भारतीय प्रौद्योगिकी संस्थान इंदौर
खण्डवा रोड़, सिमरोल, इंदौर - 453 552, भारत
Indian Institute of Technology Indore
Khandwa Road, Simrol, Indore - 453 552, India
www.iiti.ac.in
IIT Indore

Ref. No.: IITI(MM)/CH(PRJ)/1/1A/104/PD/2025-26 **December 10, 2025**

PREBID REPORT

The online meeting for Pre-bid discussion was held at **IIT-Indore through online channel on 01/12/2025 at 11.0(AM onwards** for **Supply and Installation of Piezoresponse Force Microscopy (PFM).**

Please find below the queries received and their responses.

Sl. No.	Reference of the Clause/ Page No. of the Tender Document	Query raised	Query Raised by	Response from IITI
1.	**PART II** **Technical Specifications** **Sr. No. 2** **Instrument Architecture and Scanner Type** Flexure-based with decoupled XY scanner, where X & Y motions are independent and do not influence Z, eliminating bowing artefacts typical of piezo-tube scanners. X, Y and Z movements must be mechanically separated, each axis equipped with integrated position sensors for seamless closed-loop operation. XY and Z scanners must support both open-loop and closed-loop feedback. System must include automatic laser alignment, automatic photodetector alignment and automatic probe exchange using an 8-probe cassette with magnetically controlled hands-free probe exchange.	We kindly request the deletion of the highlighted specification (quoted below), as it is currently available with only one AFM vendor: "automatic probe exchange using an 8-probe cassette with magnetically controlled hands- free probe exchange" No other vendor offers this automatic probe exchange option. Retaining it would effectively restrict participation to a single vendor, thereby limiting competition. To ensure fair opportunity for all vendors to participate in this tender, we request that this specification be removed.	**M/s. Toshniwal Brothers (SR) Pvt Ltd**	**"Specification Retained"** The technical specifications have been formulated after detailed consultations with a broad group of end-users across multiple departments. Our central facility currently operates two conventional AFM-PFM systems without automated probe handling or automated optical alignment. However, our userbase has expanded significantly, and new research requirements now necessitate an upgraded AFM architecture with **fully automated, motorized AFM platform for advanced, correlative nanoscale and functional property characterization.** The requirement for an automated probe exchange mechanism, along with automated laser and photodetector alignment, directly arises from the need to: (a) Minimize operator-induced variability and reduce tip/sample damage through hands-free probe handling. (b) Increase repeatability and precision during sequential multimodal measurements: topography, electrical, magnetic, mechanical and piezoresponse on the same nanoscale region.

2.	**PART II** **Technical Specifications** **Sr. No. 11** **Sample Vision and Camera** AFM must provide on-axis top view of both sample and cantilever. Optical system must use a 10× objective or better, with optical resolution of minimum 1 µm (diffraction limit) 5 Megapixel camera with objective lens must be provided for sample/cantilever observation, Field-of-view should be ≥ 840 × 630 µm or more. An additional camera to view the robotic/automatic probe exchange system to be included.	We kindly request the deletion of the highlighted specification (quoted below), as it is again related to the automatic probe exchange and available with only one AFM vendor: An additional camera to view the robotic/automatic probe exchange system to be included.	**M/s. Toshniwal Brothers (SR) Pvt Ltd**	(c) Enable high-throughput usage to accommodate a large number of users in a central facility where time efficiency and fast turnaround are essential. (d) Reduce drift and repositioning errors, which is critical for correlative nanoscale property mapping and advanced functional imaging. For several research projects at IIT Indore, it is essential to probe nanoscale properties-topography, conductive mapping, magnetic contrast, nanomechanical response and piezoresponse-sequentially at the same location. This makes automation in probe handling, stage motion and camera-based navigation critical to reduce user-induced errors, drift and tip or sample damage. The specifications have been drafted solely on the basis of these technical and operational requirements, with no intention to favour or exclude any OEM. At least two original global equipment manufacturers currently offer architectures that meet these criteria. Given the technical demands of the user community and the need for future-ready, operator-independent AFM operation in a shared facility environment, the specification for automated probe exchange and related automation features is therefore justified and will be retained.

All prospective/willing bidders are requested to take note of this report as part of the Tender document. All other terms and conditions of the tender remain unchanged.

10/12/25

Assistant Registrar (MMS)

सहायक कुलसचिव
(सामग्री प्रबंधन विभाग)
Assistant Registrar
(Materials Management Section)