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## Passive Sampling of Ambient Nitrogen Dioxide Using Local Tubes

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### ABSTRACT

Traditional active and automated sampling of nitrogen dioxide (NO<sub>2</sub>) monitoring techniques require expensive instrumentation which is not easily adapted for large scale monitoring by resource limited countries. This paper presents the use of locally available relatively cheaper polyethylene tubes to be developed as passive diffusive sampler and use for monitoring of ambient nitrogen dioxide using Triethanolamine (TEA) as absorbent. After extraction with double distilled water, modified Griese-Saltzman method is used for analysis of nitrite adduct formed due to reaction of NO<sub>2</sub> with TEA using spectrophotometer. The results are compared with Ferm-Badge type passive samplers from IVL- Sweden and high volume sampling methods. The detection limits of the passive sampling methods were found to be suitable to be use in tested environment and precision of the method as expressed as Coefficient of variation are good enough for monitoring of NO<sub>2</sub> in ambient air of Kathmandu. The method shows strong correlation with high volume sampler and no significant difference with Ferm-Badge—IVL samplers at p = 0.05.

### KEYWORDS

Nitrogen Dioxide; Passive Sampler; Diffusive Sampling

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