



### Dear readers!

The challenges of the external and internal environment to Russian and world engineering education become more acute not only with the development of engineering and technology but also in connection with the changing social and economic relations in society. We can clearly see how the requirements for specialists in the field of engineering and technology trained in higher education institutions are changing. These changes deal with both professional competencies and soft skills outlining the ability to organize engineering activities, work in a team and be open-minded, the ability to see, formulate and find the solution of engineering problems.

In an attempt to find a way out of existing and emerging situations, the engineering and academic professional community takes various initiatives. Wavy, but the continuous interest of the community in such initiatives and approaches as CDIO, interdisciplinarity, practice-oriented, problem-based and project-based learning, professional standards, outcome-based approach, etc. demonstrates that all the problems mainly concern the improvement of content and educational technologies in engineering education. To a lesser extent, this interest is concentrated on the education management system. Despite all these initiatives, the

“classroom lessons” system continues to dominate in the training system of future engineers. The knowledge component in the training process prevails over the active component. At the same time, the requirements to competencies and skills of graduates are raised, which are precisely need to be formed following active learning approach. The situation is aggravated by the lack of coherent and adequate methods for assessing competencies within the training process at HEI and upon graduation. The transition to the two-tier education of future engineers still causes discussions in the professional environment, due to the lack of a coherent strategy for managing the training of specialists for professional engineering activities. In these conditions, the professional scientific and educational communities have to work concentrating their efforts on improving engineering education, adapting its content and educational technologies not only to the requirements of the modern engineering community but also to stochastically changing bureaucratic requirements. The avalanche-like increase in the number of required papers regulating the educational process not only does not provide an avalanche-like improvement in the quality of training of future specialists but, on the contrary,

reduces the opportunity to increase this quality, encroach upon teachers' time that they really could use for solving this problem.

This issue of the journal offers readers to get acquainted with the results of reflection, analysis, use of methods and techniques in engineering education,

reproduction of engineers, quality assurance of training by improving educational technologies.

We hope that the articles of our authors will help readers to find answers to their questions in the field of engineering education.

Sincerely,  
Editor-in-Chief,  
Prof. Yury Pokholkov

