

## 煙灰缸射出成形模之設計與製造

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### 摘要

煙灰缸射出成形模之設計與製造，在機械的方面為運用 CAD/CAE/CAM 設計與製造而成，最初先使用 Pro ENGINEER Wildfire 2.0 將想法及構思轉換為成品圖，進而設計出成品的公母模，爾後進階設計出公母模的實際尺寸，建構出煙灰缸之公母模的實體模型，接著使用軟體中之模具模擬軟體以模擬塑膠注入煙灰缸射出成形模之成形過程，並且分析溫度、壓力、品質等要素，在最佳的模擬結果下，使用 Master CAM 配合 CNC 綜合切削加工機製造煙灰缸射出成形公母模的實體，並在射出成形機上實際射出。在設計及製造的過程中，需考量射出後成形品所需的強度、品質、美感及實用性，進而加以修正公母模強度等，最後進階選擇適用的塑膠材質實際灌入熔融塑膠後製造出其成品。

關鍵字：煙灰缸; 塑膠射出模具

## **Ashtray Mold Design and Manufacture**

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### **Abstract**

The design and manufacture of the injection mold of the ashtray was performed according to the following steps. In the respect of mechanical building, designed and manufactured by CAD/CAE/CAM. The research firstly was to convert the idea and conception into the finished product diagram by Pro ENGINEER Wildfire 2.0, and designed the feature die of finished product and determined the actual size of the feature die followed by constructing out entity model of the ashtray feature die, using the mold simulation software to imitate the shaping process in which plastics are poured into feature die and analyzed such main elements as temperature, pressure, and quality, etc.. For the best simulation result, using Master CAM to cooperate with CNC comprehensive cutting processing machine to produce the entity mold of ashtray and produced from Plastic Injection Machine. During the process of designing and manufacturing, the intensity, quality, esthetic sensibilities and practicability of the product after inject needed to be considered to revise the intensity of the feature die. Furthermore the rank choice make its finished product after applying of the plastic material infused physically into the meltdown plastics.

Key words: Ashtray; Injection mold of plastic