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## ЭЛЕКТРОННЫЙ НАУЧНО-ТЕХНИЧЕСКИЙ ЖУРНАЛ КАК МЕХАНИЗМ ИНТЕГРАЦИИ НАУКИ ОБРАЗОВАНИЯ И ПРОИЗВОДСТВА

*Ключевые слова:* интеграция, молодежный, электронный научно-технический журнал, *Research, Science and Technologies (RST)*.

*В статье рассмотрены вопросы, связанные с интеграцией науки, образования и производства с помощью информационного электронного издания. Молодежный электронный научно-технический журнал «Research, Science and Technologies (RST)» представляет собой электронное издание научно-технического профиля на английском языке. Журнал является основой для совместных исследований, а также интегрирующим звеном между наукой образованием и производством.*

*Keywords:* the integration, youth, electronic scientific and technical journal, *Research, Science and Technologies (RST)*.

*In this paper questions related to the integration of science, education and industry through the information electronic publication are considered. Youth electronic scientific and technical journal «Research, Science and Technologies (RST)» is an electronic publication of scientific and technical profile in English and Russian languages. The magazine is a platform for collaborative research, and integrating link between science education and industry.*

### Introduction

In modern world, the level of development of science and technology is the key to a successful prosperity as of a separate state, the region so of the world in the whole. Scientific and technological progress plays a crucial role for the economical state, education, manufacturing and other key areas of human activity [1, 2]. Due to the rapid pace of technological progress and, as a consequence, the changes of technology, the main potential of the developed countries are intelligent technology, education, and high qualification of engineering and technical personnel [3].

The introduction of innovative technologies in the sphere of economy, production, business and culture leads to the need for improved methods of preparing engineers, continuous updating of knowledge skills of specialists, as well as additional training of technical profile students for their future profession [4].

### Innovative development

The transition to innovative development involves extensive training of scientific, technical and engineering personnel able to team work, the creation, implementation and project management [5]. In work [6] project-based learning is seen as the basis of higher education of technical specialists, including a polymeric structure in Great Britain, Germany and the USA system, that designed to help achieve the main goal - the development of the individual. A main emphasis here is placed on the formation of the ability to learn and original thinking. The curricula of UK universities for projects allocated 50% of the time, the other half of the time allocated to courses related to the project (25%) and not associated with them (25%). For comparison, in the U.S. higher education is given to projects 45-48% of the time in Germany - 25%, in Russia - 5% of training time. In work [7] are shown forms of interaction between the university and the training of engineers in the production of chemical-technological profile in order to increase motivation for professional knowledge.

This training is possible in terms of integration of science, education and industry and the system of training, involving the formation of important knowledge and skills of the future high profile professionals [8, 9]:

- Complex analysis and working with information;
- Implementation of creativity in science and inventions;
- Formation of moral values in the system of nature-society, systemic way of thinking;
- Analytical thinking, based on the fundamental scientific concepts, integration, differentiation, synergy;
- Ability to adapt, training, teamwork, responsibility, decision-making;
- The ability of forecasting, foresight consequences;
- Continuous increase of knowledge and its practical application;
- Development of subject-object relationships in communication processes and management processes.

In terms of international cooperation the modern technical specialists need a good command of the inter-professional knowledge, foreign language competence in the various fields of professional activity. He should be able consciously to expose a variety of scientific, technical and socio-economic phenomena to comprehension as the state and regional and international levels [10]. He has to develop the ability to correlate political, cultural and social phenomena with the current economic situation, the ability to transform the individual subjective views in speech, categorical and communicative forms, and the ability to find creative solutions for various kinds of professional tasks.

This system training can be carried out only in a successful interdisciplinary integration, which is to the integrity of the acquired knowledge in the establishment of deep causal relationships between masters and the results of cognitive activity. However it is also

necessary to take into account another important factor in the development of world scientific and educational activities - the introduction of information and communication technologies in the educational system.

### **Research Science and Technologies (RST Journal)**

Communication processes of the information society are transformed, as a consequence of the informatization of public relations, the development of informational virtual reality. New information and communication technologies (ICTs) influence all spheres of public life and society. Information and communication technologies (ICT) are reflected in the Internet space, and the new phenomenon of social life becomes a virtual reality. With the development of information and computer technologies, the emergence of geographically distributed systems takes a global scale. Social networks, mass media, online games, online trading, manufacturing and economics are an essential infrastructure of the society based on the broad possibilities of Internet technology [11].

In this regard, the quality of training of the engineer will depend on the level of basic and general engineering training, on the level of training in the field of information technology, as well as the level of economic, linguistic and humanitarian components [12]. However, limited number of hours devoted to the study of foreign languages, does not allow the future professional to master this skill at the appropriate level.

Therefore, the development and establishment of electronic research journal in English and Russian languages, aimed to integrate science, education and industry is very relevant one.

The development of information technology enables to use scientific literature, and promote scientific and technical progress. Electronic Science and Technology journal makes it possible not only to expand access to scientific and technical information, but also to create a virtual basis as the foundation of integrative processes and continuity in research.

The title and content cover of electronic research journal «Research Science and Technologies» (RST Journal) are presented at Fig.1.

The main advantages of electronic research journal «Research Science and Technologies» (RST Journal) are [13]:

- Online publication of the results of scientific research and the opportunity to discuss them on the site;
- Fast access to publications, archives and articles on mobile devices and desktop computers with an internet connection;
- Availability of information resource allows users to share their views and comments on specific scientific material in real time;
- Application of technology photos and video presentations in scientific publications and articles that enhance the information;
- No polygraphic printing cycle and easy navigation in the electronic media magazine;
- High availability of electronic research journal «Research Science and Technologies» (RST

Journal) increases the efficiency of integration and getting feedback between the editors, authors of articles, scientists, experts, teachers, graduate students, students, and users who are interested in this topic.



**Fig. 1 - The title and content cover of electronic research journal «Research Science and Technologies (RST Journal)**

### **Purpose and main objectives of the RST Journal**

The purpose of the journal is to unite scientists, teachers of vocational and higher education institutions, graduate students, teachers, and specialists in various fields of industry and production to create a common information space and a basis in scientific communication. This journal will be available electronically in PDF format with periodicities of 4 issues per year.

The main objectives of electronic research journal «Research Science and Technologies» (RST Journal) are:

- To highlight the current and modern trends in interdisciplinary areas of science and technology, natural sciences and humanities;
- To provide professional development of specialists, teachers, and students;
- To encourage professional dialogue;
- To highlight the main issues in the field of information technology, artificial intelligence and virtual reality;
- To promote the integration of science, education and industry and unite perspective professionals and scientists to work together on projects in the scientific, technical and humanitarian fields;
- To promote the expansion of international relations, co-operation between organizations, professional and educational institutions;
- To provide online access to publications and articles;
- To promote the development of an information and interactive environment, which is the

basis of interaction between professionals, academics, graduate students, students, and academic communities;

- To develop the promotion of scientific activities of young people in science;
- To give consideration of a wide range of challenges facing the oil and gas complex of Russia, the search for effective solutions in terms of practical significance and achievements of theoretical basis.

Further development of the RST Journal suggests creating of an information platform for scientific cooperation between Russian and foreign universities and experts, scientists, teachers and students, the development of new projects in the field of training of young specialists, the publication of the work, publication of materials in the form of an electronic collection of articles and printed version, creating basis for scientific debate, as proposed by the topic so the topics published by other members, discussing of current issues of science, education and industry, conferences, workshops and congresses, On-Line activities [14].

The topics and areas of articles and reports RST Journal:

- Automation and Computer Engineering;
- Geology, prospecting and exploration of oil and gas;
- Engineering and Applied Mechanics;
- Design, construction and operation of pipeline systems;
- Development of oil and gas fields;
- Chemical Technology and Environment;
- Economics and Management;
- Legal development of the industry;
- International energy business;
- Humanities;
- Energy and alternative energy sources;
- Biomedical Technology;
- Marine technologies and water resources.

Studying of problems of integration of professional and general education in relation to the training of future specialists, we come to the conclusion that such integration is carried out through the establishment of relationships between scientists, educators, professionals, graduate students and students in interdisciplinary integration.

Thus, the basis for problems' solving is the interdisciplinary communication. In the formation of future specialists a holistic view of the specifics, the content and structure of the future activity are important, which are the main instruments of integration and here an electronic scientific and technical journal «Research Science and Technologies (RST)» can be as a necessary integrative link.

It was revealed that the quality of training, education and research activities depends on the level of implementation of new information technologies, capabilities of virtual computer communication based on Internet. However, the greatest significance of the magazine is based on the fact that it's main goal is to drive science, industry and manufacturing in the field of higher education. In this regard, we propose the idea of an electronic journal in English creating for the integration and joint research between students AGNI and other

universities, researchers, teachers, specialists of JSC "TatNeft" and other enterprises. It should be noted that the special interest can cause both professionally oriented articles, and articles of general and non-fiction focus. The need for a corporate e-magazine is also due to the fact that the modern enterprise needs the accumulation of collective knowledge, the integration of specialists in various fields to solve strategic tasks of industry, as well as in the search for talented young people at a grade in high school and prepare them for future employment.

The joint work of specialists and students will help to prepare the staff for the Republic of Tatarstan, as well as allow students to deal directly with production tasks, new equipment, and to solve them together. To make the magazine be interesting to a wide range of readers, materials that will cover the entire sphere of progress in various fields will be published there.

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