"**Minimizing Air Pollution by Natural Ventilation for Underground Parking Garage**", Proceeding of the 9th Asian Symposium on Visualization Hong Kong, by Chaisansuk S., Boonyakiat J., Tantasavasdi C., Sreshthaputra A., 4th -9th June, 2007.

Abstract

This research is a study of airflow patterns in a parking garage to establish design guidelines for improving natural ventilation using Computational Fluid Dynamics (CFD) simulation through a case study. The most important indicator is concentration of carbon monoxide (CO) in the space. Factors concerned are ambient concentration, engine exhaust emission rates, standards, wind velocity and direction, and building's physical characteristics. The results show that designing for good IAQ needs to consider both air exchange rate and the pattern of air movement. This can be achieved by placing openings at proper locations, arranging of interior/retail spaces, and ramps.

Keyword: *Carbon monoxide (CO), underground parking garage, natural ventilation, concentration, emission rate.*