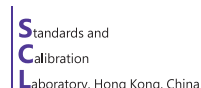


主辦機構 Organisers



Metrology Symposium 2020

計量學研討會2020



Date: 10 January 2020 (Friday)
Time: 1:30 p.m. to 5:00 p.m.
Venue: D0309, 3/F, Jockey Club Campus,
The Open University of Hong Kong
81 Chung Hau Street, Ho Man Tin,
Hong Kong

日期：2020年1月10日（星期五）
時間：下午1時30分至下午5時
地點：九龍何文田忠孝街81號
香港公開大學賽馬會校園
3樓D0309演講廳

The International System of Units - Fundamentally better 國際單位制 - 根本性飛躍

支持機構 Supporting Organisations



Introduction 引言

On 20 May 2019, the World Metrology Day (WMD) 2019, the International System of Units (SI) was revised so that all the seven base units, namely, the second, the metre, the kilogram, the ampere, the kelvin, the mole and the candela, were defined based on seven defining constants related to the fundamental laws of nature. The re-definition removes the instability imposed by the use of artefact standards and makes these SI base units “fundamentally better”. Hence, the official theme for WMD 2019 was chosen as “The International System of Units – Fundamentally better”. A poster designed by SCL was used globally to promote this event.

The revision of the SI enables the base units to be realized with accuracies limited only by the physical nature and our technical capability but not by their definitions. In recent year many innovative primary methods have been developed or refined for the practical realization of the base units using the law of physics. Some examples are the X-ray-crystal-density (XRCD) method for realization of the kilogram, the single electron transport (SET) method for realization of the ampere, the cryogenic radiometer for realization of the candela and the use of optical methods to realize the second. There were also numerous advances in the field of reference material and the metrology of chemistry and biology. The Symposium attempts to unfold to the local testing and certification industry as well as the parties interested in metrology how the revised SI will enable us to enhance the accuracy in measurement science and technology. Advance topics in the latest research and development related to the primary standards in various fields will also be discussed.

2019 年 5 月 20 是世界計量日 (WMD)。由那天開始，國際單位制 (SI) 的所有七個基本單位，包括秒、米、千克、安培、開爾文、摩爾和坎德拉，會以相關的七個常數重新定義。重新定義消除了使用物理實物作為計量標準帶來的不穩定性，使 SI 基本單位有了“根本性飛躍”。因此 2019 年世界計量日的官方主題選定為“國際單位制 - 根本性飛躍”。標準及校正實驗所設計的海報已在全球被用以推廣此次修訂。

國際單位制的修訂，使復現基本單位的準確度僅受限於物理自然和技術能力，而非其定義。近年開發或改進了許多創新的原級方法，根據物理定律去復現基本單位。例子包括用於復現千克的 X 光晶體密度 (XRCD) 法，用於復現安培的單電子傳輸 (SET) 方法，用於復現坎德拉的低溫輻射計，以及使用光學方法去復現秒。另外在參考物質、以及化學和生物計量學領域上也取得了許多進展。研討會會向本地測試和認證行業，以及對計量學感興趣的各方展示修訂後的國際單位制將如何提高測量科學和技術的準確度。另外，有關不同領域上原級標準的最新研究和發展也將在研討會一併討論。

Date	10 January 2020 (Friday)
日期	2020 年 1 月 10 日 (星期五)
Time	1:30 p.m. to 5:00 p.m.
時間	下午 1 時 30 分至下午 5 時
Venue	D0309, 3/F, Jockey Club Campus,
地點	The Open University of Hong Kong 香港公開大學賽馬會校園 3 樓 D0309 演講廳
Language	Cantonese (presentation slides in English)
語言	粵語 (英語投影片)
Fee	Free admission
費用	免費入場





Programme of the Symposium 研討會內容

Time 時間	Programme 程序
1:30 p.m.	Registration and Poster Session 登記與海報環節
2:00 p.m.	Welcoming Address 歡迎致辭 Prof. Reggie CP KWAN , Provost, The Open University of Hong Kong 香港公開大學 副校長（學術）關清平教授
2:05 p.m.	Guest Photo 嘉賓合照
2:10 p.m.	Keynote Speech: A 35-year History of Setting up Primary Standards of Physical Measurements for Hong Kong 專題演講：細說三十五年 - 香港設立物理測量基準的歷史 Mr. CM TSUI , Head of Laboratory, Standards and Calibration Laboratory 標準及校正實驗所 實驗所主管 徐佐文先生
2:30 p.m.	The Story of the Candela, the Eye and the Cryogenic Radiometer 坎德拉，眼睛和低溫輻射計的故事 Ms. Brenda HS LAM , Senior Electronics Engineer, Standards and Calibration Laboratory 標準及校正實驗所 高級電子工程師 林凱珊女士
2:50 p.m.	Mole: The Fundamental of Metrology in Chemistry and Biology 摩爾：化學和生物計量學的基礎 Dr. Kelly WY CHAN , Chemist, Government Laboratory 政府化驗所 化驗師 陳慧怡博士
3:10 p.m.	Let's Count Elementary Charges 齊來數電荷 Dr. Steven SL YANG , Acting Senior Electronics Engineer, Standards and Calibration Laboratory 標準及校正實驗所 署理高級電子工程師 楊承隆博士
3:30 p.m.	Break and Poster Session 小休與海報環節
3:50 p.m.	From Ancient to Modern, the Development of Time Measurement Using Optics 古今以光學技術測量時間的發展 Dr. Terry HW LAI , Electronics Engineer, Standards and Calibration Laboratory 標準及校正實驗所 電子工程師 黎孝華博士
4:10 p.m.	Reference Materials - Considerations to Maintain Metrological Traceability 參考物質 - 維護計量學溯源性的考慮 Dr. Eric TP SZE , Associate Professor, The Open University of Hong Kong 香港公開大學 助理教授 史東甫博士
4:30 p.m.	Transition from the International Prototype of Kilogram (IPK) to a Fundamental Constant 從國際公斤原器 (IPK) 過渡到一個常數 Mr. Raymond WM LEUNG , Electrical and Mechanical Engineer, Standards and Calibration Laboratory 標準及校正實驗所 機電工程師 梁偉文先生
4:50 p.m.	Q&A Session 答問環節
5:00 p.m.	End of Symposium 研討會結束

Note: The organisers reserve the right to alter the symposium programme without prior notice.
 注意：主辦方保留更改專題研討會內容的權利，恕不另行通知。



Enrolment Form 報名表格

To enrol, please complete and return this e-Form by email on or before **30 December 2019 (Monday)**. You can also submit the completed form by fax.

如欲報名，請於 **2019 年 12 月 30 日 (星期一)** 或之前，填妥本電子報名表格以電郵交回。閣下亦可以傳真方式遞交報名表格。

Email 電郵 : metrology2020@icc.com.hk or 或 Fax 傳真 : 2547 9528

Seats are subject to availability. Confirmation of seating will be notified by phone or email starting from 3 January 2020 (Friday).

研討會座位供應須視乎情況。我們將在 2020 年 1 月 3 日 (星期五) 起以電話或電郵確認座位預留。

Enquiries 查詢 : Ms Christine Yiu 姚小姐 Tel 電話 : 2559 9973 Email 電郵 : metrology2020@icc.com.hk

Name of Contact Person 聯絡人姓名			
Organisation 機構			
Email 電郵			
Tel 電話		Fax 傳真	
Date 日期			

The following representative(s) would like to attend the symposium 下列代表擬出席研討會 :

Name 姓名	Position 職位	Email 電郵	Telephone 電話

Type of Industry 行業種類

- | | | | |
|--|---|---|---|
| ☐ Calibration, Testing & Certification
校正、檢測及認證業 | ☐ Healthcare
醫療健康業 | ☐ Manufacturing
製造業 | ☐ Construction
建築業 |
| ☐ Trading and Services
貿易及服務業 | ☐ Public Utilities
公用事業 | ☐ Education/Academia
教育 / 學術界 | ☐ Research and Development
研究及開發界 |
| ☐ Others, please specify 其他，請註明 _____ | | | |

How did you know about this Symposium? (Can choose more than one) 閣下是如何得知是次研討會 (可選多於一項)

- | | |
|--|--|
| ☐ By Invitation E-mail
電郵 | ☐ Hong Kong Council for Testing and Certification Website
香港檢測和認證局網頁 |
| ☐ Others, please specify
其他，請註明： _____ | |

Please put a ✓ in the box as appropriate. 請於適當空格加上 ✓ 號。

Notes 注意事項：

- (1) The organisers have engaged International Conference Consultants Ltd as the event co-ordinator for the symposium to handle logistics and all enrolment matters.
主辦機構聘請了國際會議顧問有限公司協助籌辦是次研討會，包括處理行政和報名等事宜。
- (2) The personal data provided in this form will be used for enrolment to the symposium and other symposium-related purposes. The symposium organisers and the event co-ordinator will be able to access such personal data.
在本報名表格內所提供的個人資料，將用於研討會報名以及其他與研討會有關的事宜上。主辦機構及代理機構均會取得這些個人資料。
- (3) Information collected in the Enrolment Form will be destroyed within one month after the symposium is held.
本表格上的報名資料將於研討會舉行後一個月內銷毀。
- (4) For correction of or access to personal data after submission of the Enrolment Form, please contact the event co-ordinator under Enquiries above.
提交報名表格後，如欲更改或查詢個人資料，請按上述查詢辦法提出。