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TECHNOLOGIES OF ENGINEERING AND ACADEMIC ACTIVITY DEALING WITH KNOWLEDGE AND INFORMATION, WHICH ARE APPROPRIATE TO INNOVATION DEVELOPMENT OF RUSSIA

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This paper proceeds with the discussion, which was started by P.A. Butyrin and I.B. Peshkov in the first issue (2008 year) of the journal "Izvestia of AEN RF", where the importance of the social order to scientific society was underlined: "Taking into consideration that the state partially disclaims responsibility for ... the science and education condition, then the Russian public organizations should assume the primary responsibility down to the limit".

The social imperative of the article is: today the inadequacy of national educational system takes the first place among the National safety threats. For innovation development of Russia (about which we are talking so much) it is vitally necessary to transfer from the dominant "scientific education" system to the system of "scientific-technological education".

The main idea of scientific-technological education is to join the three approaches: knowledge, activity and information into the united social-technological system. We show, how this integrated system of scientific-technological education will be able to prepare the citizens to "complete a lot and well done" together with other citizens using the whole treasure of human knowledge.

DIALECTICS OF THOROUGH TECHNOLOGICAL KNOWLEDGE AS A MAIN PRINCIPLE FOR GRADUATES' INNOVATIVE THINKING FORMATION

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The main question that is considered in the article is the innovative thinking formation of the graduates from the technical universities. The ontological and logical-methodological aspects are worth of mentioning. The ideas of G.S. Altsuller and the imaginary logic by N.A. Vasiliev are used to solve the innovative and technological problems. The research is conducted with the help of advanced materials for design and construction of nuclear power plants.

INNOVATIVE ADVANCED EDUCATION: TIME AND METHODOLOGY

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Innovative advanced education is closely associated with the appreciation of Time and its role in the modern world. According to the authors the main measuring unit of innovations in Higher Professional Education is the Lecturer. The innovation is possible only if the teachers are ready for advanced methodological thinking that should be provided by the appropriate policy of the university human resource management.

SCIENCE AND EDUCATION MATHEMATISATION – REQUIREMENTS FOR REALIZATION OF SUSTAINABLE DEVELOPMENT CONCEPT

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The modern systemic crisis of civilization, that is considered to come from the crisis of thinking, is substantially a projection of science and education crisis. Formation of a holistic, noospheric thinking is impossible without the process of science and education mathematization, which determines the direction of modern civilization and facilitates the development of the triune concept of Sustainable Development.

CREATIVE PERSON: FORMATION AND DEVELOPMENT IN TERMS OF INNOVATIVE EDUCATION

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In the article it is risen the question of the interrelation of innovative economy with necessity of formation and development of the creative person, creative style of thinking. There are allocated two distinct in kind styles of thinking: binitarian or trinitarian (dialectic, ecological). The concept of integrative (metasystem) style of thinking is introduced. It is given the conceptual structure of disciplines on formation and development of the creative person.

INNOVATION THINKING IN ENGINEERING EDUCATION: CONDITIONS AND GENESIS

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University*

The report presents a conceptual approach to paradigmatic innovation in engineering education. The essence of the innovation is to abandon the traditional pedagogical approach to the organization of the educational processes. As an alternative there are introduced the approach and technology of learning process design and execution, formed on the basis of biopsihological and social paradigm of education.

COMPETENCE APPROACH IN DESIGNING HIGHER EDUCATION (HE) PROGRAMS FOR PREPARING SPECIALISTS IN THE FIELD OF TECHNIQUES AND TECHNOLOGY TO INNOVATIVE ACTIVITY

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cal University, Fedorov I.V., Moscow
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There are given recommendations on designing educational programs and individual modules for training innovative experts in a competent format. It is proved the need to add the list of universal and professional competences of Bachelor and Master in Techniques and Technology with the competencies, describing ability to innovate. A content of the modules for the formation of general and special innovation culture is available. The didactic requirements to succeed in operating innovation-oriented educational programs are determined.

THE COMPETENT - FOCUSED SYSTEM OF FUNDAMENTAL DISCIPLINE TEACHING IN TECHNICAL HIGHER EDUCATIONAL INSTITUTIONS

*Petruk V.A., Vinnitsa National
Technical University, Ukraine*

The competent - focused approach to solve the problem of fundamental training of graduates from technical higher educational institutions, for example in higher mathematics, is discussed in the article. The priorities of advanced innovative engineering education are marked out. It is offered to form students' base level of professional competences of the prospective engineer, while teaching fundamental disciplines.

THE METHOD FOR LEARNING PROCESS ACTIVATION BY THE UNIVERSITY STUDENTS

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Tabachny E.M., Philosophy Doctor, Associate professor Department of the Industrial Economics and Management Department, MPEI.

The new conception and teaching methodology developed and tested at the Department of Industrial Economics and Management, Moscow Power Engineering Institute is presented in the article. The Methodology targets to the transfer from the fact-based learning model to the model called 'teaching the learning process'. The article provides the content of the method and the results of testing.

THE ACCEPTANCE OF ENERGY-SAVING DESIGN DECISIONS AS CRUSIAL COMPETENCE OF GRADUATES FROM TECHNICAL UNIVERSITIES

Rakut'ko S.A., Far East State Agrarian University

It is noted the necessity of paying attention to the problems of energy-saving in the modern innovative

technical education. Urgency and importance of acceptance of energy-saving design decisions (AEDD) as a crucial competence in engineering is proved in the article. The components of the structure of AEDD - competence are introduced. The method of numerical estimation of AEDD - competence level is generated.

ALGORITHM AND TECHNIQUE OF WORKING OUT THE CURRICULUM ENGINEERING PREPARATION OF INNOVATIVELY FOCUSED PERSON

El'cov V., Skripachev A., Togliatti State University, Automotive institute

Nowadays formation of new educational program for engineer training is an essential problem almost for all high schools. Allocation of competences through analysing different kinds of engineering activity, and drawing up a matrix of such competences is a basis for the further curriculum structure formation in preparation innovatively focused person. Modularity of curriculum allows to form set competences of the graduate. Creativity thinking of educational activity object in the new program is provided with application of active forms of training.

DESIGNING OF AN ACADEMIC PROGRAM IN "MICROPROCESSOR TECHNICS"

Vakhtina H.A., Vostrukhin A.V., Stavropol State University of Agriculture

The urgency of the interdisciplinary academic program «Microprocessor technics» in an engineering education for the competence approach to the higher education is shown in the article. Pedagogically based academic program is offered to transform the

social experience in the personal one. Components of this program as well as their interaction are considered.

SCIENTIFIC AND ACADEMIC ESTIMATION OF AN URGENCY, ESSENCE AND PROBLEMS OF INNOVATIVE ACTIVITY IN RUSSIA

Soskov V.B., Tula State University

The analysis of innovative activity is carried out in the given work: the urgency of innovative activity, the contents and criteria of classification are considered, the functional model is constructed, arising problems and ways of their solving are described. The attention is payed to innovations in higher scientific and educational organizations of the Russian Federation - institutes and universities.

EMPIRICAL IMPLEMENTATION OF ADVANCED INNOVATION EDUCATIONAL PROJECTS

Kazakov Y.B., Schebnev V.S., Kologanov A.R., Khalturin V.Y., Ivanovo State Power University

Empirical implementation of advanced innovation educational projects is discussed in the article.

UNIVERSITY LEADERSHIP AS THE LEADERSHIP OF A VALUE-ORIENTED SYSTEM

B.L. Agranovich, V.A. Pushnykh, Tomsk Polytechnic University

The features of a university leadership as the leadership of a value-oriented organization are discussed in the article.

TECHNICAL UNIVERSITY TRANSFORMATION WITHING INNOVATION DEVELOPMENT STRATEGY OF ALTAI REGION

L.A.Korshunov, S.V. Novoselov, Polzunov Altai State Technical University

The article considers basic approaches to technical university transformation within the framework of the regional strategy of Altai innovation development which determine the conditions of "university-industry" system formation. The given work demonstrates distinctive features of research and innovation activity of Polzunov Altai State Technical University. Perspective areas of innovation activity development for achievement of social and economic results in the region conditions are shown in the article.

PROBLEMS OF MILITARY EDUCATION INNOVATION

Roman E. Bulat, Military Technical University (St. Petersburg)

The problems of military education innovations meet with some specific difficulties. They are connected with two main features of the educational process: its management and the development of the students' needs for self-perfection. The article analyses some facts which prevent the growth of the quality of students' professional training. Same ways to overcome those difficulties are given in the article.