## Periodicals:

MSF
>
Materials Science Forum
KEM
>
Key Engineering Materials
SSP
>
Solid State Phenomena
DDF
>
Defect and Diffusion Forum
AMM
>
Applied Mechanics and Materials
AMR
>
Advanced Materials Research
AST
>
Advances in Science and Technology
JNanoR
>
Journal of Nano Research
JBBTE
>
Journal of Biomimetics, Biomaterials, and Tissue Engineering
JMNM
>
Journal of Metastable and Nanocrystalline Materials
JERA
>
International Journal of Engineering Research in Africa
AEF
>
Advanced Engineering Forum
NH
>
Nano Hybrids

# Assessment of Soil Heavy Metal Cu, Zn and Cd Pollution in Beijing, China

| | |
|---|---|
| **Journal** | Advanced Materials Research (Volumes 356 - 360) |
| **Volume** | Progress in Environmental Science and Engineering |
| **Edited by** | Hexing Li, Qunjie Xu and Daquan Zhang |
| **Pages** | 730-733 |
| **DOI** | 10.4028/www.scientific.net/AMR.356-360.730 |
| **Citation** | Li Yun Yang et al., 2011, Advanced Materials Research, 356-360, 730 |
| **Online since** | October, 2011 |
| **Authors** | Li Yun Yang, Song Tao Wu |
| **Keywords** | Beijng, Cd, Cu, Soil Heavy Metal Pollution, Zn |

**Abstract** The soil heavy metal pollution have be paid more attention because the sources of soil heavy metals become multiple and complicated with the accelerated urbanization. According to this research, the order of spatial distribution of soil heavy metal Cu, Zn and Cd pollution in Beijing shows that: the center district > suburb > outer suburb. The soil pollution by Zn i more serious in Beijing and the grade of the soil Zn pollution has reached highest in the central district. By comparison, the soil pollution by Cu and Cd is slight, the soil in central district, Chaoyang, Changping and Miyun has caught light Cu pollution, and only in center district, Chaoyang and Fengtai has caught light Cd pollution.



## First page example

*Advanced Materials Research Vols. 356-360 (2012) pp 730-733*
*Online available since 2011/Oct/07 at www.scientific.net*

*doi:10.4028/www.scientific.net/AMR.356-360.730*

# Assessment of soil heavy metal Cu, Zn and Cd pollution in Beijing, China

Liyun Yang[a], Songtao Wu[b]

Department of Ecological Science and Engineering, University of Science and Technology Beijing, Beijing, China
[a]wendy6393@163.com, [b]songtao6393@163.com

**Keywords:** Soil heavy metal pollution, Cu, Zn, Cd, Beijng.

**Abstract.** The soil heavy metal pollution have be paid more attention because the sources of soil heavy metals become multiple and complicated with the accelerated urbanization. According to this research, the order of spatial distribution of soil heavy metal Cu, Zn and Cd pollution in Beijing shows that: the center district > suburb > outer suburb. The soil pollution by Zn is more serious in Beijing and the grade of the soil Zn pollution has reached highest in the central district. By comparison, the soil pollution by Cu and Cd is slight, the soil in central district, Chaoyang, Changping and Miyun has caught light Cu pollution, and only in center district, Chaoyang and Fengtai has caught light Cd pollution.

## Introduction

Recently, the city soil heavy metal pollution result from rapid industrialization and urbanization had caught more and more concern. The modernization of industry and human performance in intensive urban area make the situation of heavy metal pollution worse and worse, such as automobile exhaust, industry waste, dust, atmospheric aerosols, coal combustion products and other dry or wet settlement pollutants [1,2]. Because of the stratified structure and heterogeneity, the soil pollution is different from the atmosphere and water, which can be latent, hysteresis, accumulated and irreversible [3,4]. High concentration of heavy metals in the urban soil will cause adverse effect to human body health, because it can easily contact and be transferred to human body by floating dust directly. In addition, the long-term intake of heavy metals may lead to soil buffer ability reduction and groundwater pollution. Therefore, even trace metal pollution of urban environment may cause long-term and far-reaching influence on health and the environment.

Beijing is the center of polity, culture, economy and international communication in China, locating in the joint zone between the southeast humid and semi-humid regions and the northwest arid and semi-arid regions, so the evaluation on the heavy metals pollution in Beijing has typical research significance. By analyzing the distribution of Cu, Zn and Cd in the soil of Beijing, this study got the basic information and data of the urban soil, and obtained the environmental quality conditions of soil in Beijing based on the evaluation on the pollution degree of the three heavy metals, which would provide basis to control soil quality and monitor environment effectively.

## Methodologies

**Status of Survey Region.** Beijing locates in the zone from N 39°28' to N 41°05', E 115°22' to 117°30', in the northwest of north China plain, the west, north and northeast of which are encircled by the Taihang mountain, Jundu mountain and Yanshan mountain, which makes Beijing like a gulf. The area of Beijing is 16410.54 km², about 38% of which is plain and 62% is mountain.

Beijing belongs to the temperate continental monsoon climate where is drought and windy in spring, rainy and hot in summer and cold and dry in winter. Annual precipitation is 400-750mm and that in summer account for 74% of annual precipitation. The complex factors in forming soil have resulted in a variety of types of soil in Beijing, and the soil in Beijing can be categorized into 9 soil types and 20 subgroups based on phylogenetics and the classification principle of the unification of natural soil and agricultural soil [5].