
Current Transformation Processes in the System of Elite Engineering Education

© N.I. Sidnyaev, S.K.Sobolev

Bauman Moscow State Technical University, Moscow, 105005, Russia

The article is devoted to the modernization of the national system of engineering education. The problem of conflict resolution in the field of higher engineering education has been studied in terms of innovation development. The role of technical universities in the preparation of elite science and engineering and public-management professionals has been examined. The main features of the elite mathematical education at the technical university have been analyzed. The analysis of transformation processes in the national education system is given. Considerable attention is paid to the methods of modern worldview formation in the course of preparation of engineering staff on the basis of basic training.

Keywords: engineer, modernization, higher education, industry, innovation, professional elite, methodology, education, concept.

REFERENCES

- [1] Fedorov I.B., Kolesnikov K.S., eds. *Nauchnye shkoly Moskovskogo gosudarstvennogo tekhnicheskogo universiteta im. N.E. Baumana. Istoriya razvitiya* [Scientific School of the Bauman Moscow State Technical University. History of development]. Moscow, BMSTU Publ., 2005, 404 p.
 - [2] Federov I.B. *Sokhranyaya i razvivaya traditsii, dvigayas vpered. Vystupleniya 1991–2010 gody* [Moving Forward Preserving and Developing Traditions. Speeches in 1991–2010]. Moscow, BMSTU Publ., 2010, 568 c.
 - [3] Sidnyaev N.I. *Alma Mater (Vestnik vysshey shkoly) — Alma Mater (Herald of the Higher Education Institutions)*. 2014, no. 5, pp. 33–40.
 - [4] Mitin B.S., Manuylov V.F. *Inzhenernoe obrazovanie na poroge XXI veka* [Engineering education into the XXI century]. Moscow, Rusanov Publishing House, 1996, 224 p.
 - [5] Ashin G.K. *Elitologiya: istoriya, teoriya, sovremennost* [Elitology: History, Theory, Modernity]. Moscow, MGIIR (U) Publ., 2010, 600 p.
 - [6] Romanov E.B. *Alma Mater (Vestnik vysshey shkoly) — Alma Mater (Herald of the Higher Education Institutions)*, 2014, no. 5, pp. 9–13.
 - [7] Grigorash O.V. *Alma Mater (Vestnik vysshey shkoly) — Alma Mater (Herald of the Higher Education Institutions)*, 2013, no. 3, pp. 71–75.
 - [8] Masalimova R.G. *Kazanskiy pedagogicheskiy zhurnal — Kazan Pedagogical Journal*, 2012, no. 4, pp. 171–178.
 - [9] Bez inzhenerov vizhit' ne poluchitsa [Will not survive without engineers]. *Otchet o zasedanii Soveta pri Prezidente RF po nauke i obrazovaniyu*. 23 iyunya 2014. RNA, razdel 9. [The Report on the Meeting of the RF Presidential Council for Science and Education. June 23, 2014. RNA, section 9]. Available at: <http://ru-an.info/news/3133/> (accessed 28.03.2015).
 - [10] Evgenev G.B. *Sistemologiya inzhenernykh znaniy* [Systemology of engineering knowledge]. Moscow, BMSTU Publ., 2001, 376 p.
 - [11] Chaplygin Yu.A., Korolev M.A. *Mashinostroenie I inzhenernoe obrazovanie — Mechanical Engineering and Engineering Education*, 2005, no. 1, pp. 47–52.
-

[12] Medvedev E.V. *Mashinostroenie i inzhenernoe obrazovanie — Mechanical Engineering and Engineering Education*, 2005, no. 2, pp. 60–70.

Sidnyaev N.I. (b. 1955) graduated from Bauman Moscow Higher Technical School in 1981 and from Lomonosov Moscow State University in 1985. Dr.Sci. (Eng.), Professor, Head of the Higher Mathematics Department at Bauman Moscow State Technical University. Author of about 220 publications in the field of applied mathematics and mechanics. Scientific interests: numerical methods, fluid and plasma mechanics, equations of mathematical physics, probability and statistics. e-mail: sidnyaev@yandex.ru

Sobolev S.K. (b. 1951) graduated from the Mechanics and Mathematics Faculty at Lomonosov Moscow State University in 1973 and the postgraduate course in Steklov Mathematical Institute in 1976. Candidate of Sciences (Phys. & Math.), associate professor of the Higher Mathematics Department at Bauman Moscow State Technical University. Author of several articles on mathematical logic, methodology of mathematics teaching and textbooks for students. The Chairman of the methodological Commission of the Department of Higher Mathematics. e-mail: sergesobolev@mail.ru
