

Correlation between Indoor and Outdoor Air

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Abstract : Both indoor and outdoor air quality is investigated throughout residential areas of Al Hofuf city/ Eastern province of Saudi Arabia through a multi-week multiple sites measurement and sampling survey. Concentration levels of five criteria air pollutants, including carbon dioxide (CO₂), carbon monoxide (CO), nitrous dioxide (NO₂), sulfur dioxide (SO₂) and total volatile organic compounds (TVOC) were measured and analyzed during the study period from January to May 2014. For this survey paper, three different sites, roadside RS, urban UR, and rural RU were selected. Within each site type, six locations were assigned to carryout air quality measurements and to study varying indoor/outdoor air quality for each pollutant. Results indicate that a strong correlation between indoor and outdoor air exists. The I/O ratios for the considered criteria pollutants show that the strongest relationship between indoor and outdoor air is found by analyzing of carbon dioxide, CO₂ (0.88), while the lowest is found by both NO₂ and SO₂ (0.7).

Keywords : criteria air pollutants, indoor/outdoor air pollution, indoor/outdoor ratio, Saudi Arabia

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