

DEPARTMENT OF MOLECULAR SCIENCE AND NANOSYSTEMS

Seminars of the PhD Programme in Chemistry



Università  
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# Contributions of Analytical Chemistry to Green Chemistry

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## **Abstract**

Environmental pollution, global climate change and hazards to human health represent today large concerns leading to a call for change in industrial production as well as use of chemicals. A key item in elimination of hazardous substances is thinking about chemistry. This is a main idea of the Green Chemistry. Following steps of the chemical analysis process, the analytical chemist is a problem solver and thinking about chemistry is included in his daily work. Thus good analytical chemistry is inherently green chemistry.

With respect to the sustainable development - a concept established in 1987 by the World Commission on Environment and Development, analytical chemistry should go even further. Sustainable Analytical Chemistry is characterized as analytical chemistry beyond the green chemistry. Objectives of Analytical Chemistry in this relations are: (i) to detect/determine less and less analyte in less and less amount of sample of more and more complex composition holding good accuracy and precision, (ii) be as environmentally sustainable as possible. Trends of analytical chemistry development will be presented particularly regarding selected modern experimental approaches (microextraction techniques, sample digestion for trace elements determination, new materials for electroanalysis, flow-through analytical systems, etc.) as well as role of analytical chemistry in the detection and evaluation of pollutants and potential toxic species.

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