

ABSTRACT OF THE DISCLOSURE

A method and apparatus for use in the recycling of post consumer or post industrial waste carpet or Polyamide-6 and/or Polyamide-66 containing non-carpet waste utilizes a hand-held portable device utilizing spectroscopic principles to accurately and quickly identify the material of the waste (carpet). The spectrometer envisioned for this task includes an infrared radiation source for illuminating the waste (carpet) sample, a selector for selecting a predetermined number of discrete wavelengths and a detection system to detect reflected radiation within the discrete wavelengths. The selector can be either a plate with a plurality of slots which positionally correspond to locations in a dispersed light beam according to the predetermined discrete wavelengths or a plurality of filters selected to pass the discrete wavelengths. The selection of the discrete wavelengths can either take place before the carpet sample is irradiated or can take place by selecting the discrete wavelengths from reflected radiation.