

Volodymyr Rohovyk

Ukraine

Lviv State Medical University,

vice-chairman of Lviv Regional Organization of Ukrainian Chromatographic Society,

Lviv

Ukraine

**Sustainable development and usage of natural resources
for the environmental protection**

It is known, that environmental pollution is worldwide, especially in our country. In Ukraine there are a lot of heavily contaminated areas. Unfortunately, our environmental policy is poor compared to that of the most developed countries in European Union and United States. Doubtless, the environmental contamination is caused by human activity and civilization development. The cities are the most polluted area due to the motor transport. There are high rate of harmful gases in atmosphere. Some areas can be polluted by the industrial wastes. Particularly, the serious problems of environmental pollution in large areas, as Donaub basin, may be caused eventually by industrial disaster. Under this circumstances the protection of environment is quite difficult and expensive. Sometimes there are no effective ways for determination and inactivation of the main toxic pollutants especially if they exist in a minute concentration. At this rate, it is obviously better to use the simple natural materials for this goal.

We have been interested in this theme for many years. The main subject of our research activity is the effective methodology in the separation and analysis of toxic substances, which are environmental pollutants, by usage of the natural adsorbents like zeolites. It have been investigated the interactions of air pollutant gases with alkaline-earth metal cations and copper in zeolites type Y containing a different quantity of water.

We are interested also in the detection of toxic atmospheric gases, particularly CO. We have determined of the quantity of carbon monoxide (CO), breathed out by children and into the atmosphere. In large cities, CO is known to be the most common air pollutant, which is difficult to isolate and analyze by generally accepted methods. Natural Transcarpathean zeolite containing exchange cations Ag⁺, Cu²⁺ were modified. They permit to isolate of minute quantities of CO and other gases without heating and concentrate them without cooling.

Now it is necessary to show the problems of environmental pollution and prompt to put into practice the methods of detecting of toxic substances by use of natural zeolites. Usage of the cheapest natural resources for the benefit of the environmental protection should be important in the poor developing country.

The Ukrainian Chromatographic Society in its Chromatographic Society Journal raises the problem of environmental protection, and suggests a collaboration among different institutions, and laboratories in order to solve this problem in our region.

It is useful to share an international experiences about usage of natural resources for environmental protection in the European Union with others in order to better appreciate and involve it in practice.