

**A NON INVASIVE ENERGY SAVING SYSTEM
BASED ON A WIRELESS SENSOR NETWORK FOR
SPLIT TYPE AIR CONDITIONERS**

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Degree of Master of Science

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Dissertation submitted in partial fulfillment of the requirements for the degree
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Declaration of the Candidate and the Supervisor

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Abstract

Energy consumption in air conditioning in supermarkets has been very high. Increase in maximum demand (kVA) has gone up as a result of heavy consumption in air conditioning. Partly, the consumption includes unnecessary cooling, which can be reduced without making inside temperature being elevated to uncomfortable levels. In this research, an energy saving solution designed to be used in the shop floor which is cooled by a number of split type air conditioner units is analyzed. A centralized sensing and control mechanism, which is fully autonomous, has been developed to maintain the comfortable temperature within the shop floor by a way of using minimum number of AC units. Temperature settings of the AC units are adjusted by the central controller every two minutes so that the system adaptively maintains the required temperature inside by consuming the least amount of energy needed to do so.

Keywords: Energy Consumption, Air Conditioning, Adaptive Control, Centralized Control, Wireless

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