**Total Organic Carbon Analyser**

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| A machine on a blue carpet  AI-generated content may be incorrect. | **Name of the equipment:**  Total Organic Carbon Analyser  **Make & Model:**  Shimadzu H544354 TOC Analyzer  **I-Stem Registration ID-**  **……………………..**  **Category of Instrument**  Testing and Characterisation  **Types of Analysis / Testing**   * Total Organic Carbon (TOC) Measurement * Total Carbon (TC) Measurement * Total Nitrogen (TN) Measurement * Non-Purgeable Organic Carbon (NPOC) Analysis   **Application:**   * Pharmaceutical analysis * Environmental testing (viz. VOC analysis) * Forensics & toxicology * Food & flavor analysis * Petrochemical & industrial chemistry   **Description of Instrument**  TC, IC, NPOC and TN measurement  Measurement range from 4 μg/L to 30,000 mg/L  680 °C Combustion, Catalytic Oxidation/ NDIR  Detection Method for TOC at 720 °C |

**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) |

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| **Faculty In-charge:**  Dr. Anantha Singh T S Dr. Bhaskar S  **Email ID:**  [singh87@nitc.ac.in](mailto:singh87@nitc.ac.in) [bhaskars@nitc.ac.in](mailto:bhaskars@nitc.ac.in)  **Phone number:**  Anantha Singh: +91-8758790511 Bhaskar S: +91-9742720843 | **Contact Details**  **Technical Staff:**  Fashid V C (TA) [fashidvc@nitc.ac.in](mailto:fashidvc@nitc.ac.in)  Amardeep KV (Technician)  [amardipkumarv@nitc.ac.in](mailto:amardipkumarv@nitc.ac.in) | **Department**  CED  **Office Email ID**  [cedoffice@nitc.ac.in](mailto:cced@nitc.ac.in)  **Location**  Environmental Engineering Laboratory, Department of Civil Engineering  **Lab Phone No**  0495 228 6247 |

**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.)**

**Features, Working Principle and Specifications**

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| **Features of the equipment**   * High-temperature catalytic oxidation (HTCO) method * Automatic sample dilution and acidification * Low maintenance with self-cleaning function * User-friendly software for data analysis | **Unique features/Measurement capabilities, if any**   * Detection range: 0.001 mg/L – 30,000 mg/L * Simultaneous TOC & TN (Total Nitrogen) measurement |
| **Instrument Technical Description and Major Specifications** *(This Specifications Limited to Major 5)*   * Measurement Principle: High-temperature combustion (680°C) * Detection Method: NDIR (Non-Dispersive Infrared) sensor * Sample Volume: 0.1 – 2 mL (auto-injection) * Analysis Time: 4-6 minutes per sample * Calibration: Automatic multi-point calibration | **Measurement/Sample specifications:**   * Sample State: Liquid (aqueous solutions) * Particle Size: Must be < 0.45 µm (filtered if necessary) * pH Range: 2-11 (acidification may be required for NPOC) * Maximum Salinity: 5% (w/v) (higher levels may require dilution) |

* Quantity: 10-20 mL (volume depends on expected TOC/TN levels)
* Pre-Preparation:
  + Must be filtered (0.45 µm) to remove suspended solids.
  + Avoid samples with high volatility (use TC mode if necessary).
* Type of Samples Accepted:
  + Drinking water, wastewater, industrial effluents, research samples.

**Guidelines for Sample Submission – User Instructions**

* Label samples clearly with expected TOC/TN range.
* Indicate if TN measurement is required (if TN unit is installed).
* Maximum No. of Samples Accepted at a Time: 50 (autosampler capacity).
* Turnaround Time: 1-2 days (varies with sample load).
* Samples exceeding 5% salinity must be pre-diluted.
* No bacterial/fungal samples (instrument is for chemical analysis only).

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

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| **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| 1500 per sample | 3000 per sample | 3000 per sample | 6000 per sample |