

# Summary

## THE BAUMAN MSTU: EXPERIENCE, TRADITIONS AND INNOVATIONS IN ENGINEERING AND SCIENTIFIC STAFF TRAINING

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The article deals with the whole totality of problems concerning engineering education and universities' activity at the present stage of education system reform. It analyzes topical problems and shows possible ways of their solving. In the light of historic experience and training traditions of The Bauman MSTU. In fact, it gives the characteristics of a contemporary technical university, the problems of formation of its unique scientific and educational environment which can train engineering elite, use the scientific potential effectively and provide a real universities' contribution into Russian economy modernization.

## PROBLEM SITUATIONS IN ENGINEERING TRAINING

*A.P. Karpik*

*Siberian State Academy of Geodesy*

The article suggests a competence and qualification approach to formation of engineering training innovative model. The approach takes into account a regional component and is based on integration of cluster interaction of continuing education participants.

## ENHANCING ENGINEERING EDUCATION IN THE POST-CRISIS PERIOD OF ECONOMIC DEVELOPMENT IN RUSSIA

*V.M. Kutuzov, N.V. Lysenko,*

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*St. Petersburg State Electrotechnical University "LETI"*

In the developing economy of knowledge, the task of establishing and strengthening partnership with industry and the labor market as whole becomes of the top priority. It needs developing a network of organizations interested in mutually beneficial collaboration in the area of training highly qualified engineers, improving the technical facilities of the academic process, conducting joint research, upgrading manufacturing facilities, etc. To make such collaboration a success, it is important to realize how to establish the university-industry partnership based on mutual interests

and benefits. The paper presents the experience from St.Petersburg State Electrotechnical University "LETI" in launching and running a University-Industrial Enterprises Strategic Partnership Program aimed at enhancing engineering education at the university.

## PROBLEMS IN MARKETING TEACHING IN TECHNICAL UNIVERSITIES

*B.Ch. Meskhi, T.P. Lyubanova,*

*N.N. Shumskaya*

*Don State Technical University (DSTU)*

The article describes the DSTUB experience in training engineers in the sphere of techniques and technology who have engineering marketing competencies.

## EXPERIENCE IN STAFF TRAINING AND RETRAINING FOR SOLVING DESIGN AND ENGINEERING PROBLEMS IN OIL INDUSTRY

*I.N. Koshovkin, A.S. Latyshev,*

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The article describes oil companies' basic requirements for modern engineers who work on designing and development of oil and gas fields. It analyzes and suggests the most optimal ways of interaction between Higher Education Establishment and Enterprise in the sphere of design engineer training. The example of the scientific-research institute shows practical implementation of business-education interaction concepts. It also describes basic approaches to effective staff development and training programs being put into practice.

## THE INTERACTION OF THE ENGINEERING EDUCATION WITH HIGH-TECHNOLOGY BUSINESS

*I.M. Golovnikh*

*National Research Irkutsk State Technical University*

Nowadays the strong competitiveness for the qualified engineers exists on the labor market. Business and modern level of production allow raising a demand to the quality of the staff training and the existing system of high professional education continues to graduate specialists who are not very well prepared to the production activity. The solution of the problem is to unite the efforts of technical universities and big high-technology companies.

### SOME OF THE APPROACHES TO THE NATIONAL DOCTRINE OF ENGINEERING EDUCATION

*Y.P. Pokholkov*  
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The article explains the necessity and urgency to develop the national doctrine of Russian engineering education in conditions of new industrialization. It discusses a possible structure of the national doctrine of advanced engineering training in Russia. It describes the management principles of engineering education and the approaches to their implementation.

### INDUSTRIALIZATION AS A KEY DRIVER FOR MODERNIZATION OF ENGINEERING EDUCATION. ENGINEERING EDUCATION: TOWARDS NEW INDUSTRIALIZATION

*P.S. Chubik, M.P. Chubik*  
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The paper examines key mechanisms for modernization of engineering education system in Russia in the context of the policy stated by the Russian Government towards new industrialization and main tendencies in development of modern Russian and global engineering education.

### SOME APPROACHES TO FORMING THE NATIONAL DOCTRINE OF ENGINEERING EDUCATION

*S.A. Podlesniy*  
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In this paper there have been considered some problems connected with forming the national doctrine of advance continuous engineering education in the conditions of new Russian industrialization and economy globalization.

### REQUIREMENTS APPLIED TO ENGINEERS IN TERMS OF MODERN INDUSTRIALIZATION AND THE WAYS OF ITS REALIZATION

*A.S. Sigov, V.V. Sidorin*  
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The successful implementation of the concept Modern Industrialization requires engineers who have completely new set of competences. Both new requirements to the qualification of engineers based on the analysis of the main features of Modern Industrialization are presented and the specific features of modern system of higher technical education are considered. The cluster approach to the organization of educational, scientific and innovative activity as the most effective method to the formation of human resources potential in term of Modern Industrialization is considered in as well.

### FORMATION OF NATIONAL ENGINEERING REGISTRATION SYSTEM ON INTERNATIONAL STANDARD BASIS

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The work describes the formation of Russian national engineering registration system in the frame of formation of National Competency and Qualification System (NCQS). It shows the foreign countries' experience in licensing for engineering activities, in particular, NCEES (the USA). It underlines the necessity to integrate the Russian national engineering registration system with the international structures, such as FEANI Register, APEC Engineer Register, EMF. It suggests the way to organize a systematic interaction of accreditation centers of engineering education and engineering register centers with interested parties (higher educational institutions, enterprises and engineers) as well as with corresponding monitor committees.