Issue date: 30 August 2023
Valid until: 25 March 2025

NO: SAMM 763
(Issue 3, 30 August 2023 replacement of SAMM 763 dated 19 January 2023)

LABORATORY LOCATION: (PERMANENT LABORATORY)

INSTITUTE OF NANOSCIENCE AND NANOTECHNOLOGY (ION2) (formerly known as INSTITUTE OF ADVANCED TECHNOLOGY)
UNIVERSITI PUTRA MALAYSIA
43400 SERDANG, SELANGOR
MALAYSIA

FIELD OF TESTING: **CHEMICAL**
FIELD OF CALIBRATION: **MASS**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Chemical Testing – Non-volatile Solid Materials	Identification of Elements	In-house Method (UPM/ION2/TM2) – Qualitative Determination of the Element from Beryllium to Uranium Periodic Table for Solid Materials using FESEM- EDX
Chemical Testing – Non-volatile Solid Materials	Morphology Imaging	In-house Method (UPM/ION2/TM1) – Morphology Imaging of Solid Materials Using FESEM

Signatories:

1. **Prof. Dr. Nor Azah Yusof** — **IKM No.: M/2774/5479/09**
2. **Prof. Dr. Janet Lim Hong Ngee** — **IKM No.: M/3519/6357/12**
3. **Sarinawani Abdul Ghani** — **IKM No.: M/5657/9147/21**
4. **Assoc. Prof. Dr. Khamirul Amin Matori** — **Morphology**
5. **Dr. Ismayadi Ismail** — **Morphology**
6. **Assoc. Prof. Dr. Jaafar Abdullah** — **IKM No.: M/5534/8986/21**

SCOPE OF CALIBRATION: MASS

Instrument Calibrated/ Measurement Parameter	Nominal Value	Calibration and Measurement Capability Expressed as an Uncertainty (±)*	Remarks
Standard Weights	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg	0.016 mg 0.019 mg 0.025 mg 0.031 mg 0.039 mg 0.047 mg 0.14 mg 0.16 mg 0.39 mg 0.78 mg 1.55 mg 5 mg 8 mg	ABBA mass comparison method with reference to OIML R111-1(E):2004. Reference weights of OIML classes E2 and F1, nominal values from 1 mg to 10 kg are available.

Signatories:

1. **Dr. Khairil Anas Md Rezali**
2. **Zamzuri bin Zabidin**

SCOPE OF CALIBRATION: MASS

Site Calibration: Category I

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty (±)*	Remarks
Electronic balances.	Up to 50 g Up to 100 g Up to 200g Up to 1 kg Up to 5 kg Up to 10 kg	0.2 mg 0.6 mg 0.8 mg 4 mg 20 mg 41 mg	Calibrated using standard weights with reference to Euramet cg 18, v4.0. Reference weights of OIML classes E2 and F1, nominal values from 1 mg to 10 kg are available.

Signatories:

1. **Dr. Khairil Anas Md Rezali**
2. **Zamzuri bin Zabidin**