

**DESIGN, CONSTRUCTION AND EVALUATION OF AN  
AUTOMOTIVE IGNITION SYSTEM TRAINER**

**A SPECIAL PAPER**

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**of the Requirement for the degree**

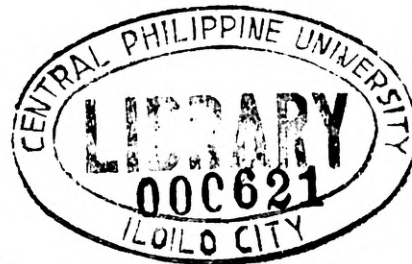
**MASTER OF ENGINEERING**

**By**

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# **DESIGN, CONSTRUCTION AND EVALUATION OF AN AUTOMOTIVE IGNITION SYSTEM TRAINER**

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## **ABSTRACT**

The special paper on automotive ignition system intends to design an ignition system as an instructional device/material specifically a demonstration unit in teaching automotive technology course/subject.

The concluded study was an attempt to develop a low-cost effective gadget that would perform an actual operation of the electronic ignition system and provide solutions to the problem on lack of instructional materials in the classroom especially in the automotive technology area.

Specifically, this the study aimed to; design and fabricate the body frame of the trainer; design the circuit diagram of the trainer; construct the actual Automotive Ignition System Trainer; test and evaluate the performance of the design based on the following: output voltage of the power supply, output amperage, color of spark of sparkplug, formation of spark of sparkplug; and develop instructional manual of the trainer.

The data were taken from the finished gadget where the voltages and amperage were measured using a digital multi-tester and ammeter respectively. The same procedure was done until the fifth measurement was achieved.

The following were observed during the evaluation of the trainer. The measured voltage going to ignition system reads 11.75 volts in the 1<sup>st</sup> to 3<sup>rd</sup> trial and a drop of 0.1 volts was observed in 4<sup>th</sup> and 5<sup>th</sup> trial which measured 11.74 volts. The measured currents were 0.6 amperes in the *entire trials. While bluish and solid sparks were observed all throughout the five trials.*

It was concluded that the trainer the trainer can be used as an instructional materials particularly on the Automotive Technology class. The trainer can be constructed using local materials and can perform closely similar to actual engine.

The trainer was also used to evaluate the reliability of the trainer. Ten bad and ten good sparkplugs were tested and evaluated. The result was observed that there were no changes in the standing status of the twenty sparkplugs. Thus the construction of the trainer based on the design of the proponent using the local materials was reliable.

Further study should be conducted of the other features for the enhancement of the gadget. It is recommended that selector switch should be added to control the revolution speed of the motor that drive the distributor shaft.