

# 目 录

摘要 .....	1
关键词 .....	1
<b>Abstract</b> .....	1
<b>Key words</b> .....	1
引言 .....	2
1 系统总概述 .....	2
1.1 硬件方框图 .....	2
2 硬件设计 .....	3
2.1 STC89C52 单片机简介.....	3
2.1.1 单片机的选择 .....	3
2.1.2 最小系统的实现.....	4
2.2 甲醛检测系统 .....	5
2.2.1 ZE08-CH20 型甲醛传感器 .....	5
2.2.2 甲醛传感器电路图.....	6
2.2.3 甲醛传感器通信协议.....	6
2.3 温度湿度检测系统.....	7
2.3.1 温湿度传感器介绍.....	7
2.3.2 温湿度检测电路.....	7
2.4 按键模块 .....	8
2.5 液晶显示模块 .....	9
2.5.1 LCD1602 介绍 .....	9
2.5.2 LCD1602 电路连接图 .....	10
2.6 报警电路 .....	10
2.7 电源电路模块 .....	11
3 软件设计 .....	12
3.1 主程序模块 .....	12
3.2 报警模块 .....	13
3.3 按键模块 .....	14
3.4 液晶显示 .....	15
4 结论 .....	16
参考文献 .....	17
附录 A 原理图 .....	18
附录 B PCB 图 .....	19
附录 C 源程序 .....	20
致谢 .....	35



## 智能室内环保监控系统设计

**摘要:** 室内环保质量对居住环境有很大影响,我们每个人有三分之二时间在室内度过,检测室内环境指数尤为重要。论文对室内甲醛的含量、温度湿度的高低设计检测系统。通过选择控制核心、甲醛传感器、温湿度传感器和显示报警模块来设计硬件电路,并通过软件编程实现相应功能。设计的系统首先需要设置达标值,然后对采集到的数据信息交给单片机内部运算处理,把处理结果传到显示模块显示室内的甲醛含量、温湿度数值。检测结果如果和最初设定的上下限值不符合时,报警电路就会发出报警声并点亮相应指示灯,可以实时监测室内环境。

**关键词:** STC89C52 单片机; 甲醛检测; 温度湿度检测; 报警显示

## The Design of the Intelligent Indoor Environmental Monitoring and Control System

**Abstract:** The quality of indoor environmental protection has a great impact on the living environment. Each of us spends two-thirds of our time indoors. It is particularly important to test the indoor environmental index. This paper designs a detection system for indoor formaldehyde content, temperature and humidity. The hardware circuit is designed by selecting control core, formaldehyde sensor, temperature and humidity sensor and display alarm module, and the corresponding functions are realized by software programming. The designed system first needs to set up the standard value, and then the collected data information is sent to the microcontroller for internal calculation and processing, and the processing results are transmitted to the display module to display the indoor formaldehyde content, temperature and humidity values. If the test results do not conform to the initial upper and lower limits, the alarm circuit will emit alarm sounds and light corresponding indicator lights, which can monitor the indoor environment in real time.

**Key words:** STC89C52MCU; Formaldehydedetection; Temperature andHumidity Detection; Alarmdisplay

以上内容仅为本文档的试下载部分,为可阅读页数的一半内容。如要  
下载或阅读全文,请访问:

<https://d.book118.com/837024051006010011>