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| https://lh7-rt.googleusercontent.com/docsz/AD_4nXdkpG9kyj65TnonKdaartw5u37y_uGqK1D4WQ44OAIdWCoqko7JUSbVarkjB-rPNO3_b1nLVQFRztLPO2VGS9v6zES3qY0g8kVD1Em8fE-mHJRiQzjsYld1-dPVQJtQna-9VKrbHH4zGZrSU_hS4mY?key=-5YTTQWrOVSvxFErm9L0jMKG  **NANO INDENTER** | **Name of the equipment:**  NANO INDENTER  **Make & Model:**  HysitronTI Premier  **I-Stem Registration ID-**  **3229300**    **Category of Instrument**  Manufacturing technology  **Types of Analysis / Testing**  Testing of material properties  **Application:**  Nano Indentation, Nano Scratch, Measure reduced young’s modulus and hardness, etc.  **Description of Instrument**  This system performs indentation, scratch and wear studies capable of studying mechanical properties of thin films, soft samples, metals, etc. |

**Booking Details**

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| **Book through I-STEM:**  <https://www.istem.gov.in/>  **Slot Booking Link**  [I-STEM Slot Booking link for External User](https://www.istem.gov.in/equipment-info/29300/Nanoindenter) | **Booking available for**  Internal and External Both  **Requisition form for**  Internals  Externals |

**Contact Details**

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**Features, Working Principle and Specifications**

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| **Features of the equipment**   * Observation of post-test deformation behavior, Custom-engineered enclosure with an integrated anti-vibration system to provide nanoscale characterization capabilities in non-ideal environments * Intelligently designed software with enhanced automated testing routines and an intuitive user interface * Easily adaptable system to meet specific research needs, from soft polymers to ceramic thin films. Etc | **Unique features/Measurement capabilities, if any**   * High-resolution in-situ SPM imaging that enables precise test positioning accuracy (±10 nm) * Sensitive force and displacement noise floors (75 nN, 0.2 nm) for unprecedented accuracy |
| **Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)**   * Maximum force up to 10mN * Minimum Contact Force <100nN * Stage Travel 50mm x 150mm * Z-travel -50mm | **Measurement/Sample specifications:**   * Maximum size usually limited 10mm x 10mmx10mm * Surface roughness must be less than 500 nm. Porous material cannot be tested |

**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions**

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| * Quantity: Maximum size usually limited 10mm x 10mmx10mm * Sample Type: Metallic/composite/alloys/biological sample etc., * Pre-preparation: Surface roughness must be less than 500 nm. Porous material cannot be tested. * Maximum No. of Samples Accepted at a Time- 2 * Minimum No of Days Required for Analysis – 1 |

**User Charges Rs. (GST Extra)**

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 2000/- per slot | 4000 + 18%GST  Per slot | 4000 + 18%GST  Per slot | 5000 + 18%GST Per slot |

\* 1 slot= 20 indentations or 3 hr