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WICHAI ANURAKRUENON : DETERMINATION OF ELEMENTS IN SUSPENDED AIR PARTICULATES BY NEUTRON ACTIVATION TECHNIQUE. THESIS ADVISOR : ASSO. PROF. TATCHAI SUMITRA, Dr.Ing. ; NARES CHANKOW, M.Eng. ; 82 PP.
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In this research, some major amd trace elements in suspended air particulates were determined by using the neutron activation analysis (NAA) technique. Thirteen samples were collected in front of the Scientific and Technological Research Equipment Center (STREC) of Chulalongkorn University about 100 m from Payathai Road in Bangkok. Fifteen more samples were collected from the Mae Moh Hospital and from the Public Health Office of Soppad District which are located about 1 km from the Mae Moh Coal-Fired Power Station in Lampong Province.

The samples and the SL - 1 Stardard Reference Material were irradiated with thermal neutrons from the TRIGA Mark III research reactor at the Office of atomic Energy for Peace prior to the gamma-ray measurement. For comparison, some elements were also analyzed by the x-ray fluorescence (XRF) technique, the atomic absorption spectroscopy (AA) and the Inductively Coupled plasma atomic emission spectroscopy (ICPS). The results obtained from NAA were comparable to those obtained from the XRF, AA and ICPS. Common elements in soil i.e. Fe, Si, Al, Na, K, Sc, Mn and Sb were found in all samples. It was found that V and As in the samples collected in Bangkok were in the range of 50 to 630 μg/g while the samples collected in Lampang Province contained < 6 μg/g of V and As.