

서울市 터널內 空氣汚染度 調査研究(第八報)

環境調査科

李東植·金益洙·金顯國·申載英

Studies on Airpollution of Traffic Tunnel in Seoul Area

Division of Environment Research

Dong Sig Lee, Ik Soo Kim, Hyun Kook Kim and Jai Young Shin

= Abstract =

This study was performed to investigate airpollutants(SO₂, NO₂, CO, CO₂, TSP, Pb)in tunnels for traffic in Seoul area from Sept. 12, 1994 to Oct. 15, 1994.

The results were as follows;

1. The highest concentration of SO₂ of all tunnels was 0.097 ± 0.005 ppm in Nam San No.2 tunnel, and the lowest was 0.02 ± 0.002 ppm in Kwang Pyung tunnel.
2. The highest concentration of NO₂ of all tunnels was 0.297 ± 0.0057 ppm in Nam San No.1 tunnel, and the lowest was 0.042 ± 0.003 ppm in Kwang Pyung tunnel.
3. The highest concentration of CO of all tunnels was 27.3 ± 1.2 ppm in Nam San No.2 tunnel, and the lowest was 2.1 ± 0.1 ppm in Kwang Pyung tunnel.
4. The highest concentration of CO₂ of all tunnels was 1410 ± 21 ppm in Nam San No.1 tunnel, and the lowest was 847 ± 8 ppm in Kwang Pyung tunnel.
5. The highest concentration of TSP of all tunnels was $1350 \pm 49 \mu\text{g}/\text{m}^3 \cdot \text{day}$ in Nam San No.2 tunnel, and the lowest was $743 \pm 12 \mu\text{g}/\text{m}^3 \cdot \text{day}$ in Kwang Pyung tunnel.
6. The highest concentration of Pb of all tunnels was $0.76 \pm 0.07 \mu\text{g}/\text{m}^3 \cdot 8\text{hr}$ in Nam San No. 1 tunnel, and the lowest was $0.36 \pm 0.004 \mu\text{g}/\text{m}^3 \cdot 8\text{hr}$ in Kwang Pyung tunnel.
7. According to the result of research of analysis of variance in all tunnels, there was high significance between each item, SO₂(F=83.47, P<0.01), NO₂(F=177.51 P<0.01), CO(F=160.98, P<0.01), CO₂(F=271.93, P<0.01), TSP(F=269.17, P<0.01), Pb(F=44.86, P<0.01).
8. According to the result of research of correlation coefficient between items in all tunnels, SO₂, between NO, CO and CO₂, NO₂ between CO, CO₂, TSP and Pb, CO between CO₂, TSP and Pb, CO₂ between TSP and Pb, TSP and Pb showed high significance respectively.
9. According to the result of multiregression analysis in all tunnels, there were high significance between SO₂ and CO, NO₂ and CO₂, CO₂ and NO₂, CO₂ and TSP, TSP and CO₂, and partial coefficient value of these were the highest respectively.



