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KEY WORD : DUST CONCENTRATION/ INDOOR AND OUTDOOR SCHOOL BUILDINGS/ ROCK AGGREGATION INDUSTRIAL ZONE

PATCHAREE CHUTIMASKUL: A STUDY OF DUST CONCENTRATION ON PARTICULATE MATTER BETWEEN INDOOR AND OUTDOOR SCHOOL BUILDINGS IN THE ROCK AGGREGATION INDUSTRIAL ZONE: SARABURI PROVINCE. THESIS ADVISOR: SAYAM ARUNSRIMORAKOT,M.Sc., SUCHART NAVAGAWONG,M.Sc., WITOON DOUNGKEO,M.Sc. 93 p. ISBN 974-664-439-4

This research studies the atmospheric concentration of Total Suspended Particulate (TSP) and Particulate Matter less than 10 micron (PM_{10}) within 24 hours. The work points out a comparison between indoor and outdoor school buildings allocated in the rock aggregation industrial zone. The Na Phra Lan School and the Ban Khung Khao Khieo School are the locations where dust data were collected. Both schools are located in Tambol Na Phra Lan, Amphor Chalermprakot, Saraburi Province. The research also gives reports surveying students' opinions on dust within net-frame window rooms.

The method for collecting the data contains the measurement of TSP and PM_{10} for indoor and outdoor school buildings. Furthermore, questionnaires were used for gathering the data, which were analysed by employing statistics, percent, mean, and T-Test in order to give concise dust concentrations between the indoor and outdoor school buildings.

The outcome of this research shows that the average TSP and PM_{10} over a 24 hours period at the Na Phra Lan School are 237.47 microgram per cubic meter($\mu g/m^3$) and $128.71 \mu g/m^3$ for outdoor buildings, and $145.91 \mu g/m^3$ and $84.33 \mu g/m^3$ for indoor buildings, respectively. The 24 hours average TSP and PM_{10} at the Ban Khung Khao Khieo School are $489.83 \mu g/m^3$ and $257.01 \mu g/m^3$ for outdoor buildings, and $441.01 \mu g/m^3$ and $248.88 \mu g/m^3$ for indoor buildings, respectively. The standard given by the National Environment Committee issued-10 in 1995 for an average 24 hours TSP is not greater than $330 \mu g/m^3$ and an average 24 hours PM_{10} is not greater than $120 \mu g/m^3$. The result of TSP concentration comparison of both indoor and outdoor buildings at the Na Phra Lan School gives different statistical significance at 0.05 level. However, there is no different statistical significance at 0.05 level at the Ban Khung Khao Khieo School. Furthermore, the comparison of concentration of PM_{10} for indoor and outdoor buildings at both schools addresses is no different statistical significance at 0.05 level. The work also shows that total dust is reduced at 94.97 percent by using the net-frame windows. Students believe that by using net-frame windows can decrease the distribution of dust flowing into the buildings.