

塑橡膠成形產業節能發展計劃

執行單位

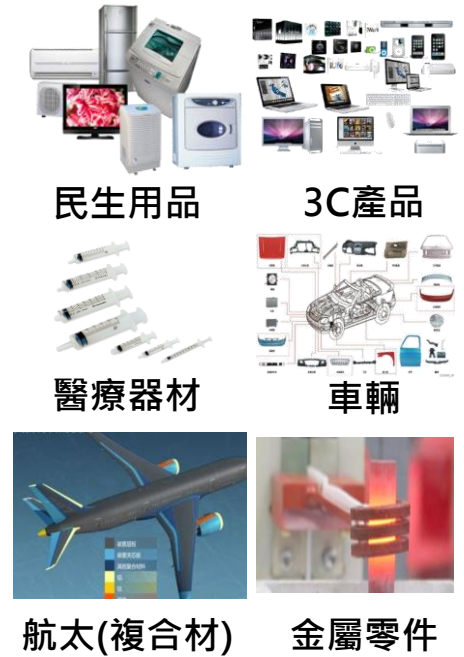
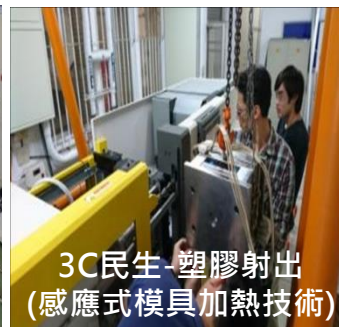
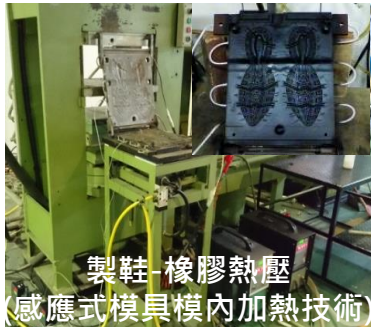
財團法人精密機械研究發展中心

計畫主持人

陳志豪

- 本計劃開發感應式加熱製程技術，並透過專利授權與技術移轉，將專利技術運用於產業上，實際達到工業節能之效果。
- 專利與技術可廣泛應用於塑橡膠成形加工、金屬熱處理、食品加工等，終端產品應用領域包含：3C、民生、車輛、航太、醫療器材等。

本計劃累計於感應式加熱製程相關技術專利產出為，申請9件、獲得4件、應用5件。



智財能量

產業應用

終端產品

塑橡膠成形產業節能發展計劃

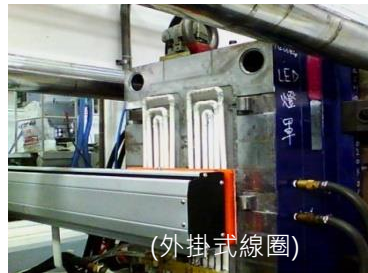
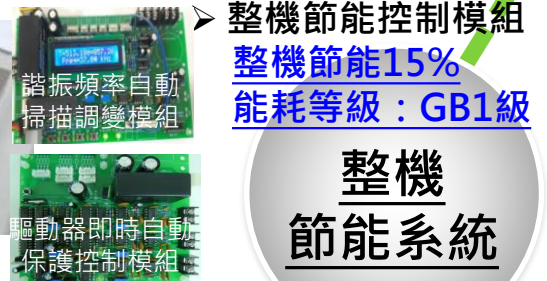
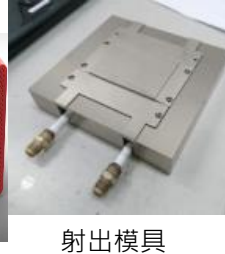
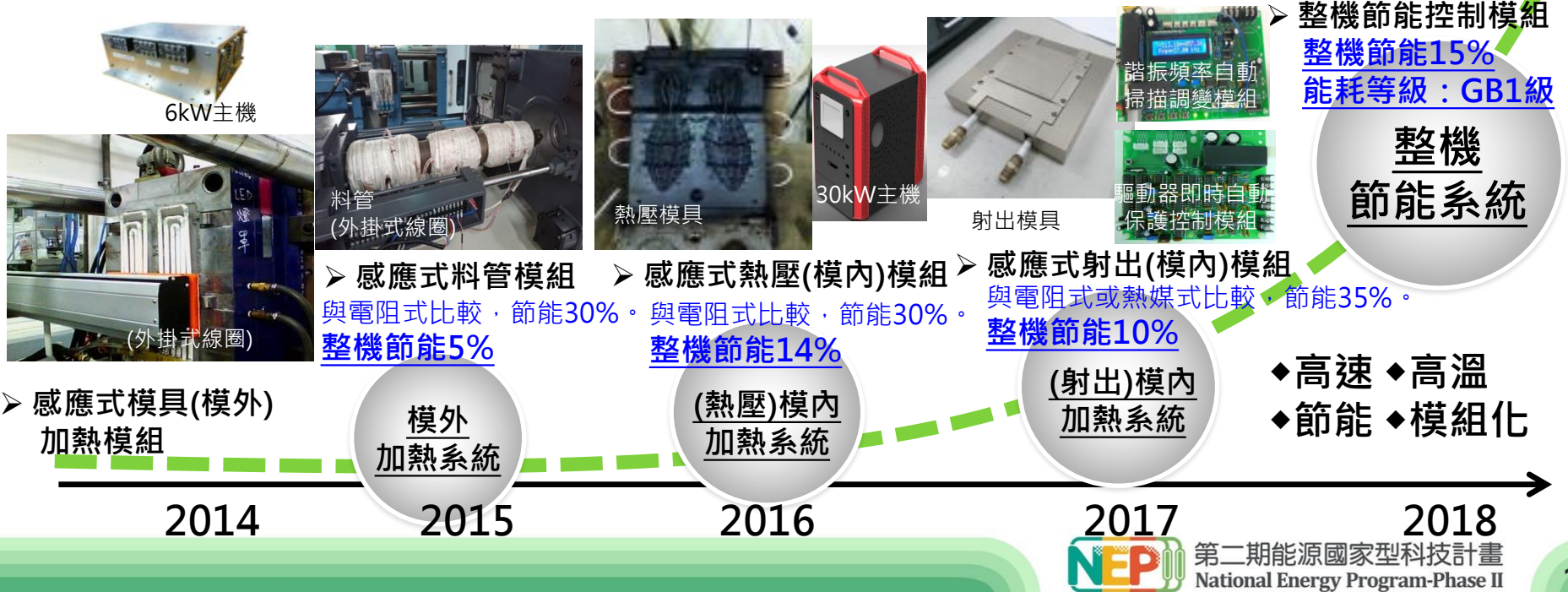
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財團法人精密機械研究發展中心

計畫主持人

陳志豪

- 塑橡膠成形製品與我們生活息息相關，其生產方式為不斷重複的加熱與冷卻，生產製程能源使用量極高，為達到製程與節能需求，投入開發感應式加熱製程技術。
- 產出外掛式(射出模具與料管用加熱模組)、內嵌式(壓出與射出模具用加熱模組)、電源主機(6kW、30kW主機與保護暨調控模組)、整機節能控制模組(多負載阻抗補償模組、感應加熱變頻模組)等。
- 目前技術驗證出的節能效果，比傳統電阻式加熱方式約可節省30%~35%用電量，預期導入107年技術後可協助射出機整機能耗等級達到GB1。



➤ 感應式模具(模外)加熱模組

模外加熱系統

(熱壓)模內加熱系統

(射出)模內加熱系統

The Development Plan of Energy-saving in Plastics & Rubber Molding Industry

執行單位

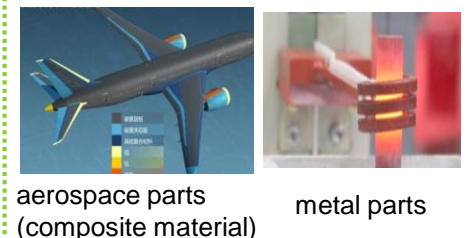
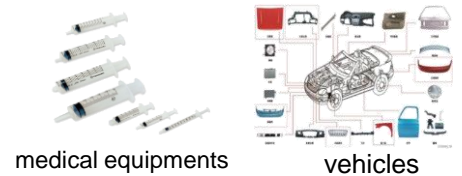
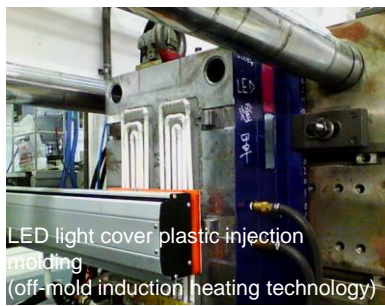
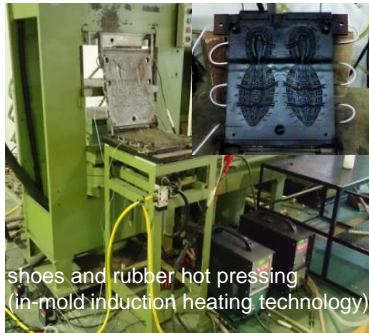
Precision Machinery Research & Development Center

計畫主持人

Chen, Chih Hau

- This project develops induction heating processes. Through patents licensing and technology transfer, the developed technology can be applied to various industry sectors in order to achieve industrial energy saving.
- Patents and developed technology can be widely applied to plastic injection & rubber forming, metal heat treatment, and food processing. Relating end products includes 3C products, daily use products, vehicles, aerospace parts and medical equipments.

We will obtain total 9 patents of induction heating process technology in this project, 4 of them are already obtained and we have 5 applications in industry.



Patents capability

Industry applications

End products



The Development Plan of Energy-saving in Plastics & Rubber Molding Industry

執行單位

Precision Machinery Research & Development Center

計畫主持人

Chen, Chih Hau

- Plastic and rubber forming products are related to our daily living. The production of these products utilized repeatedly heating and cooling which consume much energy during manufacturing processes. For energy saving requirement, We are devoting to the development of induction heating technology.
- Developing external heating modules (for injection molds and barrels), internal heating modules (for rubber hot press mdds), power modulds (6kW and 30kW), energy saving control modules (multi load impedance compensation modules, induction heating frequency changing modules).
- It has been verified that this induction heating saves 30%~35% energy than the traditional resistance heating. It is expected that the energy consumption gradl of plastic injection machines will reach GB1 after using this technology in 2018.

