**Central Institute of Plastics Engineering & Technology (CIPET)**

**Details of Training Programme**

**Name of the Training Programme : E-waste Management &**

**Recycling**

**Batch size : 10 to 20 Participants**

**Duration of the programme : 02 weeks**

**Course content:**

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| **S.No.** | **Content** |
| **1** | **Introduction of Electronic waste (E-waste):**  Introduction to E-waste, Constituents of E-waste, Classification of E-waste, Environmental effect of E-waste – consumption, Effect & Control Measures, Global Strategy for environmentally sound management of e-waste-Strategies Adopted in develop & developing countries, Domestic E-waste storage, collection, transfer system, processing and disposal, Basel convention. |
| **2** | **Source of E-waste Generationand its impact:**  Availability and Socio-Economic Characteristics, Hazardous substances present in E-waste, Characteristics of Hazardous substances in E-waste, Environmental Impact of first, second and third generation E-waste. |
| **3** | **Legislation for Management of E-waste:**  E-waste Management and handling rules, Major sections of hazardous waste (Management, Handling and Transboundary Movement) Rules, Hazardous waste (Management and handling) rules 2016 & 2018 with amendments,The Directive on waste electrical and electronic equipment (WEEE Directive) and the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive), [EU Regulation 2019/290](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.048.01.0006.01.ENG&toc=OJ:L:2019:048:TOC%20)). National and Social Policies/ Laws/ Regulations/ Institutional Roles in developed& developing Countries. |
| **4** | **Recycling of E-waste :**  Sustainable waste management practices, 4R principle for e-waste management. Physico-mechanical methods of treating E-waste. Thermo-chemical methods (Pyrolysis, gasification and incineration) of treating E-waste.  E-waste processing and disposal, Technologies for recovery of resources from E-waste. |
| **5** | **Recycling of plastics from E-waste:**  Plastics in E-waste, Life cycle analysis of E-waste plastics, Identification and segregation of plastics, E-waste re-processing techniques such as collection, sorting, grinding, density separation technique, washing and drying process, micro-pulverizing, stripping, electrostatic separator, hammering, cyclone separator for grinded plastic waste, Value addition of plastics and metal waste. Case studies on recycling approach of E-waste in different countries. |
| **6** | **Advanced characterization study for plastics from E-waste:**  Advance characterization technique such as Thermal (DSC, TGA, DMA analysis), Morphological (SEM, AFM analysis), Mechanical test (Tensile, impact test etc.). |
| **7** | **Study tour to Certified E-waste recycler.** |