

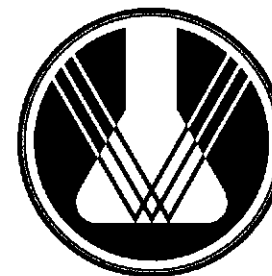
**5th International Conference
on Chemistry and Chemical Education**

Sviridov Readings 2010



РЕПОЗИТОРИЙ БГПУ

Belarusian State University
Minsk, Belarus
6 - 9 April 2010



I S T C
M H T U

BELARUSIAN STATE UNIVERSITY
RESEARCH INSTITUTE FOR PHYSICAL CHEMICAL PROBLEMS
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Book of Abstracts

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The integrative and differentiated approach to studying of general and inorganic chemistry in high school

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Since general and inorganic chemistry is capable to regulate processes of the organization and development of chemical and engineering-ecological disciplines, its role and a place in the system of training of engineer-ecologists at the Maritime high school have been defined. In connection with technological aspects of preservation of the environment, natural and production process should be studied jointly, having chemical knowledge in their basis and expressed by chemical language. Succession and continuity in the content and in the process of studying is the binding link between integration and differentiation.

Training and methodical complex of discipline has been developed, the character of influence of the complex on the quality of future engineer-ecologists training has been studied. The author has investigated opportunities of the integrated and differentiated approach in the organization of professionally directed self-contained work at all stages of studying of chemical and engineering-ecological content. It has been established in the course of the research, that the basic condition of the differentiated approach realization at studying the integrated content of the general and inorganic chemistry is the installation on the development of self-contained work and creative activity of cadets.

Pedagogical prediction method's application to higher chemistry education: the experience of prediction model development

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The experience of pedagogical prediction method development and its testing in the sphere of Belarusian higher chemistry education has been considered. This method includes four stages: 1) predictive orientation - the systematization of the findings of the previous experience analysis; 2) predictive perspective - conditional continuation of present day tendencies into the future with national peculiarities in view; 3) predictive appraisal - development alternatives' ranking by Belarusian scholars; 4) predictive modeling - prediction method modeling.

Predictive model of Belarusian higher chemistry education development (prognostic background, prognostic evaluation of favorable and unfavorable effects, prognostic scenario and prognostic indicators) allows us to evaluate present state as well as to define the strategy of Belarusian higher chemistry education development on macro and micro levels.

Continuity and compactness as the basic conceptions of teaching and learning chemistry

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Beside such classical didactical principles as visualization, systemization, links between theory and practice, individualization and differentiation etc. we would like to pay attention to the conceptions of continuity and compactness as the psychological and logical basis of selection and structuring teaching material and methodology of teaching and learning. Derived from the mathematical models represented by directed graph $G = (X, U)$ it is possible to calculate the parameters that allow to compare different design of teaching materials and methodology quantitatively [1]. According to the conception of continuity every new piece of teaching material is built on the previous one. The conception of compactness is related to summary time spent on the study of teaching material. The