

# 采用 ZigBee 技术为核心智慧教室设计

## 摘 要

随着时代的高速发展，人们对家居智能化的需求越来越大，所以物联网借此机会得到了发展，为了加强学生的学习效率与学习环境，智慧教室便脱颖而出。无线传感技术，嵌入式技术等多种技术都包含在物联网技术中。智慧教室在以物联网技术为核心基础建成。使得教室变得更加智能化、多元化与信息化。

本设计采用 ZigBee 技术为核心来设计智慧教室。本设计也对需要使用到的技术进行了说明，利用 ZigBee 技术、RFID 技术等来完成本设计。本次设计使用 CC2530 开发板和 DHT11 温湿度传感器与 BH1750 光照传感器等传感器搭建起无线传感器网络并来与智慧教室的网关相连接从而实现教室内电器的管理。

该智慧教室设计完善，实现方案简单易行。采用软件设计来控制，可以实现灯光控制，环境控制，优化了教学环境与教学质量。

**关键词：**物联网技术；ZigBee；RFID；CC2530；网关

## Abstract

With the rapid development of the times, people's demand for home intelligence is growing, so the Internet of things takes this opportunity to develop. In order to strengthen the learning efficiency and learning environment of students, smart classroom will stand out. Wireless sensor technology, embedded technology and many other technologies are included in the Internet of things technology. The smart classroom is built on the basis of Internet of things technology. Make the classroom more intelligent, diversified and informative.

This design uses ZigBee technology as the core to design the smart classroom. The design also describes the technology to be used, using ZigBee technology, RFID technology to complete the design. In this design, CC2530 development board, DHT11 temperature and humidity sensor, bh1750 light sensor and other sensors are used to build a wireless sensor network and connect with the gateway of the smart classroom to achieve the management of electrical appliances in the classroom.

The design of the smart classroom is perfect, and the implementation scheme is simple and easy. Using software design to control can realize lighting control, environment control, and optimize teaching environment and teaching quality

**Keywords:** Internet of Things Technology   ZigBee   CC2530   RFID   Gateway

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