



**STANDARDS**  
MALAYSIA

# Certificate of Accreditation

No: SAMM 731

Accredited since: 27 August 2015

This is to certify that

MAKMAL XRD  
FACULTY OF SCIENCE  
UNIVERSITI PUTRA MALAYSIA  
SERDANG, SELANGOR  
MALAYSIA



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[www.ism.gov.my/cab-directories](http://www.ism.gov.my/cab-directories)  
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* (SAMM), the Laboratory Accreditation Scheme of Malaysia.

Laboratories accredited under SAMM 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).



(DATUK FADILAH BAHARIN)  
Director General  
Department of Standards Malaysia

Date of issue: 7 September 2018

NO: SAMM 731

Page: 1 of 1

LABORATORY LOCATION:  
(PERMANENT LABORATORY)

**MAKMAL XRD  
FACULTY OF SCIENCE  
UNIVERSITI PUTRA MALAYSIA  
43400 UPM SERDANG  
SELANGOR  
MALAYSIA**

FIELD OF TESTING: MECHANICAL

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: MECHANICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
<b>Material</b> Powder/Solid <ul style="list-style-type: none"> <li>• Metal</li> <li>• Ceramic</li> <li>• Polymer (inorganic &amp; organic)</li> </ul>	Material Characterisation using XRD - Angle of diffraction peak (range: 20° – 80°)	In-house Method – UPM/FS/WI-T1 (Working Instruction-Test Method) using X-Ray Diffraction
<b>Thin/ Thick film</b>	Surface morphology imaging using AFM: qualitative (Scanning ranges in x & y axis 0.5µm-100 µm)	In House method - (UPM/FS/WI-E1)-Morphology testing of thick/thin film)

Signatories:

1. **Assoc. Prof. Dr. Mohd Mustafa Awang Kechik**
2. **Dr. Josephine Liew Ying Chyi**