

**STANDARDS**
MALAYSIA

Certificate of Accreditation

No: SMM 763

Accredited since: 25 March 2016

This is to certify that

INSTITUTE OF NANOSCIENCE AND
NANOTECHNOLOGY (ION2)
UNIVERSITI PUTRA MALAYSIA
SERDANG, SELANGOR
MALAYSIA



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for the current scope of
accreditation

has been granted accreditation in respect of the scope of accreditation described in the schedule, subject to the terms and conditions governing the *Skim Akreditasi Makmal Malaysia* (SMM), the Laboratory Accreditation Scheme of Malaysia.

Laboratories accredited under SMM meet the requirements of MS ISO/IEC 17025. This Malaysian Standard is identical with ISO/IEC 17025 published by the International Organization for Standardization (ISO).



(SHAHARUL SADRI BIN ALWI)
Director General
Department of Standards Malaysia

Date of issue: 27 October 2021

(Issue 2, 27 October 2021 replacement of SMM
763 dated 27 February 2019)



**STANDARDS
MALAYSIA**

Certificate of Accreditation

No: SMM 763

Accredited since: 25 March 2022

This is to certify that

INSTITUTE OF ADVANCED TECHNOLOGY (ITMA)
UNIVERSITI PUTRA MALAYSIA
SERDANG, SELANGOR
MALAYSIA



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(DATUK FADILAH BAHARIN)
Director General
Department of Standards Malaysia

Date of issue: 27 February 2019

NO: SAMM 763

(Issue 2, 19 January 2023 replacement of SAMM 763 dated 27 October 2021)

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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(S) OF TESTING:**CHEMICAL****FIELD(S) 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. Mohd Zobir Hussein | IKM No.: M/4579/7593/16 |
| 3. Prof. Dr. Zulkarnain Zainal | IKM No.: M/1630/3876/98 |
| 4. Prof. Dr. Janet Lim Hong Ngee | IKM No.: M/3519/6357/12 |
| 5. Sarinawani Abdul Ghani | IKM No.: M/5657/9147/21 |
| 6. Assoc. Prof. Dr. Khamirul Amin Matori | Morphology |
| 7. Dr. Ismayadi Ismail | Morphology |

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SCOPE OF CALIBRATION: MASS

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

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 (\pm)*	Remarks
Electronic balances.	Up to 50 g	0.2 mg	Calibrated using standard weights with reference to Euramet cg 18, v4.0.
	Up to 100 g	0.6 mg	
	Up to 200g	0.8 mg	
	Up to 1 kg	4 mg	Reference weights of OIML classes E2 and F1, nominal values from 1 mg to 10 kg are available.
	Up to 5 kg	20 mg	
	Up to 10 kg	41 mg	

Signatories:

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