Contribution ID: **7** Type: **Poster Presentation**

SOURCE IDENTIFICATION AND METAL ANALYSIS OF FINE PARTICULATE MATTER (PM2.5) IN AN INDUSTRIALIZED URBAN AREA OF LAGOS STATE NIGERIA

ABSTRACT

Gaseous pollutants and particulate matter are released into the atmosphere at concentrations above their normal ambient level; this is caused by the increasing human activities which eventually have a measurable effect on humans, animals and plants. The size of particles is directly linked to their potential for causing health problems. Fine particles (PM2.5) are mainly generated by combustion processes including emissions from motor vehicles, combustion of fossil fuel for power generation and large industrial processes such as ore and metal smelting. They may also include natural emissions such as fine windblown soils, sea spray and smoke from biomass burning.

The fine particulate matter (PM2.5) was collected using Casella Cel-712 Microdust Pro Real-time Dust Monitor with polyurethane foam (PUF) and a glass fibre filter (GFF). The PM2.5 levels obtained ranged from 14.00 to 32.67µg/m3during wet season and 18.67 to 34.67µg/m3during dry season. Trace elements were determined using Atomic Absorption Spectrophotometer for the heavy metals and Flame Photometer for the light metals.

The Enrichment Factor (EF) analysis showed very high enrichment for the elements; Pb, Cd, Cr, Cu, Ni, Na, K, Mg, and Ca in the fine fraction (PM2.5) which is a signature of anthropogenic sources. Principal Component Analysis (PCA) studies explained three common contributing sources of fine particulates (PM2.5) such as entrained soil, sea salt and combustion.

Author: CHIEDU, Emmanuel (Federal Institute of Industrial Research Oshodi (FIIRO) Lagos State Nigeria.)

Co-author: Prof. OKUO, James (University of Benin)

Presenter: CHIEDU, Emmanuel (Federal Institute of Industrial Research Oshodi (FIIRO) Lagos State Nigeria.)

Session Classification: Poster Session

Track Classification: Ambient air pollution