

2008 TAIWAN INTERNATIONAL SCIENCE FAIR

CATEGORY : Physics and Space Sciences

PROJECT : A Coin Sorting Box

AWARDS : Physics and Space Sciences Third Award

SCHOOL : Chonrassadornumrung School

**FINALISTS : Rapeesak Wechsuwannaruk
Thanametth Wachiradatsathien**

COUNTRY : Thailand

ABSTRACT OF EXHIBIT TAIWAN INTERNATIONAL SCIENCE FAIR

Category: Physics

Title: A coin sorting box

Name: Rapeesak Wechsuwannaruk, Thanameth Wachiradatsathien

Country: Thailand

This project aimed to create a simple model of coin sorter with cheaper price, electricity saving using recycled materials for use in place of manual separation and compatible to the automatic coin sorters commercially available in the market. The principle applied in inventing this device was the gravity force that pushed coins to fall through its upper compartment to the lower part via a slope that determines the coin path as well as the speed of the coins. The upper part of the box was designed to control the rate of the descending coins and transported the coins to the separation section in single file order to prevent jamming. The lower part of the box consisted of the coin sorting mechanism which conveyed the coins to their assigned compartment according to coin diameters. The box could separate three kinds of Thai coins, 1,5 and 10 baht, with 95-98 % accuracy. The efficiency was in the range 150-250 coins per minute with highest accuracy at 150 coins per minute. The box was made from acrylics.

The designed box can separate coins faster than manual sorting although not with as high efficiency as automatic machines which can sort up to 500 coins per minutes. At the present stage, it can not count the number of coins. However, it can be built at cheaper cost, does not require electricity or electronic devices and is suitable for small and medium size business. We aim to improve the box to give higher accuracy with coin counting ability.

評語

本作品實際製作出一簡易能自動分離零錢的裝置，以各零錢的大小為分離機制的設施，具實用性。