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THE 2nd ASIAN INTERNATIONAL CONFERENCE ON ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY

September 26-29, 2004

BP Samila Beach Hotel, Songkla, Thailand

THE 2nd ASIAN INTERNATIONAL CONFERENCE ON ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY

Postgraduate Education and Research Program in Chemistry

Prince of Songkla University

Faculty of Science, Kasetsart University

Department of Health, Ministry of Public Health

Environmental Science, Technology and Management Program

Abstracts

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COMPARATIVE EVALUATION OF THE MICROWAVE-ASSISTED EXTRACTION IN CLOSED SYSTEM AND SONICATION FOR THE EXTRACTION OF POLYCYCLIC AROMATIC HYDROCARBONS FROM SEDIMENTS

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Abstract

The extraction methods for the determinations of polycyclic aromatic hydrocarbons from spiked sediment containing benzo[*k*]fluoranthene, chrysene, acenaphthene, anthracene, carbazole and indeno[1,2,3-*c,d*]pyrene, using pressurised microwave-assisted and sonication extraction were optimised. Each PAH in the spiked sediment was quantified by using the spectrofluorometric method. The optimised methods were compared on the extraction efficiency of 14 PAHs in a certified sediment reference material, LGC6188. Recoveries of 14 PAHs were performed by HPLC-DAD at 254 nm using the standard addition method. The results showed that the most extraction efficiency method was microwave-assisted extraction with cyclohexane:acetone (3:2) for 15 min at 140% boiling point of acetone. Under this condition for the extracted certified sediment reference material recovery was 96.55%.

Keywords: microwave-assisted extraction, sonication extraction, polycyclic aromatic hydrocarbons

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