

## CHARACTERIZATION OF INDOOR/OUTDOOR GASEOUS AND PARTICULATE MATTER PHYSICO-CHEMICAL CHARACTERISTICS IN TWO RESIDENTIAL HOUSES IN OSLO, NORWAY

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### EXTENDED ABSTRACT

Indoor-outdoor measurements have been performed in the Oslo metropolitan area during summer and winter periods at two different residential houses. The objective of the measurement study was to characterize chemically the particulate matter associated with actual human exposure in the selected places. Apart from the integrated indoor-outdoor particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, size distribution) and gaseous pollutants (O<sub>3</sub>, NO<sub>x</sub>, VOC) measurements, infiltration rate evaluation (SF<sub>6</sub>) and meteorological measurements were also performed along with a detailed chemical speciation and compilation of a daily diary where different indoor activities were registered. Continuous measurements for PM<sub>10</sub> and PM<sub>2.5</sub> using TEOM instruments was performed together with the use of particle number distribution measurements using the Scanning Mobility Particle Sizer (SMPS) model 3934C (particle size range 10 to 450 nm), and Aerodynamic Particle Sizer (APS) model 3320 (particle size range 0.7 to 20 μm). The indoor-outdoor measurements indicate the importance of specific indoor sources in the concentration of air pollutants inside houses. Particle concentration characteristics indoors is correlated with outdoor concentration characteristics in the absence of important indoor sources. Certain correlations between meteorological parameters and indoor concentration of gaseous and aerosol species is observed. The experimental data give a comprehensive picture of the aerosol and gaseous species concentrations in residential places in Oslo.

**Key words:** Indoor air quality, size distribution