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參展科別	化學科
作品名稱	PALF As Alternative In Novelty Composite
得獎獎項	四等獎

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ABSTRACT OF EXHIBIT

TAIWAN INTERNATIONAL SCIENCE FAIR

Pineapple leaf fiber (PALF) which is rich in cellulose, abundantly available, relatively inexpensive, low density, nonabrasive nature, high filling level possible, low energy consumption, high specific properties, biodegradability and has the potential for polymer reinforcement. The utilization of pineapple leaf fiber (PALF) as reinforcements in thermoplastic form for developing low cost and lightweight composites.

Pineapple leaf fibre (PALF) is one of them that have also good potential as reinforcement in thermoplastic composite. The objective our research is to characterize PALF and to investigate the effect of fibre treatment on the mechanical properties of PALF reinforced polypropylene (PP) composite.

PALF was obtained from pineapple plantation after the harvesting. The we dry the PALF to remove the water. Next step is grind the PALF into small particle. Both PP and PALF were compounded using internal mixer machine prior to compression moulding via hot press machine to form a sheet. After forming the composite sheet, samples were prepared for tensile test (ASTM D638), flexural test (ASTM D790) and impact test (ASTM D256).

評語

The topic is important to the environment. A method of utilizing pineapple leaf waste is proposed. The PALF-plastic composite showed good mechanical properties and is biodegradable.