

A METHOD FOR REFINERY FOULANT DEPOSIT CHARACTERIZATION

Abstract

The present invention is a method to identify a refinery solid foulant of unknown composition including the following steps: obtaining a solid foulant sample, removing trapped feed from the sample with a solvent to obtain an insoluble sample, scanning the insoluble sample with a scanning electron microscope and energy dispersive x-rays, performing a thermal gravimetric analysis including an ash test on the insoluble sample to determine the presence of polymer, coke and inorganic elements, performing an elemental analysis on the insoluble sample for the elements carbon, hydrogen, sulfur, nitrogen, halogens, and metals, performing an optical microscopy on the insoluble sample to determine the presence of wax, asphaltenes, anisotropic coke and isotropic coke, and identifying the solid foulant.

Figure 1