

香港檢測 香港認證

TESTED in Hong Kong
CERTIFIED in Hong Kong

檢測事業

Testing-for-a-Career







Hong Kong's Testing and Certification Industry

The testing and certification industry is an industry with good development potentials and a sector where Hong Kong enjoys clear advantages. Over the years, the industry has established a good foundation based on high professional standards, an excellent reputation and a robust accreditation system.

In addition to its direct contribution to the economy, the industry also supports the manufacturing, export and other service industries. The industry plays an important role in the local daily life and has been providing a high volume of testing and inspection services for consumer products manufactured in Hong Kong and the Pearl River Delta Region. It is estimated that about 60% of the business of the industry is related to international trade.

Generally, the industry provides three types of services: **testing, inspection and certification.**

香港的檢測和認證業

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，憑藉卓越的專業水平、優良聲譽以及健全的認可制度，檢測和認證業已奠定穩固的基礎。

檢測和認證業除了在本本地作出直接貢獻外，亦支援了製造業、出口業和其他服務業。檢測和認證業在我們的日常生活中擔當重要角色，同時亦一直為香港和珠江三角洲地區製造的消費品，提供大量測試和檢驗服務，為香港與其他經濟體系的龐大貿易提供支援。據估計，檢測和認證業約有 60% 的業務與國際貿易有關。

一般而言，檢測和認證業提供三種服務：**測試、檢驗和認證。**



檢測和認證業主要提供三種服務：測試、檢驗和認證。

甚麼是測試？

測試指按照程序檢定物件的一項或多項特性，例子包括：

A news reporter sends fresh pak-choy to a testing laboratory to find out if it contains harmful pesticide residues.

新聞記者將新鮮白菜送到測試實驗室化驗是否含有有害的殘留農藥。



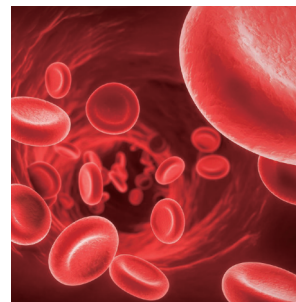
The industry mainly provides three types of services : **testing**, **inspection** and **certification**.

What is Testing ?

Testing is the determination of one or more characteristics of an object according to a procedure. Examples include:

A doctor sends a patient's blood sample to the medical laboratory to check its red blood cell count.

醫生將病人的血液樣本送到醫務化驗所以檢定其紅血球數量。



本地約一半測試服務的需求來自醫務化驗。另一半的測試服務則來自多個界別及產品，如中藥、建築材料、電子及電氣產品、食品、珠寶等等。

Locally about half of the demand for testing service comes from medical testing. Other than medical testing, testing services cover a vast array of sectors and products including Chinese medicines, construction materials, electronic and electrical products, food, jewellery and so on.

甚麼是檢驗？

檢驗指運用專業判斷，檢查產品設計、產品本身、製造過程或安裝方法，以檢定是否符合特定或一般要求，例子包括：

An overseas buyer arranges inspection by an independent inspection body to check a batch of products at the factory before shipment to ensure that the products are exactly the way the buyer wants.

海外買家安排獨立檢驗機構在產品付運前，於工廠檢驗整批產品，確保是完全按照他的要求生產。



What is Inspection ?

Inspection is the examination of a product design, product, process or installation and determination of its conformity to specific or general requirements on the basis of professional judgement. Examples include:

The structural welds at a construction site are checked for its compliance with the required standards.

建築地盤結構焊接須通過檢驗，以確定是否符合規定的標準。



本港有很多與安全有關的檢驗工作，例如升降機和自動梯的檢驗（法定要求），或室內空氣質素的檢驗（自願參與）等。

There are many safety-related inspections in Hong Kong, such as the inspection of lifts and escalators (statutory requirement), or the inspection of indoor air quality (voluntary participation).

甚麼是認證？

認證指由第三方就產品、過程、系統和人員提供保證，例子包括：

The quality management system implemented in a company is certified to conform to the ISO 9001 standard.

某公司實施的品質管理體系通過認證證明是符合 ISO 9001 標準。

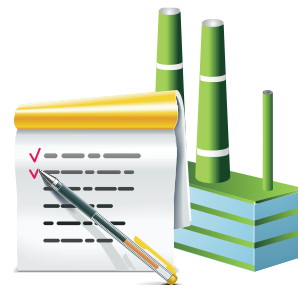


What is Certification ?

Certification is a third-party attestation related to products, processes, systems and persons. Examples include:

The concrete manufactured in a factory has been certified for conformity to the Quality Scheme for the Production and Supply of Concrete.

某工廠生產的混凝土符合「混凝土生產和供應質量規範」的要求，並取得相關認證。



香港的認證活動大致可分為兩類：系統認證及產品認證。

Hong Kong's certification activities are broadly in two categories: system certification and product certification.

香港特別行政區政府大力支持行業的發展，在 2009 年 9 月成立 **香港檢測和認證局**，負責就推動行業發展的整體策略提供意見。香港檢測和認證局是一個諮詢組織，成員由行政長官委任。

香港檢測和認證局的願景是將香港發展成區內的檢測和認證中心。為實現這願景，香港檢測和認證局與香港認可處、行業從業員、專業人士、政府部門 / 公共機構及其他多方持份者，致力推動業界發展，透過建立「香港檢測·香港認證」品牌，提升本港檢測和認證服務的專業水平和國際認證性。

此外，創新科技署轄下的**香港認可處**透過三項認可計劃，主要向位於香港的實驗室、認證機構及檢驗機構提供認可服務。

認可服務是由第三方發出證明，對一間合格評定機構能勝任進行特定的合格評定工作予以正式承認。在香港申請認可資格是公開和自願的。



The Government of the Hong Kong Special Administrative Region renders full support to the industry's further development and established the **Hong Kong Council for Testing and Certification (HKCTC)** in September 2009 to advise on the overall strategy to support the development of the industry. HKCTC is a non-statutory advisory body with Members appointed by the Chief Executive.

HKCTC's vision is for Hong Kong to develop into a testing and certification hub in the region. To realise the vision, HKCTC works with the Hong Kong Accreditation Service, industry practitioners, professionals, Government departments/public organisations and many other stakeholders to raise the industry's professional standards and to enhance the recognition of the local testing and certification services in the international arena through the branding of "Tested in Hong Kong, Certified in Hong Kong."

Furthermore, the **Hong Kong Accreditation Service (HKAS)**, being part of the Innovation and Technology Commission, provides accreditation services mainly to laboratories, certification bodies and inspection bodies located in Hong Kong through three accreditation schemes.

Accreditation is the third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks. In Hong Kong, accreditation is open and voluntary.



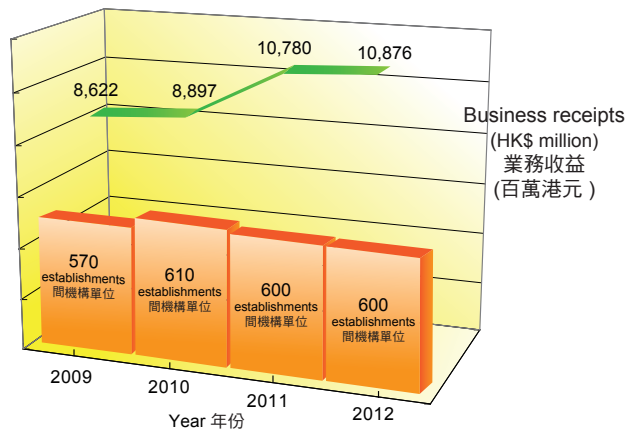
There were about 705 establishments engaging in testing, inspection and certification activities in 2012, roughly comparable to the 690 in 2009. Of the 705 establishments, 600 were private independent establishments, whereas the rest was either in-house testing laboratories in large manufacturers/ exporters or laboratories in the Government/ public organisations. The business profile of private independent establishments is set out below.

2012年，大約有705間機構從事測試、檢驗及認證業務。與2009年的690間相約。705間機構中有600間為私營獨立機構單位，其餘則為大型製造商和出口商的內部測試實驗室，以及政府部門/公共機構內的實驗室。以下是有關私營獨立機構單位的業務概況。

Business profile of private independent establishments 私營獨立機構單位業務概況

The general situation of private independent establishments for the past few years is shown below:

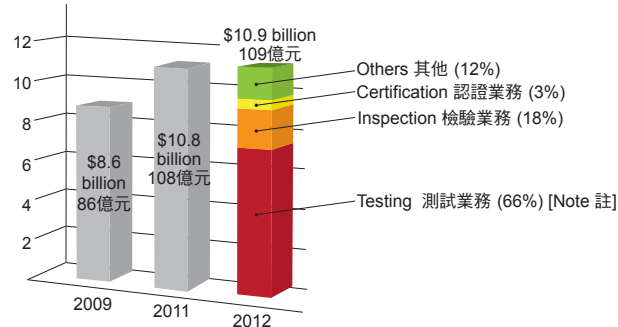
私營獨立機構單位過去幾年的一般情況如下：



(Statistics from Census & Statistics Department 政府統計處資料)

The total business receipts of the private independent establishments were HK\$10.9 billion in 2012, an increase of about 26% compared to about HK\$8.6 billion in 2009.

2012年，業內私營獨立機構單位的業務收益總額約為109億港元，較2009年約86億港元增加約26%。



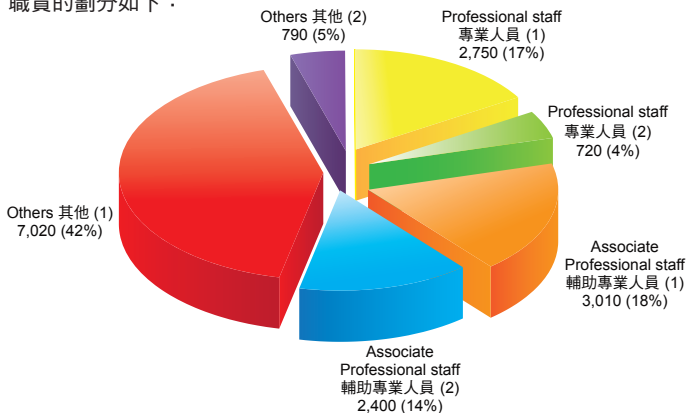
註：測試業務中約八成屬於四個類別：紡織品、衣服和鞋履；玩具和遊戲；醫務化驗；及電氣產品。

Note: Of the testing business, some 80% were related to four areas: textiles, clothing and footwear; toys and games; medical testing; and electrical products

The 2012 situation 2012 年情況

In 2012, the total number of persons engaged in the testing and certification industry was about 16,680. The distribution by major services rendered is as follows :

2012 年，檢測及認證業的總就業人數約為 16,680 人。按其主要職責的劃分如下：



(1) : Private independent establishments

私營獨立機構單位

(2) : In-house laboratories in large manufacturers/ exporters, and laboratories in Government departments/ public organisations

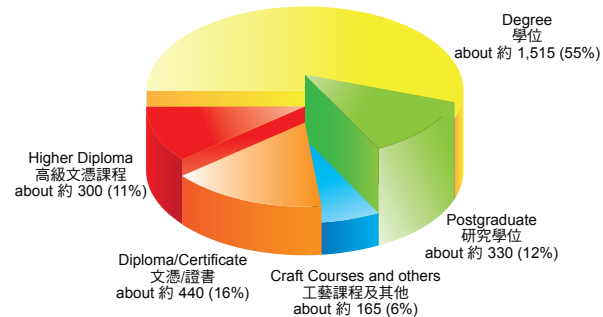
大型製造商及出口商內部實驗所 和 政府部門 / 公共機構內的實驗所

(Statistics from Census & Statistics Department 政府統計處資料 ;
Figures may not add up to the corresponding totals due to rounding.
由於進位原因，數字加總後與總就業人數略有出入。)

According to C&SD's estimate in 2012, the manpower requirement is projected for an increase in the next few years if the economic environment is stable. Such growth could mainly be accounted for by more stringent safety standards and regulatory requirements for products, more demand for medical services, increase in construction projects and so on. 統計處 2012 年發表的推算，如果經濟環境維持穩定，行業整體在往後幾年將會增加就業人數，這主要是幾方面可能有增長：更嚴格的产品安全標準 / 法規、更多醫療服務的需求以及建設項目增加等。

Of the 2,750 professional staff engaged in private independent establishments, the distribution by education attainment is as follows :

私營獨立機構單位內 2,750 位專業人員按教育程度的劃分如下：





就測試實驗所和檢驗機構而言，部份員工是非學位持有人，但越來越多員工已達到大學教育程度。與測試實驗所及檢驗機構相關的大學科目大致包括**科學、應用科學、工程、時裝與紡織**等。也有部份大學學科（如分析化學）和職訓局課程，是與測試相關或專為測試行業而設的。

一般而言，新入職員工需要接受半年左右的在職培訓。

認證機構方面，員工一般須達到大學教育程度，並擁有相關行業的工作經驗。他們可來自不同的學科背景。這個界別需要具有良好溝通及語言技巧的人才。員工主要透過在職培訓累積工作知識，新入職員工培訓時間一般為6至9個月。



For testing laboratories and inspection bodies, some staff are non-degree holders but more and more staff have attained university level education. Relevant disciplines in universities are mainly **science, applied science, engineering, fashion and textiles** and so on. There are also programmes in universities (such as Analytical Chemistry) and Vocational Training Council (VTC) that are more closely related to or tailor-made for the testing sector.

Generally speaking, about six months on-the-job training is required for new recruits joining this sector.

Certification bodies generally require persons with university level education and working experience in relevant trades. They may come from various academic disciplines but good communication and language skills are important to this sector. Work knowledge is mainly built up through on-the-job training. For new recruits joining this sector, 6 to 9 months on-the-job training is usually required.



I am working in the testing and certification industry

I chose to work as a chemical technician because I prefer to work quietly and I can focus well. Testing work often requires long hours of patience and concentration in handling tests samples and data. Some might find it mundane but I find it interesting. Everytime I can work out the results correctly, I feel great. Besides, I think the industry has a very good future because testing is everywhere in daily life, such as food, toys and petroleum products, etc. If you are interested, I encourage you to be proactive in learning to be more meticulous and patient. I also hope there would be opportunities for overseas chemists to share experiences in Hong Kong.

選擇化驗員這工作，最主要的是因為適合我文靜專注的性格。化驗工作往往需要長時間耐心處理測試樣本及數據。有些人可能對此不感興趣。但我反而能從中找到趣味。每次做出正確的數據，我都很有成就感。另外，我相信行業的發展前景頗好，因為生活上都離不開化驗，如食物、玩具、石油產品等等，所以市場對專業化驗師有一定的需求。

如果你對化驗有興趣，我會鼓勵你多點主動學習，同時要訓練自己更細心更有耐性，更加重要是要認真看待你的工作，因為任何一個細微的失誤都可以引起嚴重錯誤的測試結果。

我現時工作崗位有很多培訓，這對剛畢業的員工是很重要的，我很珍惜和感到開心。我也希望有更多外地專業化驗員來港交流及分享經驗。

**Chan Chun-lin, IVE HD in Chemical Science and
Biotechnology 2013 graduate**
陳俊連，IVE 化驗科學及生物科技高級文憑 2013 年畢業生

Since September 2012, IVE offers HD in Analytical Science and HD in Biotechnology to replace HD in Analytical Science and Biotechnology. HD in Analytical Science has a stream in Testing and Certification. 由 2012 年 9 月起 IVE 提供「化驗科學高級文憑」及「生物科技高級文憑」取代「化驗科學及生物科技高級文憑」。其中「化驗科學高級文憑」提供檢測與認證分流。

I am working in the testing and certification industry too



I wanted to be a professional chemist since secondary school. After finishing my bachelor degree, I worked in a commercial testing laboratory, responsible for the testing of toys and children's products, food, electrical and electronics products, etc. Although the product category is wide. My job is exciting and it's very challenging that I can try many new initiatives. Recently, I was given an award under the QF Award Scheme for attending the China International Food Safety & Quality Conference in Beijing. Apart from deepening my knowledge on food safety, it has also strengthened my career goal in working in the quality assurance industry. It was a very fruitful experience.

The well-developed accreditation system and global reputation in Hong Kong can support the testing, inspection and certification industry to provide high quality and internationally-recognized professional services to local organizations and oversea buyers. Nowadays, demand on product safety and quality keeps rising. An independent and professional testing service acts as a gatekeeper on consumer safety, assist manufacturers to enhance product competitiveness and raise consumers' confidence. That's why the testing, inspection and certification practitioners are having more chances to develop their careers. Any youngsters who are interested in this industry should act quickly to seize the opportunity.

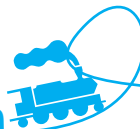
中學時已定下成為專業化驗師的目標。大學畢業後在商業化驗所工作，負責玩具及兒童用品、食品、電器及電子產品等化驗工作。產品覆蓋面繁多，且工作充滿刺激與挑戰，亦可不斷嘗試新事物。最近參與資歷架構的學習體驗獎勵計劃，到北京參加中國國際食品安全與質量控制會議，除了加深我對食物安全的認識外，亦對自己在投身品質檢定這行業的發展方向更清晰，獲益良多。

香港擁有健全的認證制度和良好的國際聲譽，有助檢測認證業為本地公司和海外買家提供高水平及國際認可的專業服務。近年市場對產品安全、質量要求日漸提高，獨立及專業的品質認證和產品測試服務不但可以為大眾的安全把關，協助廠家提升產品競爭力，加強消費者信心，更能夠為香港檢測認證從業員提供良好的就業機會和發展空間。有意從事這行業的年青人，應把握現在，快些行動！

Brian Yip, Dip. in Chemistry Technology from IVE, degree holder in Chemistry with 6 years of working experience in the testing and certification industry
葉居衡，IVE 化學科技文憑畢業生、化學學士、六年檢測認證業工作經驗



Equipping yourself for a career in testing and certification



Degree and Higher Diploma programmes on testing and certification 檢測認證的學位及高級文憑課程

Other relevant degree and sub-degree programmes : science, applied science, engineering, fashion and textiles and so on 其他相關的學位課程和副學位課程，如科學、應用科學、工程、時裝與紡織等

Open University of Hong Kong

- BSc in Product Design, Testing and Certification
- BSc (Hons) in Testing and Certification
- MSc in Testing and Certification

香港公開大學

- 產品設計、檢測及認證理學士
- 檢測及認證榮譽理學士
- 檢測及認證理學碩士

Other higher diploma and diploma programmes with testing and certification contents (details at its website t-cert.vtc.edu.hk) 包含檢測和認證內容的其他高級文憑及文憑課程 (詳見網址t-cert.vtc.edu.hk)

VTC's Institute of Vocational Education on testing and certification

Hong Kong Baptist University

- BSc (Hons) in Analytical and Testing Sciences

香港浸會大學

- 分析和檢測科學 (榮譽) 理學士

- HD in Product Testing
- HD in Analytical Science (Testing and Certification)
- 產品測試高級文憑
- 化驗科學 (檢測與認證)高級文憑

職訓局轄下的專業教育學院(IVE)提供檢測和認證課程

Local universities offer degree programmes on testing and certification
本地大學提供檢測和認證課程

Chinese University of Hong Kong

- MSc in Accreditation Chemistry
- ### 香港中文大學
- 認證化學碩士

The list of academic programmes on testing and certification is for information only. The industry may hire graduates of these and other programmes. There are many other programmes or development opportunities relevant to the industry. When in doubt, you can discuss your career plan with prospective employers, recruiters, career counselors or others who know the industry.

此檢測認證學科及課程清單只供參考。行業可聘用這些課程或其他課程的畢業生。而與行業相關的其他課程或發展機會尚有不少。如有疑問，應與準僱主、招聘員、就業輔導員或其他了解行業人士等商討你的就業計劃。



專業發展方面，IVE 提供短期的兼讀進修課程協助從業員掌握最新的知識及技術。香港認可處亦不時舉辦短期課程或工作坊，與行業從業員分享最新的實用技術知識。其他機構如香港測檢認證協會和香港生產力促進局等亦為從業員提供相關培訓。

專業認可方面有資歷架構及「檢測專業人員認證計劃」。

資歷架構的《能力標準說明》列出執行不同職務時需具備的能力，包括認知、知識及應用能力、以及其表現要求和成效標準。此外，從業員可以按照行業的進階路徑，訂立進修目標，透過獲取資歷架構的認可資歷，從而自我增值，追求終身學習。

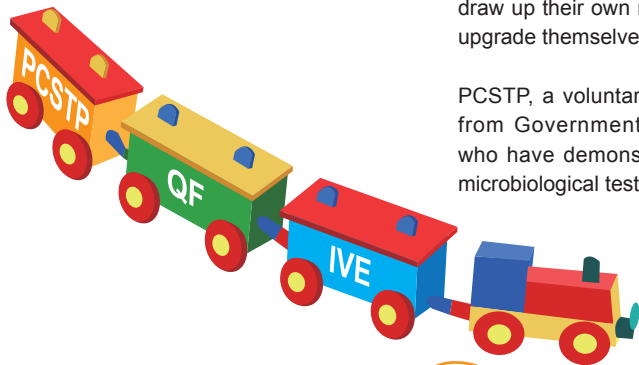
檢測專業人員認證計劃是由政府「中小企業發展支援基金」資助及香港測檢認證協會制訂的自願性計劃。測試人員若在其測試範疇（如微生物測試）內達到能力水平，該計劃可提供專業資格認可。

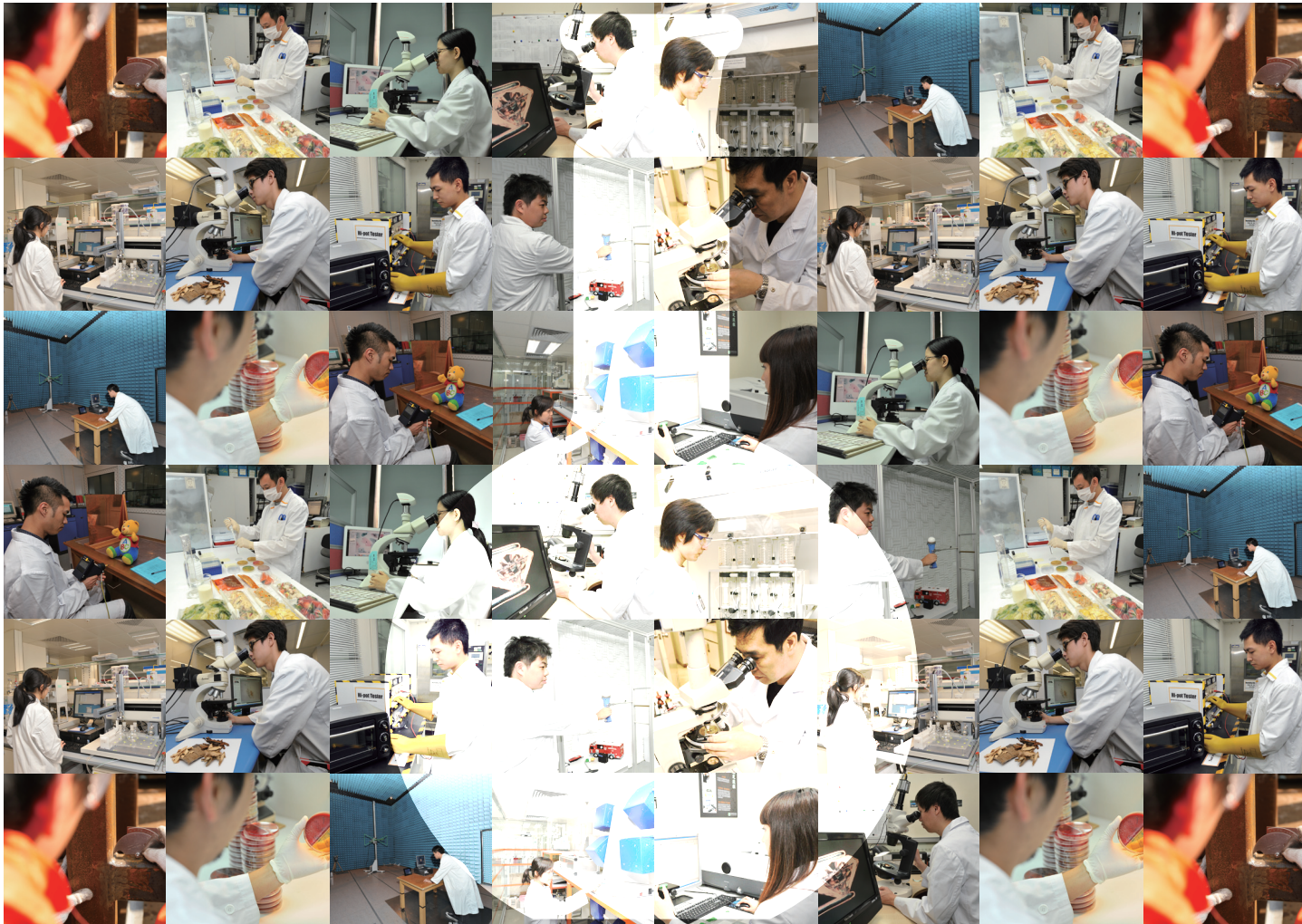
On professional development, IVE offers short part-time upgrading courses for industry practitioners to update their knowledge and skills. HKAS also organises short courses or workshops from time to time to share the latest practical know-how with industry practitioners. Other organisations such as the Hong Kong Association for Testing, Inspection and Certification (HKTIC) and the Hong Kong Productivity Council also provide relevant training activities to practitioners.

On professional recognition, there are the Qualifications Framework (QF) and the Professional Certification Scheme for Testing Personnel (PCSTP).

The Specification of Competency Standards under the QF sets out the skills, knowledge and competency standards required of practitioners to perform various job functions in industries effectively. By making reference to the progression pathways of industries, practitioners can draw up their own road maps to acquire QF-recognized qualifications to upgrade themselves and pursue lifelong learning.

PCSTP, a voluntary scheme developed by HKTIC with a sponsorship from Government's SME Development Fund, certifies individuals who have demonstrated competence in their field of testing such as microbiological testing.







香港檢測和認證局
The Hong Kong Council for
Testing and Certification



香港認可處
Hong Kong
Accreditation Service

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