

# A Green Chemistry Extraction for Determination of PAHs from Lampung Bay Coastal of Indonesia

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A green chemistry extraction technique for determination of PAHs by solid phase microextraction (SPME) coupled with gas chromatography-mass spectrometry has been developed. This technique is solvent-less, simple, and requires only small amount of samples. The exposure and temperature extraction as critical influence of various parameters of SPME on PAHs extraction was optimized. The reproducibility of the method expressed relative standard deviation (RSD) of individual PAHs were from 3.2 % to 22% and the average recoveries for PAHs were found 81-101 %. The method showed good linearity up to 200 µg/l with regression coefficient around 99%. The optimum condition has been applied for determination of PAHs in seawater from Lampung Bay of Indonesia. The levels of total PAHs in Lampung Bay coastal seawater are between from 2.28 to 125.6 µg/l. The low molecular and high molecular PAH were observed at sampling locations indicating pyrogenic and petrogenic input for this area. It is urgently need to control PAHs pollution especially in port area.

**Keywords** polycyclic aromatic hydrocarbon; solid phase microextraction; green extraction