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**DEVELOPMENT OF AN EXPERIMENTAL PACKAGE IN
ELECTROSTATICS FOR G.C.E. ADVANCED LEVEL STUDENTS**

A PROJECT REPORT PRESENTED BY

D. T. WICKRAMASOORIYA

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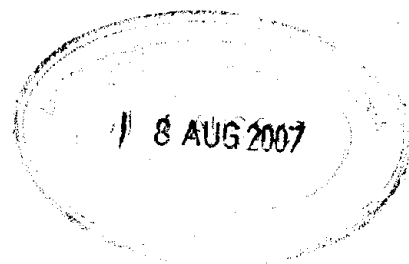
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DEVELOPMENT OF AN EXPERIMENTAL PACKAGE IN ELECTROSTATICS FOR G.C.E. ADVANCED LEVEL STUDENTS

D. T. Wickramasooriya
Postgraduate Institute of Science
University of Peradeniya
Peradeniya
Sri Lanka

One major responsibility of a teacher is to provide accessible ways for students to grasp difficult scientific concepts. Teaching intangible concepts in Electrostatics is a difficult task. Sub topics like electrostatic force, electrostatic field, potential difference and capacitance are some difficult sections found in teaching and learning of this component. The purpose of this package is to provide a set of experiments for G. C. E. Advanced Level students; in addition to what is included in the scheduled syllabus.

Among the new experiments the field mapping experiment will provide an opportunity for students to learn more about electrostatic field lines and electrostatic potential through hands on activities. Braun electroscope was constructed and calibrated in order to use it for identifying a charge and to use as a voltmeter for high voltages. The experiments with attracted disk electrometer will help students who do not already have an idea about the magnitude of the electrostatic force. Construction of paper capacitors will give an opportunity for students to get vocational experience. Low cost materials were used for all the experiments and they can be carried out in school laboratories.

To evaluate the package, a sample was selected which included thirty five students in two biological science classes and twenty in physical science.

A conceptual pre test in electrostatics was conducted with the whole sample. Based on the pre test marks the sample was divided into two equal groups and one group was selected to serve as the experimental group and the other as control group.

The experiments in the package were introduced to the experimental group at appropriate times, during the period of teaching the unit of electrostatics. At the end of the unit, a post test was conducted for both groups. The pre and post test marks were analyzed. There was a significant difference in marks of post test, between experimental group and control group. This showed that the students had benefited significantly from the experiments in the package.