

## Design and Development of an Experimental Apparatus to Study the Conservation of Energy

This research is the design and development of an experimental apparatus to study the conservation of energy to serve as a medium of instruction for high school. It has been tested with the experimental method to plot the graph compare the graph of the theory. It has been using Tracker video analysis and modeling tool for physics education support for lab results. It is designed to replace the gravitational potential energy into kinetic energy and elastic potential energy, respectively. It was designed using the principles of the law of conservation of energy. The concept of the design is to use materials that are cheap and easy to procure locally. The results showed that Timer can display the time when an object moves through the photo gate before the fall and spring term can be read clearly when the retaining spring let objects fall at different heights. Applications Tracker video analysis and modeling tool for physics education is used for the speed of the object before the spring and a long stretch of the spring corresponding to the reading of the stopwatch. When letting objects fall at different heights. It was a performance of a trial against the theory of the law of conservation of energy. We concluded that the error is 9.43 %.

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