CCT member and observer Activity Report

Period: January to December 2021

Institute: Standards and Calibration Laboratory

State economy: Hong Kong, China

Number of persons involved in thermometry of the institute: 5

Short summary of research and development:

1. The calibration service for temperature chambers from -80 °C to 250 °C in accordance with IEC60068-3-5:2018 has been accredited in the last thermometry peer review exercise conducted by Dr Inseok YANG of KRISS in July 2021.

2. SCL is planning to set up fixed point blackbodies from the indium point to the copper point.

3. SCL is planning to set up heatpipe blackbodies with operating range from 300 °C to 1000 °C.

4. SCL is planning to extend the measurement capability from 1200 °C to 1500 °C for thermocouple calibration.

Short summary of recent comparison activity:

(i) APMP.T-K8 Comparison of high dew point temperature
Status: The final report was approved for equivalence and published in vol 58 of Metrologia.

(ii) APMP.T-S11 Local realization of radiation thermometer scale from indium point to 2000 °C
(Measurement range of the SCL: Temperature 156 °C to 960 °C)
Status: The SCL completed the measurements in November 2016 and submitted the results to the pilot laboratory NMIJ in December 2016.

(iii) APMP.T-S15 Calibration of blackbody for clinical infrared ear thermometers
Status: The SCL completed the measurements in October 2018 and submitted the results to the pilot laboratory NIM in November 2018.

(iv) APMP.T-K4.2 Comparison of Realization of the Aluminum Freezing Point
Status: The SCL completed the measurements in June 2019 and submitted the results to the pilot laboratory KRISS in October 2019.

(v) APMP.T-K6.2013 Comparison of Humidity Standards Dew/Frost-Point Temperature –50 °C to +20 °C
Status: The SCL completed the measurement in January 2020 and submitted the results to the pilot laboratory NMC- A*STAR in March 2020.

(vi) APMP.T-K9 ITS-90 Comparison on SPRT Calibration from the Argon Triple Point to the Zinc Freezing Point
Status: The SCL completed the measurement in April 2020 and the measurement results were submitted to the pilot laboratory NIM in May 2020.

(vii) APMP.T-S14 Calibration of Relative Humidity sensor
Status: The SCL completed the measurements in September 2021 and submitted the results to the pilot laboratory MSL in November 2021.

Short summary of other activities:

1. Up to October 2021, the SCL has 34 thermometry CMC items listed in Appendix C of the CIPM MRA.

2. Peer review in temperature measurement area was conducted by Dr Inseok YANG of KRISS in July 2021 and humidity measurement area was conducted by Dr WANG Li of NMC-A*Star in July 2021. The next peer review is planning to conduct in 2022.

Link to bibliography or list of bibliography (last 5 years):

C. P. Cheung, H. S. Lam, C. M. Tsui, C. M. Leung, "Measuring the Performance of Temperature Chambers in Accordance with IEC60068-3-5:2018," NCSLI 2020 Conf., August 2020.

C. P. Cheung, C. M. Tsui, C. M. Leung and C. F. Ma, "Implementation of Instantaneous Comparisons Method in Temperature Gradient Evaluation of Stirred Liquid Temperature Baths," Tempmeko & Tempbeijing 2019, Chengdu, China, June 2019.

Julian C. P. Cheung, Brenda Lam, C.M. Tsui, C.F. Ma and C.M. Leung, "An Adaptive Thermocouple Inhomogeneity Scanning System", NCSLI 2019 Conf, August 2019.