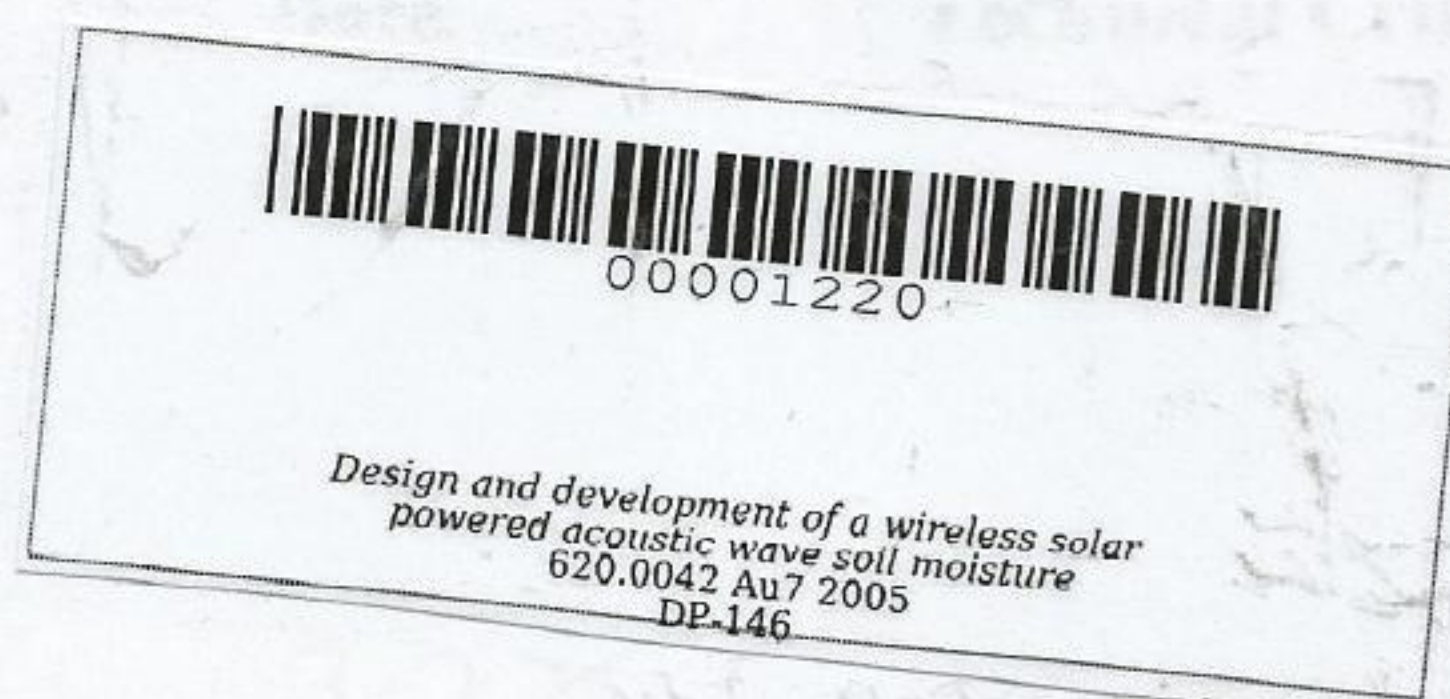


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DESIGN AND DEVELOPMENT OF A WIRELESS SOLAR POWERED
ACOUSTIC WAVE SOIL MOISTURE DETECTOR SYSTEM
FOR THE CAVITE STATE UNIVERSITY (CvSU)
MAIN CAMPUS

Undergraduate Design Project
Submitted to the Faculty of the
Cavite State University
Indang cavite

In partial fulfillment
of the requirements for the degree of
Bachelor of Science in Electronics and
Communication Engineering



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ABSTRACT

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The design and development of the wireless solar powered acoustic wave soil moisture detector system was constructed at 148 Calumpang Cerca, Indang, Cavite. The main objective of the study was to design, develop and construct wireless solar powered acoustic wave soil moisture detector for the Cavite State University. The project was conducted to provide a wireless soil moisture detector system for the Cavite State University.

The system was composed of four main units and two auxiliary units. The main units are: the SDU (Frequency Acoustic Source and Microphone pre-amp unit), RF module, receiver and data display. The auxiliary units are the microphone and the tweeter. The microphone and the tweeter was buried to the dry ten square meter soil area at 3-6 inches deep. Then the area was watered to test the device. A rechargeable battery that is charged by the solar panel during daytime powered the SDU. A power supply was constructed to supply the sufficient power needed by the receiver and display.

The design was presented to the thesis adviser and the technical critic during the preliminary evaluation conducted at the Central Experimentation Station on February 22, 2005.

The final evaluation of the design project took place at the Central Experimentation Station from February 25 – 28, 2005. The system was evaluated by monitoring of the data display.

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