



THE STUDY OF BASIC CONCEPTS OF GREEN CHEMISTRY WITHIN THE COURSE OF ANALYTICAL CHEMISTRY IN AGRARIAN UNIVERSITIES

A.A. Shabelskiy

Orel State Agrarian University, dep. of Biotechnology and veterinary medicine, Orel, Russia

shabelskiy@yandex.ru

Analytical chemistry is the course which taught to all the specialties of student on faculty of biotechnology and veterinary medicine. We have elaborated (in the borders of the present course) seminars devoted to acquaintance with the basic concepts of green chemistry. The strong accent has been made on the review of modern analytical methods and on the development and testing of new ones. Students of agrarian university should have a basic knowledge on green chemistry in view of the specific character of their professional activity. Besides, under the conditions of the lacking of the green chemistry courses in our high schools it is very important to fix attention of students to this area and to form of their mentality in the settings of basic conceptions of green chemistry.

For these purposes, besides the appropriate theoretic component, it has been elaborated practical course "The potentiometric detection of heavy metal ions in the different water sources and plants substratum". The work consists from the follows stage: the synthesis of metal-polymer composites; the fabrication of ion-selective electrodes, with the membrane based on early synthesized composites; sampling; detection of hard metal ions by the potentiometric analysis.

The established ion-selective electrodes have numerous of advantages: the low cost, the simplicity of fabrication and the rapidity of measurements [1]. Such sensors may be applied in chemical and ecological monitoring.

So, the above described modified course of analytical chemistry allows to introduce the students some basis points on green chemistry. Moreover, during the lab trainings students get the opportunity to synthesize by ourselves the composite membrane; to fabricate the ion-selective electrodes on the basis of such composites; to conduct the potentiometric measurement with the ion-selective electrodes of new class.

References

1. A.A. Khoroshilov, G. Bebeud, Yu. Yu. Volodin, I.V. Sagina, A.A. Shabelskiy. *Khim. and khim. techn.* 5 (2001) 127-129.