



## **Assessment of PM<sub>10</sub> and heavy metals concentration in a Ceramic Cluster (NE Spain)**

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Environmental pollution control is one of the most important goals in pollution risk assessment today. The aim of this study is conducting a retrospective view of the evolution of particulate matter (PM<sub>10</sub>) and heavy metals (As, Cd, Ni and Pb) at different localities in the Spanish cluster ceramic in the period between January 2007 and December 2011. The study area is in the province of Castellón. This province is a strategic area in the framework of European Union Pollution control. Approximately 80% of European ceramic tiles and ceramic frits manufacturers are concentrated in two areas, forming the so-called “Ceramics Clusters”; one is in Modena (Italy) and the other in Castellón (Spain). In this kind of areas, there are a lot of pollutants from this industry that represent an important contribution to soil contamination so it is necessary to control the air quality in them. These atmospheric particles are deposited in the ground through both dry and wet deposition. Soil is a major sink for heavy metals released into the environment. The level of pollution of soils by heavy metals depends on the retention capacity of the soil, especially on physical-chemical properties (mineralogy, grain size, organic matter) affecting soil particle surfaces and also on the chemical properties of the metal. The most direct consequences on the ground of air pollutants are acidification, salinization and the pollutions that can cause heavy metals as components of suspended particulate matter. For this purpose the levels of PM<sub>10</sub> in ambient air and the corresponding annual and weekly trend were calculated. The results of the study show that the PM<sub>10</sub> and heavy metals concentrations are below the limit values recommended by European Union Legislation for the protection of human health and ecosystems in the study period. There is an important reduction of them from 2009 in all control stations due to the economic crisis.

### References

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