Argonne NATIONAL LABORATORY

APPENDIX B - Statement of Work

Automatic Thin Film Mapping Tool

June 12, 2026

1.0 Background

The Center for Nanoscale Materials (CNM) at Argonne National Laboratory is seeking a thin film mapping tool that will enable the CNM to characterize materials in the nanoscale.

2.0 Objective

The mapping system must be flexible enough to process a wide variety of substrates from 5x5mm piece to a 200mm wafer. All types of materials; metals, semiconductors and insulators are expected to be measured. It should have a large materials library. The tool should support patterned (pattern recognition – die based) and un-patterned samples. Wavelength range from 190-1100nm with a small spot size (thickness range of 4nm-30microns). It should have an automated turret with several objectives. Aperture of 250 microns. The tool should also be equipped with a high pass filter for light sensitive samples.

3.0 Scope

The contractor is to provide a thin film mapping system as described in the requirements/technical specifications (attachment 1) and meets the acceptance criteria listed below. As part of this procurement, the vendor is asked to manufacture, test, deliver, and install the measurement tool at the Center for Nanoscale Materials (CNM) facility located at Argonne National Laboratory.

4.0 Acceptance Criteria

Deliverables must comply with the Acceptance Criteria Listing document, ANL-266, dated June 9, 2025, along with the following:

(a) Software
- (i) Demonstrate Pattern recognition of a 150mm Silicon wafer
- (ii) Demonstrate: User account management:
- (iii) Demonstrate recipe creation of single and multilayer recipes

(b) Thin Film Measurement
- (i) Measure Thermal 300 nm SiO_2:
- (ii) 100mm Silicon wafer: with mapping and single measurement
- (iii) 150mm Silicon wafer with mapping and single measurement

(c) General
    (i) Demonstrate Lamp replacement

5.0 Technical Specifications and Requirements

See document titled “Attachment 1 - Technical Requirements”.

6.0 Contractor On-Site Requirements

All site visitors representing the contractor must be US citizens with acceptable forms of identification (Real ID, Passport).

The Contractor shall abide by all ANL policies and procedures in the completion of work on site.

Drivers must adhere to “Illinois Rules of the Road” while driving on site.

The Contractor shall provide a completed and signed Job Safety Analysis (JSA) using ANL form ANL-209M.

Training Requirements (as necessary depending on task)

7.0 Place of Performance

Argonne National Laboratory, Lemont, IL 60439.