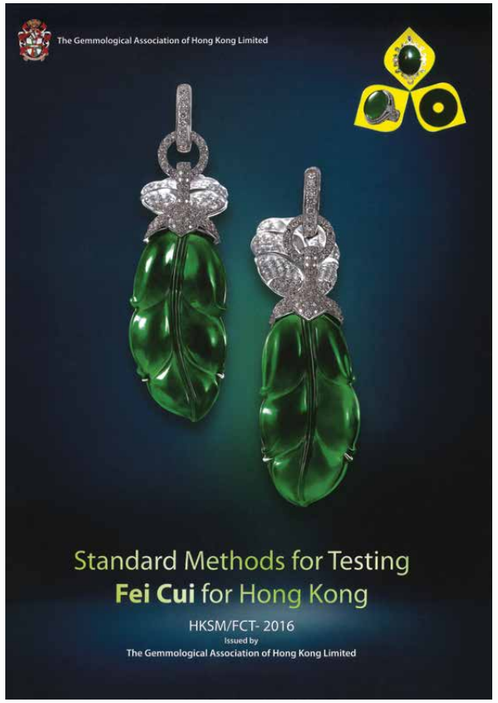
Quality Assurance 品質保證

Testing and certification is an industry with good development potential and a sector where Hong Kong enjoys clear advantages. Over the years, the industry has established a good foundation, based on a robust accreditation system, high professional standards and an excellent reputation, and plays a key part in helping the city's jewellery sector stay competitive in the world market while strengthening consumer confidence in buying fine jewellery. By Lydia Li

檢測和認證業具優厚發展潛力，亦是香港的優勢產業。多年來，憑藉健全的認可制度、卓越的專業水平以及優良的聲譽，檢測和認證業已奠定穩固的基礎，除了協助本地珠寶業在環球市場中保持競爭力，亦能增強消費者對購買貴重首飾的信心。撰文：李敏慧

Hong Kong is a well-known jewellery exporter. It is also a popular retail centre for delicately crafted jewellery sourced from the globe showcasing high-quality precious materials, including Fei Cui (jade as commonly named) and Chuk Kam (99.9-per-cent pure gold), which are widely used to produce a huge range of jewellery products for local consumers and tourists alike. The Hong Kong testing and certification industry provides various professional testing methods for these two precious materials.

香港是舉世知名的珠寶出口中心，亦是珠寶零售熱門市場，貨源供應來自世界各地，而且不少都是手工精湛細緻、並以高質量貴重物料製造的珠寶首飾，其中包括深受本地消費者和旅客歡迎的各種翡翠和足金首飾。香港的檢測和認證業亦為翡翠和黃金兩種珍貴物料提供多種專業檢測方法。



The Gemmological Association of Hong Kong (GAHK)
香港寶石學協會

制訂標準翡翠測試方法

翡翠不僅是本地炙手可熱的珠寶，也是廣受中國內地和國際訪客歡迎的產品。香港寶石學協會主席周家強回顧，就翡翠檢測服務的質素和測試程序而言，由於珠寶業界曾經缺乏一套廣泛認受的標準規格，以致消費者在購買有關產品時不免有所顧慮。有見及此，香港寶石學協會於2004年制訂和發表首版「香港標準硬玉質翡翠測試方法」，以增強消費者信心並提升本地寶石檢測業的信譽，其後更於2006年推出修訂版。

不少消費者都希望能夠辨別產品是否真正的「翡翠」。根據《商品説明(翡翠及天然翡翠的定義)規例》，翡翠指由硬玉、綠輝石或鈉鉻輝石作為全部或主要成份，並由其中任何一種物質或該三種物質的任何組合構成的粒狀至纖維結構的多晶質集合體。隨著市場發展，2006年推出的修訂版測試方法已不能完全滿足消費者的要求，香港寶石學協會認為需要制訂新的標準翡翠測試方法。

獲香港檢測和認證局的資助，並由多位專業寶石鑑證師以及來自中國內地與世界各地的學者協助，香港寶石學協會已完成「香港標準翡翠測試方法」的制訂工作，並於2017年3月正式發表。標準測試共有13項：鑑定形狀及琢型、量度尺寸、重量、透明度、顏色、偏光度、折射率、比重值、熒光性、濾色鏡檢驗、可見光譜、放大觀察，以及紅外線光譜。翡翠可按測試結果分為四類 (請參考圖表)。

周家強説：「『香港標準翡翠測試方法』是按照相關商品説明規例內翡翠的定義而制訂，除有助珠寶貿易商、零售商和寶石鑑定所的業務發展，也能協助香港海關進行執法工作、及消費者委員會保障消費者的權益。」

香港寶石學協會一直致力提升寶石鑑證師的專業水平。周家強説：「我們規定認可寶石鑑證師必須達到持續專業發展的培訓要求，確保他們掌握最新的寶石學知識，

According to the "Hong Kong Standard Methods for Testing Fei Cui", Fei Cui can be classified into one of the following types
根據「香港標準翡翠測試方法」，翡翠可分為以下四類

Type 名稱	Known as 名稱	Definition 定義
Natural Fei Cui 天然翡翠	Type A A玉	Refers to natural Fei Cui that has not been subjected to any form of chemical treatment 無經過化學處理的天然翡翠
Chemically treated and resin-impregnated Fei Cui 經化學處理及注入樹脂的翡翠	Type B B玉	Refers to Fei Cui that has been chemically treated and resin-impregnated 經化學處理及注入樹脂的翡翠
Dyed Fei Cui 經染色處理的翡翠	Type C C玉	Refers to Fei Cui that has been treated with dye 經染色處理的翡翠
Chemically treated, resin-impregnated and dyed Fei Cui 經化學處理注入樹脂及染色的翡翠	Type B+C B+C玉	Refers to Fei Cui that has been chemically treated, resin-impregnated and dyed 經化學處理、注入樹脂及染色的翡翠

Source 資料來源：The Gemmological Association of Hong Kong 香港寶石學協會

Formulating standard testing methods for Fei Cui

Fei Cui is not only popular among the local community but also among Chinese mainland and overseas visitors. The Gemmological Association of Hong Kong (GAHK) chairman KK Chow recalls that there was a time that consumers were wary about purchasing Fei Cui due to the lack of commonly accepted specifications on product quality and procedures on testing. To strengthen consumers' confidence and to enhance the credibility of local gemstone testing sector, GAHK developed and published the first version of "Standard Methods for Testing Fei Cui (Jadeite Jade)" in 2004. The version was subsequently further revised and issued in 2006.

Consumers may be eager to know whether the article is Fei Cui or not. According to the Trade Descriptions (Definition of Fei Cui and Natural Fei Cui) Regulation, Fei Cui is a granular to fibrous polycrystalline aggregate, which is composed solely, or principally of jadeite, omphacite or kosmochlor, or any combination of the three. Noting that the standard testing method published in 2006 could not address consumers' needs, GAHK saw the need to develop a new set of standard testing methods for Fei Cui.

Thanks to funding support from the Hong Kong Council for Testing and Certification and contributions from a group of professional gemmologists and academics from the Chinese mainland and around the world, a new set of Hong Kong standard testing methods has been developed and formally published in March 2017. The standard testing methods include 13 tests: shape and cut identification, measurement of dimensions, measurement of weight, identification of transparency, identification of colour, polariscope examination, determination of refractive index, determination of specific gravity, examination of fluorescence, chelsea colour filter examination, spectroscopic examination, magnification examination and infrared spectrum examination for the detection of resin impregnation. Based on test results, Fei Cui can be classified into four types (please refer to the table above).

"The new standard, which is developed based on the definition of Fei Cui specified in the relevant Trade Descriptions Regulation, will

有能力執行『標準』內列出的寶石測試方法。」他補充指，協會時常檢討各專業教育機構提供的有關寶石學的課程，為認可寶石鑑證師提供合適的持續培訓，這些相關培訓要求亦會因應剛推出的「香港標準翡翠測試方法」而檢討和更新。

促進翡翠銷售

香港珠石玉器金銀首飾業商會理事長黃紹基表示，「標準翡翠測試方法」為「商對商」和「商對客」兩個層面均帶來莫大好處。

黃紹基説：「回想過去，由於沒有標準的翡翠測試方法，也沒有標準的翡翠定義與技術規格，出自不同鑑定所的檢測數據和測試結果因而可能並不一致，導致翡翠貿易

Hong Kong Jewellers' and Goldsmiths' Association
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help promote business of jewellery traders, retailers and gem-testing laboratories. It also helps the Customs and Excise Department in its enforcement work and the Consumer Council in enhancing consumer welfare," Chow says.

GAHK also puts continuous effort in promoting the professionalism of gemmologists. "We implement mandatory continuing professional development (CPD) requirements for our certified gemmologists, so that they will have the most up-to-date gemmological knowledge to carry out various gemstone testing." Chow adds that GAHK is constantly reviewing the gemstone related academic programmes provided by professional institutions for its certified gemmologists' CPD and the CPD requirements for certified gemmologists for Fei Cui testing will be reviewed and updated having regard to the newly published standard testing method.

Boosting the sales of Fei Cui

Kent Wong, chairman of the Hong Kong Jewellers' and Goldsmiths' Association, states that the launch of the new "Standard Methods for Testing Fei Cui" has brought huge benefits at both the B2B and B2C levels.

He recalls, "In the past, there was no standard practice on Fei Cui testing and there weren't any standard definitions or specifications on Fei Cui, so there was a possibility of lacking consistency in the data presented and test results reported in the certificates being issued by different laboratories, resulting in disputes between Fei Cui traders and between retailers and consumers over the quality of Fei Cui." Also, as technology advances, it is becoming easier for some traders to enhance the colours and transparency of Fei Cui, as well as to impregnate resin into Fei Cui to conceal cracks.

"All of these factors have affected the sales of Fei Cui and consumer confidence and therefore having standardised testing methods is a necessity, so that gemmologists and laboratories can base their testing on the standards to carry out the same sets of tests and the results can be comparable," Wong says.

Since the launch of the standard in 2006, Wong says that both Fei Cui traders and consumers have shown more confidence in trading and buying Fei Cui. In fact, the retail sales of Fei Cui have increased tenfold over the past 10 years. "Nowadays, almost all expensive Fei Cui jewellery comes with a certificate issued by Hong Kong Accreditation Service (HKAS)-accredited laboratories, which has improved consumers' confidence tremendously."

Gold fineness testing

Apart from gemstone testing, Hong Kong's testing and certification industry also provides gold fineness testing service to the jewellery sector. The Hong Kong Precious Metals Assay Centre Limited, an independent, HKAS-accredited laboratory established by the Chinese Gold & Silver Exchange Society (CGSE), is one of the laboratories that provides such service.

"We offer internationally recognised gold testing service for fineness determination of gold bars and gold jewellery to local jewellery firms of all sizes, as well as to jewellery buyers," says Dr Haywood Cheung, president of CGSE. "Over the years, we've also provided testing services to local jewellery associations by assisting their annual regular inspection checks to see whether the quality of their members' gold jewellery meets with their associations' standards."

商之間和零售商與消費者之間因為翡翠質量出現不少爭議。」此外，隨著科技進步，商家能更容易優化翡翠顏色、提升透明度或以樹脂填充裂縫。

他說：「以上這些因素都影響翡翠銷售和消費者信心，因此制訂一套標準的翡翠測試方法實屬必要，讓鑑證師和鑑定所可按照同一套標準對翡翠進行檢測，作出類同的檢測結果。」

自修訂版「香港標準硬玉質翡翠測試方法」於2006年推出以來，黃紹基指無論翡翠貿易商或消費者都對買賣翡翠表現出更大信心。事實上，翡翠零售額在過去10年間足足翻了10倍。「今天，幾乎所有貴重翡翠首飾都附有由香港認可處認可鑑定所發出的硬玉質翡翠鑑定證書，這大大提升了消費者對購買翡翠首飾的信心。」

黃金成色測試

除了寶石鑑定，香港的檢測和認證業亦為珠寶業提供黃金成色測試服務。由金銀業貿易場創立的香港貴金屬驗證中心有限公司，是其中一間提供黃金成色測試的本地實驗所，獨立運作，並獲得香港認可處的認可實驗所資格。

Hong Kong Jewellers' and Goldsmiths' Association
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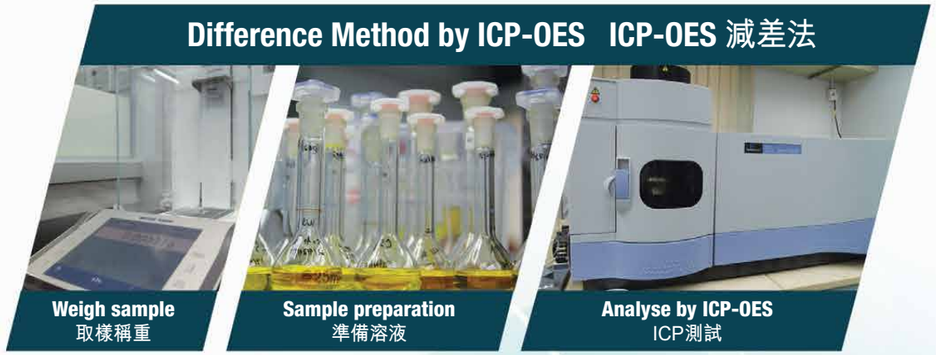


Chinese Gold & Silver Exchange Society (CGSE) 金銀業貿易場

The Centre offers two test methods for gold fineness determination, that is, the Fire Assay (Cupellation Method) and the Difference Method using ICP-OES. Fire Assay is a typical method for direct gold content determination. The Centre adopted internationally recognised standard cupellation methods (ISO 11426, GB/T 9288, ASTM E1335). For instance, ISO 11426 is suitable for determining gold in gold jewellery alloys that the gold content of alloys lies between 333‰ and 999‰. The Difference Method using ICP-OES (ISO 15093) is an indirect method for gold content determination. According to the method, gold sample alloys are weighed and dissolved in aqua regia. The impurities are then determined by inductively coupled plasma optical emission spectroscopy (ICP-OES). The gold content is obtained by subtracting the contents of impurities in the sample.

"The testing service helps to ensure that jewellers' products meet relevant gold fineness standards, and protects consumers' interests," says Dr Cheung. "The service further helps promote the reputation of Hong Kong's jewellery industry, such that consumers will have more confidence in the industry and its jewellery."

Testing and certification services provide quality assurance of goods and services to customers. For more information about Hong Kong's testing and certification industry, please visit the Hong Kong Council for Testing and Certification website at www.hkctc.gov.hk.

Accreditation helps testing and certification service users to identify reliable service providers. To identify service providers accredited by the Hong Kong Accreditation Service (HKAS) and the scope of their services, please visit www.hkas.gov.hk.

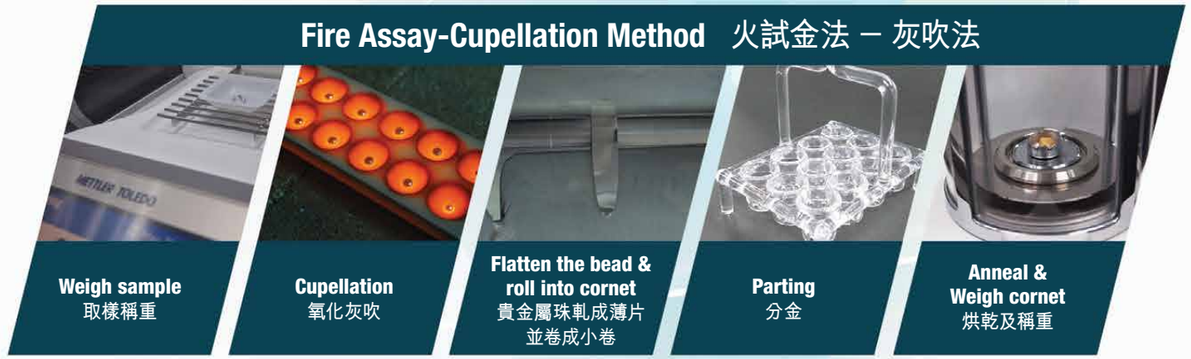
金銀業貿易場理事長張德熙博士說：「我們為本地中小型及大型珠寶公司和買家提供黃金產品(如：金條和金飾)的測試服務。中心以國際認可的方法進行黃金成色測試，多年來中心亦協助本地珠寶首飾商會進行定期年檢，測試其會員出售的金飾產品是否符合商會的黃金成色標準。」

驗證中心採用兩種黃金成色測試方法：火試金法和ICP-OES減差法。火試金法是典型的黃金成色測試方法，直接測定黃金含量。該中心提供的火試金法為國內外廣泛使用的標準方法（ISO 11426、GB/T 9288及ASTM E1335），其中ISO 11426的測定範圍適用於介乎333‰至999‰的金合金首飾。ICP-OES減差法是另一種黃金成色測試，中心使用ISO 15093國際標準方法，以非直接的方式測得黃金成色。樣本以王水溶解，利用感應耦合電漿放射光譜儀(ICP-OES)測得雜質元素的含量，透過減去雜質含量得出樣本的黃金成色。

張博士說：「測試服務有助確保珠寶商的黃金製品符合相關黃金成色的標準，推動本港珠寶首飾業界商譽，保障及維護消費者權益，為消費者提供信心保證。」

檢測及認證服務為客戶提供產品及服務的質素保證，欲知更多香港檢測和認證行業的資料，請瀏覽香港檢測和認證局網頁：www.hkctc.gov.hk。

認可資格有助檢測和認證服務使用者識別可靠的服務提供者，欲知更多獲香港認可處認可的服務提供者及其認可範圍的資料，請瀏覽網頁：www.hkas.gov.hk。



Chinese Gold & Silver Exchange Society (CGSE) 金銀業貿易場