

# Powmet®



## Ideas come to life...

is the new frontier of Legor Group research,  
the spirit that drives us to study and test innovative solutions  
aimed at breaking down the boundaries of the traditional jewellery-making  
processes so that the designer's unlimited creativity  
can be expressed in any form

## 實踐源於理念...

Powmet是Legor Group產品研發的新領域，  
創新精神驅使我們研究和試驗出新產品  
以打破傳統首飾製作工藝的邊界，  
好讓設計師們的無限創意可以盡情發揮。

Powder Laser Melting (PLM) is a new dynamic technique for the production of jewellery, based on an established industrial method: selective laser melting. This technique allows more rapid and inexpensive production of jewellery with complex forms, reducing the time required for launching new collections on the market and allowing more flexible planning of production. The jewellery item is obtained directly from a 3D CAD file, thus shortening the design-production timeline. PLM has a low environmental impact.

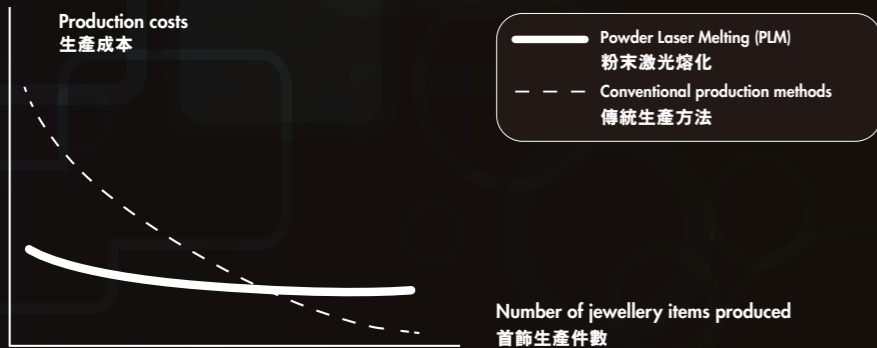
**This technique is suitable for:**

- Production of small batches, one-off items or prototypes
- Production of non-soldered chains
- Production of hollow items
- Production of complex forms
- Production with high technical precision
- Production with excellent surface quality

粉末激光熔化 (PLM) 是一種用於珠寶生產的新新動態技術，建基於既定工業方法：選擇性激光燒結。面對設計複雜的珠寶，這種技術能更快且廉價地將其生產，不僅能縮短新品上市的時間，更能靈活地做好產品規劃。珠寶形狀可以從三維CAD設計程式直接制得，能有效縮短首版製作週期。PLM技術對環境影響較小。

**此技術適合於：**

- 小批量、單件或首版生產
- 生產沒有焊接的鏈
- 生產空心件
- 生產複雜款式
- 高精準度的生產
- 生產出優良的表面質量



The initial cost per piece is low and practically the same for 10 or for 500 pieces, which makes it easier to enlarge and customise jewellery collections.

每件產品的初始成品低，10件或500件的成本相約，因此能輕鬆地加大及定制珠寶款式。

**Power laser melting process**



**Prototyping phase**

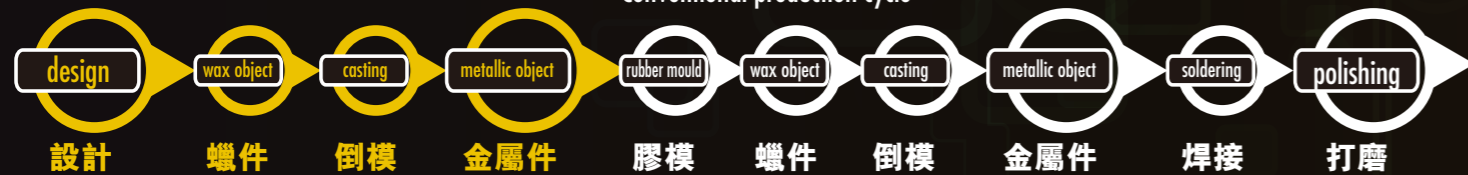


Fig. 2 – Comparison between PLM and conventional production (casting). PLM allows more rapid production of complex jewellery compared to the methods currently used. 比較PLM及傳統生產（倒模），PLM能有效地生產設計複雜的珠寶款式。

The **PLM (Powder Laser Melting)** process is very similar to **laser sintering (Selective Laser Sintering)** but in this case the single grains of powder are not sintered (or soldered) but fused completely, producing a dense body without the need for low-melting alloy additions. This means that the powder used in the PLM process must be very pure and have very fine granulometry.

PLM（粉末激光熔化）過程近似於激光燒結（選擇性激光燒結），在新技術情況下單顆粒粉末不是被燒結（或焊接）而是被完全融合，在不需要添加低熔點合金的前提下能生產出高密度工件。這意味在PLM過程中，粉末必須是很純及很幼細的顆粒。

**Metallic powders  
金屬粉末**

**Powmet®**

Powmet is the Legor Group line of very fine metallic powders, in several different granulometries, purposely designed for PLM or SLM processes.

The Legor Group powder is atomized via an exclusively process (which allows spherical particles to be produced with uniform chemical composition and low oxygen content) and sieved to obtain a precise granulometric distribution suitable for all PLM applications and for any machine used.

The Powmet line is characterized by ultrapure powders with guaranteed title and extra-fine, homogeneous granulometry.

The production of metallic powders for the gold jewellery market requires a long experience in metallurgy and efficient plants capable of guaranteeing long-term quality of the batches produced. For this reason Legor Group has invested in large-scale machinery which can cope with any requirements, guaranteeing constant quality in both small and large quantities. It is important to remember that in this new technology, the metallic powder used constitutes in itself the product, since the jewellery item is created directly from the powder.

A quality powder is therefore a guarantee of perfect results.

The Powmet line is available for the production of gold, silver and non-precious metal objects (chromium-cobalt for the dental sector) and will shortly be improved and enlarged starting from palladium and platinum-based alloys.

Powmet產品可用於黃金，銀和非貴金屬物品（牙科部門的鈷鉻）的生產，並將逐步完善以致擴展到鈦和鈦合金的生產。

Code 代碼	Material 物料
PM-AU101P	18K Gold powder (3N colour) 18K黃金(3N色)
PM-AU103P	18K Rose gold powder (5N colour) 18K玫瑰金(5N色)
PM-AU131P	18K Nickel-free white gold 18K無鎳K白
PM-AG101P	925 Silver 925銀
PM-BR101P	Bronze 青銅
PM-ST101P	AISI 316L stainless steel AISI 316L不鏽鋼
PM-CC101P	Cobalt-chrome 鈷鉻

**Powmet®** today represents a perfect blend of quality, experience, innovation and practicality, guaranteeing the best jewellery surface and workability. **Powmet brings to life the idea that creative design flair has no practical limits in the production of any form.**

**Powmet®** 代表著一種品質，完美融合的經驗，創新和實用性，保證最優秀的珠寶首飾表面及加工性能。**Powmet給生活帶來新理念，創意設計天賦在任何形式的製作中都不再有限制。**

Powmet是Legor Group特別為數個不同的微細範圍的PLM或SLM過程而設計的極幼細金屬粉末。

Legor Group粉末的霧化是需經過一個特定的程序（只允許生產化學成分均勻和含氧量低的球形顆粒），且被篩選的粉末都有精確細微度的分佈，適合於所有PLM應用程式和任何機器使用。

我們保證Powmet產品的粉末成色達標、超純、超細且顆粒分佈均勻。

黃金首飾市場的金屬粉末生產，不僅需要一間有長期經驗且高效的冶金工廠，還要保證生產商能長期提供高質的批量生產。為此Legor Group已投資大型機器以滿足任何訂單要求，保證不同大小批量訂單品質的一致性。在這項新技術裡，請緊記得珠寶是直接由粉末形成的，因此一種優質的粉末是完美產品的保證。