
流体实验用液位监控装置设计

摘 要

当今社会，液位测量与监控装置随着科技的迅猛发展，已经在各个领域被广泛应用。科技的进步还带来了压电泵这种具有革命性意义的产品被快速研制出来并投以应用于石化行业、生物行业等精密场所。几乎所有产品的研究都是从实验室开始的，压电泵也不例外。而在压电泵的实验研究时，为了研究压电泵的各项性能指标，都会搭建一压电泵实验平台。而在对压电泵进行参数测试时，实验平台无法给压电泵提供一恒定水压，也就无法保证压电泵工作性能测试的准确性。

本课题针对当前压电泵实验平台无法给压电泵提供恒定入口水压的缺点，采用超声波传感器与 AT89S51 单片机研制一种流体实验用液位监控装置。该装置不仅可以弥补上述缺点，而且可以灵活设置压电泵入口水压大小以满足压电泵多种参数测试需要。

随着这款流体实验用液位监控装置的设计，会给压电泵研究提供更准确的参数，促进压电泵的发展。

关键词：液位监控；超声波传感器；AT89S51 单片机；压电泵

Design Of liquid Level Monitoring Device For Fluid Experiment

ABSTRACT

Nowadays, with the rapid development of science and technology, liquid level measurement and monitoring devices have been widely used in various fields. With the development of science and technology, piezoelectric pump, a revolutionary product, has been rapidly developed and applied in the petrochemical industry, biological industry and other precision places. Almost all product research is started in the laboratory, piezoelectric pump is no exception. In order to study the performance of piezoelectric pump, a piezoelectric pump experimental platform will be built. When testing the parameters of the piezoelectric pump, the experimental platform can not provide a constant water pressure for the pump, and it can not guarantee the accuracy of the performance test.

In order to solve the problem that the current piezoelectric pump test platform can not provide a constant inlet water pressure for the piezoelectric pump, an ultrasonic sensor and AT89S51 single chip microcomputer are used to develop a liquid level monitoring device for fluid experiment. The device can not only make up for the above shortcomings, but also flexibly set the inlet water pressure of the piezoelectric pump to meet the needs of various parameters testing of the piezoelectric pump.

With the birth of this liquid level monitoring device for fluid experiment, it will provide more accurate parameters for piezoelectric pump research, Promote the development of piezoelectric pump.

Key Words : Liquid Level Monitoring; Ultrasonic Sensor; AT89S51 Single Chip Microcomputer; Piezoelectric Pump

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