

# 2011 年臺灣國際科學展覽會

## 優勝作品專輯

國家：Malaysia

編號：120023

作品名稱

**Super Oil Absorbent Form Rubber Waste**

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## **“ ONCE THROWN, NOW A THRONE ”:**

### **Superb Oil Absorbant from Rubber Waste**

#### **PROJECT SUMMARY/ ABSTRACT :**

There are three main threats that give disastrous outcomes to the ecosystem, oil spill in the open sea, non-biodegradable wrapping plastics and logging to accommodate the paper industry. The current oil absorbent available in the market nowadays are more of fibers with hydrophilic characteristics. As a result, the oil been absorbed cannot be reused and causing total lost to the oil companies. It is estimates that billions of Malaysian Ringgit(RM) lost due to this cause for the past ten years.

The objective of this project is to produce oil absorbent that not only created from the Empty Fruit Bunch(EFB) as a recycling initiative but at the same time able to reuse back all the absorbed oil after that. On top of that to this, we also hope to produce a biodegradable wrapping paper from the same material.

The initial step towards the production of this eco-absorbent is known as Compounding Process which involves the grinding of the EFB along with some used rubber. This is then followed by adding flour to the mixture and then cooked until it is matured. At the end of this process, the product is grinded into refined form. Based on the investigations conducted, this eco-absorbent able to absorb oil five times of its weight and using a minimal pressure, the absorbed oil can be recollected back hence use onwards without changing the oil physical or chemical properties.

On the other hand, the eco-friendly wrapping paper made out of the same material

also showed high durability and tensile index. In addition to this it also showed high flexibility folding index which enables this wrapping paper to be shaped and folded into various forms according to the customer needs. All of these positives characteristics suggest that this eco-friendly wrapping paper able to replace the conventional plastic wrapping paper available in the market nowadays.

In conclusion, we are one step closer in reducing the environmental pollution by using the EFB to produce the eco-oil absorbent and wrapping paper that it's not only stressed on recycling the waste materials and precious oil resources but at the same time helps to save billions of Ringgit by the oil companies.

## 評語

本研究開發以特定植物纖維經過轉化後，能作選擇性之吸收，並能以機械方式迅速排油再生，重新使用。此項技術發明，不但有創意而且頗具實用價值。