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| **ELECTROCHEMICAL CORROSION ANALYZER** | **Name of the equipment:**  Electrochemical Corrosion Analyzer  **Make & Model:**  CH Instruments Inc., USA  CHI608E Potentiostat/Galvanostat  **I-Stem Registration ID-**  **3224881**  **Category of Instrument**  Electrochemical Instrument  **Types of Analysis / Testing**  Corrosion Testing  **Application:**  Studying the corrosion resistance of various metals and alloys.  **Description of Instrument**  A Corrosion testing equipment. |

**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/24881/Potentiostat-Electrochemical-Corrosion-Analyzer-with-Work-Station) | **Booking available for**  Internal and External Both  **Requisition form for**  Internal  External |

**Contact Details**

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**Features, Working Principle and Specifications**

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| **Potentiostat**   * Zero resistance ammeter * 2- or 3- or 4-electrode configuration * Floating (isolated from earth) or earth ground * Maximum potential: ±10 V * Maximum current: ±250 mA continuous, ±350 mA peak * Compliance Voltage: ±13 V * Potentiostat rise time: < 1 μs, 0.8 μs typical * Applied potential ranges (volts): ±0.01, ±0.05, ±0.1, ±0.65, ±3.276, ±6.553, ±10 * Applied potential resolution: 0.0015% of potential range * Applied potential accuracy: ±1 mV, ±0.01% of scale * Applied potential noise: < 10 μV rms * Measured current range: ±10 pA to ±0.25 A in 12 ranges * Measured current resolution: 0.0015% of current range, minimum 0.3 fA * Current measurement accuracy: 0.2% if current range >=1e-6 A/V, 1% otherwise * Input bias current: < 20 pA   **Galvanostat**   * Galvanostat applied current range: 3 nA - 250 mA * Applied current accuracy: 20 pA ±0.2% if > 3e-7A, ±1% otherwise * Applied current resolution: 0.03% of applied current range * Measured potential range (volts): ±0.025, ±0.1, ±0.25, ±1, ±2.5, ±10 * Measured potential resolution: 0.0015% of measured range | **Galvanostat**  **Electrometer**   * Reference electrode input impedance: 1x1012 ohm * Reference electrode input bandwidth: 10 MHz * Reference electrode input bias current: <= 10 pA @25°C   **Waveform Generation and Data Acquisition**   * Fast waveform update: 10 MHz @ 16-bit * Fast data acquisition: dual channel 16-bit ADC, 1,000,000 samples/sec simultaneously * External signal recording channel at maximum 1 MHz sampling rate   **Experimental Parameters**   * CV and LSV scan rate: 0.000001 to 10,000 V/s * Potential increment during scan: 0.1 mV @ 1,000 V/s * CA and CC pulse width: 0.0001 to 1000 sec * CA and CC minimum sample interval: 1 μs * True integrator for CC * DPV and NPV pulse width: 0.001 to 10 sec * SWV frequency: 1 Hz to 100 kHz * i-t sample interval: minimum 1 μs * ACV frequency: 0.1 Hz to 10 kHz * SHACV frequency: 0.1 Hz to 5 kHz * FTACV frequency: 0.1 Hz to 50 Hz, simultaneously acquire 1st, 2nd, 3rd, 4th, 5th, and 6th harmonics ACV data * IMP frequency: 0.00001 Hz to 1 MHz * IMP amplitude: 0.00001 V to 0.7 V rms |
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**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions**

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| * Sample Type: Metals, Alloys and Conductive materials * Pre-preparation: The sample should be clean & polished. * Dimensions for the sample: Should be a flat surface that must cover a circular hole with diameter 10 mm and thickness must not exceed 10 mm and should have a minimum thickness of 1 mm. * Type of Samples to be Analysed - Metallic * Maximum No. of Samples Accepted at a Time- 1 * Minimum No of Days Required for Analysis – 2 Days |

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

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 200/- per hour | 500/- per hour + GST | 500/- per hour + GST | 500/- per hour + GST |