**DYNAMIC SHEAR RHEOMETERS (DSR)**

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|  | **Name of the equipment:**  Dynamic Shear Rheometers (DSR)  **Make & Model:**  ANTON PAAR - MCR-102  **I-Stem Registration ID-**  **……………………..**  **Category of Instrument**  Characterization and Testing  **Types of Analysis / Testing**  It can perform Complex Shear Modulus, Viscosity determination, Superpave performance grading, and Multiple stress creep recovery (MSCR).  **Application:**   * Quality control and routine measurements in asphalt test labs * Research and development of asphalt and bitumen products * Standard asphalt tests according to international standards (AASHTO, ASTM, DIN EN, etc.)   **Description of Instrument**  The SmartPave 102 is a dynamic shear rheometer (DSR) that is designed to analyze unmodified and modified asphalt binder and bitumen in a wide temperature range. |

**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/) | **Booking available for**  Internal and External Both  **Requisition form for**  [Internals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf)  [Externals](https://randc.nitc.ac.in/pdf/instruments/civil/CED-REQUISITION_FORM_Internal.pdf) |

**Contact Details**

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**Features, Working Principle and Specifications**

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| **Features of the equipment**   * High-precision Peltier temperature control * EC motor for sensitive and precise movements * QuickConnect system for easy and fast system changes * TruRay lighting concept for a clear view of the sample and measurement surface | **Unique features/Measurement capabilities, if any**   * Temperature range of -50 °C to +220 °C * Unrivalled accuracy and convenience * Automatic and fast temperature calibration and verification routine. |
| **Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)**   1. Temperature range: -50 °C to +220 °C 2. Meets international standards 3. *Complex Shear Modulus |G| [Pa]*\* 4. Viscosity determination of asphalt binder 5. Upgradeable to all standard rheological tests | **Measurement/Sample specifications:**   * Asphalt binder * Bitumen * Modified asphalt binder |

The SmartPave 102e requires 10-20g of dry and solid asphalt binder, bitumen, modified asphalt binder, or ground tire rubber (GTR) modified asphalt binders for analysis/testing.

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

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
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**User Charges Rs. (GST Extra)**