oceans. For the preliminary detection of changes in the quality of water, a less accurate system is many times enough, and to the desired application of measure the electrical conductivity, temperature and turbidity or even more variables, it is nice to find low cost solutions with accuracy enough. Through the measurements of these variables we can detect changes in water environments and study if the causes of those modifications are natural or not like in the case of pollution.

Authors	▼
Figures	▼
References	▼
Citations	▼
Keywords	▼
Metrics	▼
Footnotes	▼

IEEE Personal Account	Purchase Details	Profile Information	Need Help?	Follow
CHANGE USERNAME/PASSWORD	PAYMENT OPTIONS	COMMUNICATIONS PREFERENCES	US & CANADA: +1 800 678 4333	f in t
	VIEW PURCHASED DOCUMENTS	PROFESSION AND EDUCATION	WORLDWIDE: +1 732 981 0060	
		TECHNICAL INTERESTS	CONTACT & SUPPORT	

IEEE Account	Purchase Details	Profile Information	Need Help?
» Change Username/Password	» Payment Options	» Communications Preferences	» US & Canada: +1 800 678 4333
» Update Address	» Order History	» Profession and Education	» Worldwide: +1 732 981 0060
	» View Purchased Documents	» Technical Interests	» Contact & Support