

輪胎廠區工業節能暨能源監控整合示範計畫

執行單位

國立勤益科技大學冷凍空調與能源系

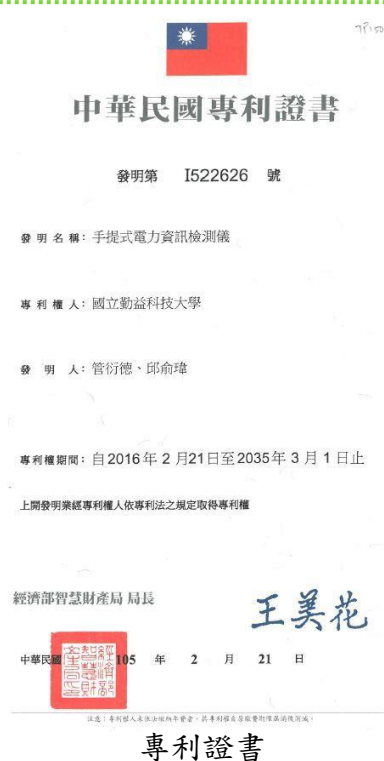
計畫主持人

管衍德 教授兼系主任

國內能源的價格逐漸攀升的狀況下，生產廠商都備感成本大幅提升的壓力，降低耗能的成本，成為相當重視的一環。在整體能耗部份，作業通風系統整體節能達8%的節能率，效能提升10%及全廠用電合理化。在熱能回收效益部份，冷卻水塔變頻控制節能方面每年省下約16萬元電費支出。在溫室氣體減量部份，能源管理系統基線建立及溫室氣體排放量基線建立。

1.手持式電力資訊測試機
(核准日期105年2月21號，
專利證書編號:I522626)

2.本產學合作計畫，後續發展將節能與廢熱減碳的工業節能監控技術，應用至輪胎產業廠區，以達到節省能耗、減少碳排放、降低成本、提升整體製造環境品質等目的，進而建構一個輪胎製造節能減碳技術應用示範點，以期將技術與經驗推廣至其他輪胎製造公司，進行輪胎製程節能的實作研究，並建立示範點，且推廣至該公司未來海外或國內的廠區，以及國內其他的輪胎廠商，進而提升台灣輪胎產業的整體品質。



熱電發電系統(1KW)



計畫團隊

- 本研究為一個三年期的開發型產學合作研究計畫，計畫合作的企業為國內知名輪胎廠，計畫中將應用能源分析與監控管理、熱回收利用與綠色節能製程等三個主軸技術，對於輪胎製造廠進行節能改善，並建立示範點。



冷卻水塔整併



室內空氣品質過濾



煙器回收2KW發電

Integration Demonstration Project of Industrial Energy Saving and Energy Monitoring for the Tire Factory

Execution Unit

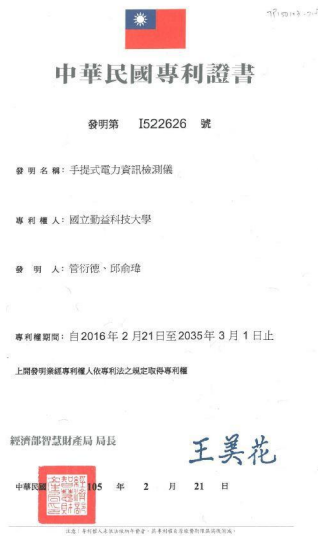
Refrigeration, Air Conditioning and Energy Engineering Department of National Chin-Yi University of Technology

Project Director

Prof. Yean-Der Kuan (Chief Department)

- In addition, with the gradual rise of domestic energy prices, all energy-intensive manufacturers are feeling the pressure of substantial increases in costs. Therefore, reducing energy consumption has become a key part of the company's attention. In the overall energy consumption of the equipment, the operating ventilation system can save energy by 8% as a whole, improve the efficiency by 10% and rationalize the whole plant's electricity consumption. Benefit in the heat recovery part of the cooling tower frequency control energy saving about 160,000 NTD each year to save electricity costs. In the greenhouse gas reduction part, the baseline of energy management system and the baseline of greenhouse gas emission have been established.

- Handheld power information testing machine (Approval Date : February, 21 2016, Patent Number : I522626)
- The industry-university cooperation program, the follow-up development will be section of energy saving carbon reduction with industrial monitoring technology. Applied to the tire industry plant, in order to achieve energy consumption savings, reduce carbon emissions, reduce costs, create the overall quality of the environment and other purposes, and then construct tire manufacturing energy saving and carbon reduction technology. With purpose to promote the technology and experience to the other tire manufacturing companies. Conduct energy saving tire manufacturing research and establish demonstration site. And extended to the overseas or domestic company and the others domestic tire producer. Thus it can enhance the quality all of Taiwan' s tire industry.



Patent certificate



Project team



Thermoelectric power system (1KW)

- This research is a three year developing industry-university cooperation research project . The cooperative enterprise is a well-known tire manufacturing company in Taiwan. This project applies three main techniques of energy analysis and monitoring, heat recycling, and green energy saving manufacturing processes to make the energy-saving improvements on the tire manufacturing factories and further to build a demonstration site.



Cooling towers are integrated



Indoor air quality filtration



Smoke recovery 2KW power generation