

## 摘 要

我们的生活生产离不开水，水的质量和存储量也影响着我们的社会发展，但是水资源是有限的，尤其是淡水资源，一方面面临着严重的污染，另一方面面临着浪费严重和人均不足的窘境，因此，水资源的保护和水质的优劣就成为了我们共同的话题。

本课题设计一种水的自动监控系统，该系统可以应对水温，水的溶氧量、PH值、浊度等进行实时的测量，通过这几个指标来判断水的质量是否合格，然后通过液晶显示器将水的这些指标实时的显示出来，工作人员可以通过按键来设定检测的标准，一旦系统检测到水体的致谢指标超标，则控制相应的电路对水进行再处理，直到各项指标都达到指定的要求，系统还设有多路的开关控制装置，可以实现对不同设备的控制，上位机通过总线连接系统，实时的接收下位机传来的数据，并存储起来。根据当前我国的水处理现状，设计并完善自动监控系统有利于水处理系统的发展，为我国的水资源减轻压力，实现水的良性循环，保护水资源。

**关键词：**单片机；自动监测；水质传感器

## Abstract

Our life and production from the boiling water, the water quality also affects the development of our society, but the water resource is limited, especially freshwater resources, on the one hand is faced with serious pollution, on the other hand, facing the serious waste and per capita shortage dilemma, therefore, the protection of water resources has become our common topic.

Automatic monitoring system of this project is to design a kind of water, the system can deal with the water temperature, dissolved oxygen, water pH and conductivity were measured in real-time, through several indicators to determine whether the water quality, water and then these indexes in real time through the LCD display, the staff can be key to set the detection standard, once the system detects water for corresponding control indicators exceed the standard, the circuit of water for processing, the indicators have reached until the specified requirements, the system also has a switch control device, can realize the control of different baid preparation of the PC through the bus connection system, receiving machine the real-time data transmitted and stored. According to the current situation of water treatment in China, the design and improvement of automatic monitoring system is beneficial to the development of water treatment system, reducing the pressure for water resources in China, realizing the virtuous cycle of water, and protecting water resources.

**Key words :** Single chip microcomputer, water quality detection, switch quantity, temperature sensor

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