二、研究計畫中英文摘要：請就本研究計畫要點作一概述，並依本研究計畫性質自訂關鍵詞。

（一）計畫中文摘要。（5百字以內）

隨著資通訊科技的進步，工業生產模式逐漸從大量生產、代工製造方式轉變為以最大客製化為生產模式的智慧工廠概念邁進。而為實現此目的必須先整合現行工具機的資訊。然而目前許多傳統工具機因機型老舊缺乏資料傳輸的能力，並且工廠管理人員只能夠過工具機上的面板得知當下工具機的訊息而沒有遠端監控的能力，或是由於工具機的製造商不同其所使用的通訊標準不相同缺乏統一的通訊標準使得資料收集非常困難，成為智慧工廠的瓶頸。

本研究提出建置一套「**智慧型工廠即時資訊監控系統」**，以開源標準的工業自動化通訊協定OPC UA協定，採用統一的通訊標準並在工具機上安裝感測裝置以透過低成本的微電腦來控制裝置擷取感應裝置上的資訊。將其透過無線網路進行資料共享，為傳統工具機提供資料傳輸的能力從而突破了有限的工廠空間。工廠管理人員與現場操作人員可以使用智慧型行動裝置或是網頁即時監控相關資訊。另外透過將過往資料的收集也能夠快速的了解工具機過往的相關資訊並進行分析，以達到智慧工廠的目的。

關鍵詞:智慧工廠、工具機、OPC UA、即時監控、感應裝置

（二）計畫英文摘要。（5百字以內）

The industrial model of production has changed gradually from mass-producing and foundry manufacturing to the smart factory which produces maximum customizations as a concept through the advancement of the technology nowadays. To achieve this purpose. Integrating the information from current devices or machines is needed. However, those current machines or devices cannot transmit the data because the models are old. Furthermore, the factory managers can only read machines’ information on the panel rather than monitor it on the remote. Besides, the machines made by different manufacturers may implement different communication standards. The lack of a unified communication standard makes data collection very difficult, which becomes a bottleneck in the development of smart factories.

This paper proposed a real-time information monitoring system, which based on an industrial communication standard: OPC UA protocol. By integrating the current machine with a sensor, the proposed system can control the sensor and read the collected data using the low-cost microcomputer. The data can then be shared via the wireless network. In this way, the proposed system breaks through the limited space of factories because the traditional machines are capable of transmitting data now. Factory managers and field operators can use smart mobile devices or webpages to monitor the machine information in real-time. Moreover, collecting and analyzing the historical data on the machines are useful to quickly understand the related information of the machine tools to achieve the purpose of a smart factory.

Keywords: Smart Factory、Machine、OPC UA、Real-Time、Sensor

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| 請概述執行本計畫可能產生對社會、經濟、產業發展等面向的預期影響性(一百五十字內)。  本計畫將與群亞電子合作協助研發改善產品，其原先是協助傳統工廠將工具機的資訊透過擷取訊號源的方式顯示於LED看板上，但時常面臨無足夠資訊可呈現及機型過於老舊而無法擷取的窘境，本次將透過不須汰換工具機的方式，利用感應器搭配無線網路將資訊即時於網頁或是智慧型手機上顯示，提升其產品競爭力。 |

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