應用模糊邏輯理論於智慧型家庭系統之研製
Development of Smart Home Systems with Fuzzy logic Theory

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摘要

隨著科技日新月異，越來越多的人群仰賴著電腦或智慧型手機等高科技產品。甚至對於生活品質的要求也越來越高，但如何使家庭擁有更好的舒適度即是本文所要探討的部分。而本文所探討的是如何有效的應用電腦軟體提升家庭生活上的便利性以及擁有更好的舒適環境。本文利用數個感測器來接收訊號，再藉由這些收到的訊號傳送至電腦上的軟體，經由軟體的判斷及進行智慧型控制，使家電處於目前環境下最適當的狀態，進而達到有效且最佳的提升家電的效能和降低資源的浪費。此外，藉由這些感測器所接收到的訊息，使我們可清楚的知道家庭內之家電使用狀況，利用這些訊息經由電腦判斷將這些家電產品調整成最符合目前狀態的效能。因此本文所提出的論述經實驗結果顯示是可以有效提升家電之效能及環境舒適度，使家庭能夠提高舒適性且提升居家生活品質，達到智慧型設計與環境調整的效果。

關鍵字：智慧型家電、感測器、模糊邏輯控制。

Abstract

With the advancement of technology, more and more people rely on high-tech products such as a computer or smartphone. More and more high quality requirements even for their daily lives, but how the family has a better comfort that is part of the paper is to explore. In this paper, a number of sensors to receive signals sent to the software on your computer, and then by the received signal, via software judgment and intelligent control appliances in the most appropriate environment, and thus achieve effective enhance the performance of the appliance, and to reduce the waste of resources. In addition, the message received by these sensors, so that we can clearly know the status of the use of home appliances within the home, these home appliances via the computer to determine the adjustment into the most consistent with the current state of the performance advantage of these messages. Discussed by the experimental results can effectively enhance the performance of home appliances and environmental comfort, to enable families to improve comfort and to enhance the quality of home life, to achieve the effect of intelligent design and environmental adjustment.

Keywords: intelligent appliances, sensors, fuzzy logic control.