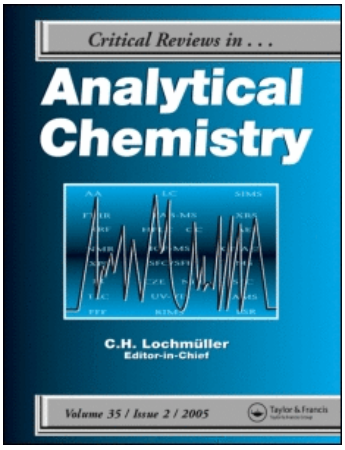

Critical Reviews in Analytical Chemistry
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713400837

ENVIRONMENTAL CHEMISTRY - STATUS OF STUDIES IN LITHUANIA

Saulius Armalis

Online publication date: 03 June 2010

To cite this Article Armalis, Saulius(1998) 'ENVIRONMENTAL CHEMISTRY - STATUS OF STUDIES IN LITHUANIA', Critical Reviews in Analytical Chemistry, 28: 2, 130 — 131
To link to this Article: DOI: 10.1080/10408349891194423
URL: http://dx.doi.org/10.1080/10408349891194423

Critical Reviews in Analytical Chemistry, 28(2):[SI]130–[SI]131 (1998)

ENVIRONMENTAL CHEMISTRY - STATUS OF STUDIES IN LITHUANIA

SAULIUS ARMALIS
Vilnius University, Vilnius

The dramatic increase in public awareness and concern about the state of environment in recent decades has activated the development of environmental education. One of the most important tasks in this field is to achieve that as many people as possible could appreciate the extent of pollution, its causes, the substances involved, their biological and environmental effects, and methods of controlling pollution. In addition, proper understanding of environmental pollution requires knowledge of the processes that govern the transport and transformations of anthropogenic chemicals in the environment, i.e., the knowledge from the field of environmental chemistry.

Environmental chemistry may be defined as the study of the sources, reactions, transport, effects, and fates of chemical species in water, soil, and air environments [1]. Thus, environmental chemistry does not focus on pollution problems only - its field is "chemical" understanding of total environment. Obviously, environmental chemistry draws primarily on the fundamentals of chemistry, but it is also strongly influenced by other natural sciences, especially geology and biology. The crucial feature of environmental chemistry is an interdisciplinary approach.

It should be noted, that there still exists the opinion based on very first texts [2] that the field of environmental chemistry includes problems of global resources, energy production, industrial processes, waste treatment etc. Certainly, these problems are extremely important nowadays and environmental education is absolutely impossible without at least basic knowledge on these issues. Nevertheless, the field of environmental chemistry definitely cannot cover all the environmental problems of modern industrial society.

Environmental chemistry course can be offered in two ways: 1) to chemistry students interested in environmental issues, 2) to students of interdisciplinary environmental programmes. In the first case an advanced environmental chemistry course together with some other environmental courses (e.g., environmental law, management etc.) would enable to prepare environmentally literate chemist. Of course, some background in environmental chemistry should be part of the training of every chemistry student. Students of interdisciplinary environmental programmes who usually have weaker background in chemistry should be given basics of environmental chemistry as essential part of their education. The possible problem in this case can be oversimplification of subject.

The purpose of this survey was to examine the situation of environmental chemistry courses offerings in Lithuanian universities. An environmental chemistry course was defined as one which surveys the environmental chemistry of air, water and soil at a level which requires a background in chemistry.

Table 1 presents the list of Lithuanian universities offering courses of "Environmental Chemistry" at MS level. It can be seen from the list of faculties and departments that only Vilnius University (VU) and Kaunas University of Technology (KTU) have chemistry faculties traditionally consisting of various chemistry departments. However, environmental courses at KTU Faculty of Chemical Technology focus mainly on engineering aspects (environment protection, waste treatment in various industries etc.) and course "Environmental chemistry" (lectures - 32 h, laboratory - 16 h) is offered, in fact, as introductory for students having their BS not in chemistry.

Vilnius University offers advanced course for chemistry students (48 h of lectures) and

course at the Centre for Environmental Studies (48 h of lectures) adapted for students with weaker background in chemistry. It should be noted that environmental chemistry courses at VU do not include environmental chemical analysis because such course (lectures - 32 h, laboratory - 16 h) is offered separately.

Table 1. Lithuanian Universities offering MS courses "Environmental Chemistry"

University	Faculty and Department	Speciality
Vilnius University	a) Faculty of Chemistry, Dept. of General and Inorganic Chemistry b) VU Centre for Environmental Studies	Chemistry Environmental studies
Kaunas University of Technology	Faculty of Chemical Technology, Dept. of Environmental Engineering	Environmental engineering
Vytautas Magnus University, Kaunas	Faculty of Environmental Sciences, Dept. of Environmental Studies	Environmental management
Vilnius Gediminas Technical University	Faculty of Fundamental Sciences, Dept. of Chemistry and Bioengineering	Environmental and civil engineering

Vytautas Magnus University (VMU) offers environmental chemistry course (lectures - 45 h, laboratory - 45 h) for students at the Department of environmental studies. This course is very close in content to VU course at the Centre for Environmental Studies with difference that includes chemical analysis.

Vilnius Gediminas Technical University offers course with a title "Environmental chemistry and microbiology" (lectures - 32 h, laboratory - 32 h). This course includes environmental chemical analysis and, also, some topics of environmental engineering.

It have to be stressed that environmental chemistry courses at Lithuanian universities are given not more than 2-3 years and still are in status of developing.

1.Manahan, S.E., *Environmental Chemistry*, 5th ed., Lewis Publishers, Inc., Chelsea, MI, 1991.

2.Bockris, J. O'M., Ed., *Environmental Chemistry*, Plenum Press, New York, 1977.