

# 熱烘系統多元化熱能回收與應用研發計畫

執行單位

紡織所

計畫主持人

黃慶堂

- 紡織產業為國內六大耗能產業之一，本計畫針對紡織業最耗能的染整製程開發烘乾定型設備智慧節能調控系統(FY105)及水洗設備智慧節能調控系統(FY106)，本計畫除關鍵技術移轉外，還帶領一條龍的設備製造商參與國內外展覽，並舉辦實地觀摩增益技術擴散效益。

## 一、105年度專利

專利名稱：紡織設備與其熱能調控方法

申請案號：105141260

專利特徵：藉由烘乾織物所需溫度、熱媒油使用量及熱源溫度等三者關係，形成互動式熱源快速調控。

## 二、106年度專利

專利名稱：水洗設備與其調控方法

申請案號：106142788

專利特徵：本專利針對前處理品質提出改善傳統退漿水洗機定時定量之加藥與連續溢流之補水方式



【柬埔寨紡織機械展】

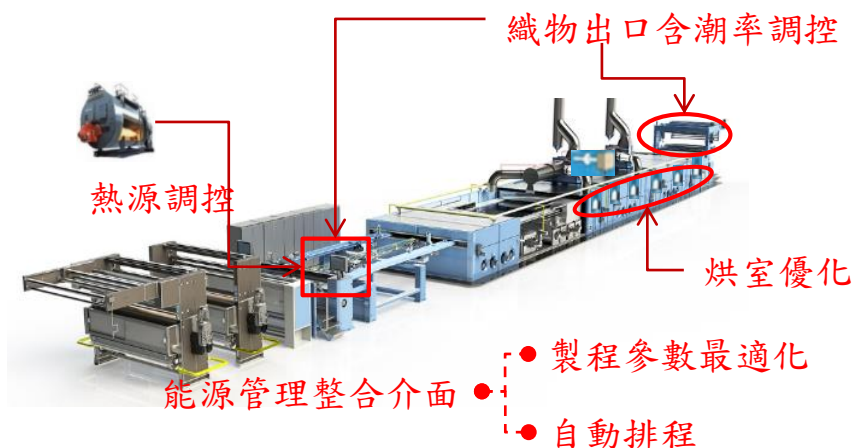


【台北紡織展TITAS】

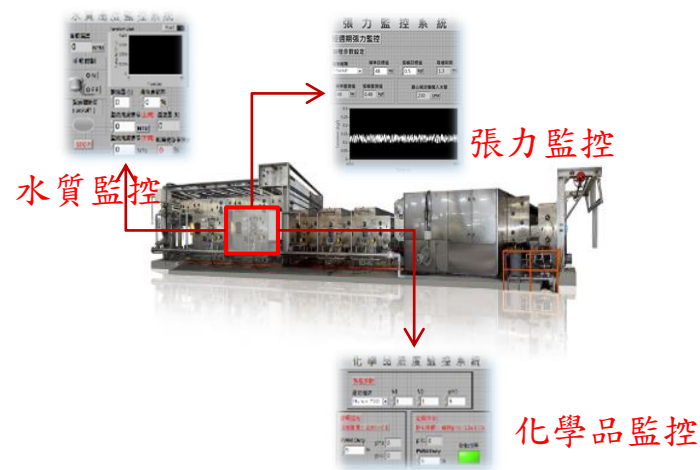


【成果現場觀摩】

- FY105導入智慧化節能技術整合烘乾定型的節能關鍵技術，包括最適化推演、智慧調控、智慧排程、快速熱源調控及烘室無效空間遮蔽。烘乾製程節能效益達21.1%，並完成國內第一台定型機智慧節能調控系統，且已成功達成技術商品化行銷。
- FY106水洗系統研發透過離心噴流機構設計、張力控制及化學品濃度監控等智動化節能技術，有效降低大量使用熱水的水洗製程，達到兼顧品質與產量的節能目的。水洗製程乳化澎潤段節能19~24%，降低用水量約21%，節省化學品達6.67%。



【FY105定型機智慧節能調控系統】



【FY106水洗機智慧節能調控系統】

# The Program of Diversified Heat Recovery and Applied Research for Drying System.

Execution Unit

Taiwan Textile Research Institute

Project Director

Huang, Ching-tang

- Textile industry is one of the most six energy-consuming industries in Taiwan. This project aims at the processes of dyeing and finishing that is the most energy-consuming in the textile industry. To develop a finishing(FY105) and a washing(FY106) smart energy-saving control systems. In this project, we transferred the key technology to manufacturers. In addition, we also led the train of equipment manufacturers to participate in domestic and international exhibitions. And hold the conference on the spot to gain technology diffusion benefits.

Patent 1: Textile equipment and thermal control method

Application number: 105141260

Patents II: Washing equipment and its control methods

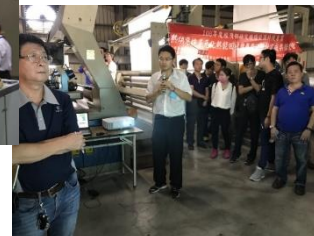
Application number: 106142788



【 2017 Cambodia Int'l Textile & Garment Industry Exhibition 】



【 2017TITAS 】



【 Demonstration of results 】

- FY105 introduces intelligent energy-saving technology integrated the key energy-saving technologies of finishing process. Including the optimal inference, intelligent control, scheduling, heat source control and drying chamber invalid space shielding. energy efficiency up to 21.1%, and completed the first finishing intelligent energy-saving control system in Taiwan. This system successfully entered the market already.
- FY106 washing system research intelligent energy-saving technologies through centrifugal jet design, tension control and chemical monitoring etc. It effectively reduces hot water huge usage. Achieve the purpose of saving energy both quality and quantity. The emulsion swelling section of Washing process can save energy 19 to 24%. Water consumption reduce about 21%. Save chemicals up to 6.67%.

