



3rd
INTERNATIONAL WORKSHOP
ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

Environmental Pollution: Quantitative Analysis of Particulate Matter (PM₁₀) by SR-TXRF

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Abstract

To study is the air quality in the region of Campinas was set up three collection sites in different locations: Barão Geraldo, Campinas, downtown and Paulínia. Environmental monitoring in addition to researching the amount of total suspended particles (PM₁₀) by comparing the values with the reference value for air quality considered regular CETESB (Technology Company Environmental Sanitation) for 150 µg.m⁻³. After the samples were prepared by a chemical process for measuring technique the total reflection (SR-TXRF) synchrotron radiation at the National Synchrotron Light Laboratory (LNLS). The technique detected 19 chemical elements: Al; Si; P; S; Cl; K; Ca; Ti; V; Cr; Mn; Fe; Co; Ni; Cu; Zn; Se; Br and Pb, addition to measuring the percentage of chemicals related to particulate matter collected. Even with the help of the statistical method – PCA (Principal Components Analysis) grouping the elements according to one of four emission sources that they are: soil re-suspension, vehicular, industrial and sulfates. Getting the percentage of pollution emitted by each source.

Keywords: *Environment, particulate, total reflection.*

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