Title: Fluorescence technique for the characterization of natural organic matter in river water

Abstract

The complex nature of natural organic matter (NOM), and the impact of this matter on drinking water quality have necessitated the characterization studies of NOM. A fluorescence technique for the characterization of NOM in Malaysian river water is reported. Water samples from several river sampling sites were collected and concentrated using a low-pressure reverse osmosis (LPROM). Solid phase extraction (SPE) using C18 extraction cartridges were used to fractionate the water samples into humic and non-humic fractions. To differentiate and classify various types of humic substances, fluorescence was applied in emission, excitation and in synchronous-scan modes. A synchronous spectral profile was found to be able to differentiate humic and fulvic acids better than the emission or excitation spectra. Synchronous excitation spectra showed different spectral patterns for the water samples due to different origin. All water samples showed that presence of both fulvic and humic acids