

ANALYSIS AND CHARACTERIZATION OF POLYCYCLIC
AROMATIC HYDROCARBONS (PAHs) EMITTED FROM
SUNGAI TONG PALM OIL MILL

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ANALYSIS AND CHARACTERIZATION OF POLYCYCLIC
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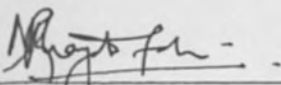
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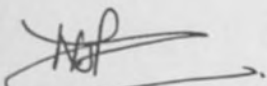
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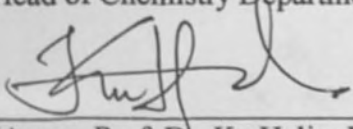
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TO THE LATE

ASSOC. PROF. MR. KARIM BIN DTO' YAACOB

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Abstract

This study was conducted to analyse and characterize polycyclic aromatic hydrocarbons (PAHs) emitted from Sungai Tong palm oil mill. Three different types of sample were collected from the factory, namely particulates, ash and soils. The samples that have been pretreated were soxhlet extracted using hexane-DCM as solvent. Extracts were then concentrated and separated into different classes with liquid solid chromatography technique. Aromatic fraction was pre-analyzed using Ultraviolet Fluorescence spectrophotometer (Hitachi F-2000) based on Tapis crude oil and chrysene standard. Total PAH concentration in the samples falls in the range of 14.08ppm to 434.78ppm (dry weight, chrysene equivalent). Quantification and identification of individual PAH component were performed on Shimadzu GC 17A chromatography by comparing their retention times with those known standards. The present of some PAH compounds have been identified in the samples.

Abstrak

Kajian ini melibatkan analisis dan penentuan kandungan hidrokarbon polisiklik aromatik (PAHs) dalam sampel partikulat, abu dan tanah di sekeliling kilang kelapa sawit Sungai Tong. Sampel diekstrak keluar melalui proses pengekstrakan soxhlet dan kemudian PAH dipisahkan daripada ekstrak dengan kaedah kromatografi turus. PAH dianalisis dengan ultraviolet pendafluoran spectrometer (Hitachi F-2000) dengan merujuk kepada piawai minyak Tapis dan krisena. Kandungan PAH yang diperolehi dari kajian berada dalam lingkungan 14.80ppm hingga 434.78ppm berdasarkan piawaian krisena. Komponen PAH dalam sampel ditentukan dengan kaedah kromatografi gas (Shidmadzu GC 17A) dengan cara membanding masa retensi sampel dengan piawai. Beberapa komponen PAH telah ditentu dan disyaki hadir dalam sampel yang dianalisis.

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