

Short Communication

Importance of Nanotechnologies in Supply of Sustainable Social Economic Development in Russia

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The importance of nanotechnologies for social economic development in Russia is analyzed in the article. The main tendencies at the world nanotechnology market are marked. The main macroeconomic figures tied with nanotechnologies are examined and analyzed.

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Academician RAS S.Y. Glazyev in his report “Development of Russian economy under global technological shift conditions” showed that according to the revealed regularity in global technical economic development, in the entrails of dominant, and now coming into the phase of growth of the “modern” (the fifth) – informational – technical mode, “which key point is macroeconomic and software”, a “new” (the sixth) reproductive structure begins to form, which main tendencies of development are biotechnologies, based on molecular biology and genetic engineering achievements; nanotechnologies, system of artificial intelligence, global informational and integrated high speed transportation nets. There is a succession between the fifth and the sixth technological modes. Postsoviet Russia, which is behind in coming into the sixth, as “widening of the fifth technological mode has a catching up and imitating character” (as it goes on an imported base). Though “this being behind happens at the development stage and could be overcome at the stage of growth”. Before a large scale reconstruction, it is necessary to master key production of the new technological mode nuclear, which further widening will let us extract “intelligence rent” at a global scale”. Russian science has a big enough potential of gained knowledge and perspective achievements, opportune production realization of which is able to give a leading position for motherland enterprises on the crest of a stated “long wave” of economic growth; though our industry (except nuclear and aerospace industry) doesn't have mechanisms for its realization, and their “quickest creation is a future country development decisive factor”.

So only high technology production will let Russian enterprises continue to develop under the conditions of competition. Even at present many organizations use the results of R&D (for example, nanotechnologies) or produce production of a high level processing.

The above mentioned report was made at the Russian Academy of Sciences session in 2007, it conceptually defined the main tendencies of Russian development.

In the following years (period from 2008 to 2011) the number of organizations doing research and development tied with nanotechnologies grew by 5 %, at the same time the number of researchers doing research and development tied with nanotechnologies increased by 42 % in that period (table 1). At the same time internal costs on research and development tied with nanotechnologies increased by 137 %.

The increased amount of financing during 4 years testifies knowing the importance of the nanoindustry development in Russia, its role in the country competitive ability guarantee in whole and separate organizations in particular at the international market.

According to the European Commission assessment the volume of the world market of goods, made with nanotechnologies use, can reach 2 trillion euros by 2015 and about 10 million people will be engaged in this sphere.

Nowadays, because of the quick growth of research in this sphere and quick growth of nanoproduction quantity coming to the consumer market, European Commission intends to form necessary laws to regulate the process of research, technology creation, their commercialization, final products creation and protection of consumers.

According to some projections in the nearest future Asian-Pacific region will leave on the same level of sales with the USA and Europe. On the whole the cumulative annual production growth rate of nanotechnologies, as admitted in the research, will increase by 33 %.

Thus the development of nanotechnologies (both fundamental and applied) and their results coming to the market (commercialization) let Russia overcome postsoviet period backwardness and compete under the conditions of the new technological mode with the leading world economies. Moreover nanotechnologies help the development of innovative economy improvement of the environment, health and a whole series of goods improvement [2].

Table 1 – Number of researchers and costs on research and development tied with nanotechnologies [1]

| | 2008 | 2009 | 2010 | 2011 | 2011/ 2008 |
|--|---------|---------|---------|---------|---------------|
| Number of organizations doing research and development tied with nanotechnologies | 463 | 465 | 480 | 485 | 1,05 |
| Number of researchers doing research and development tied with nanotechnologies, men | 14873 | 14500 | 17928 | 21166 | 1,42 |
| Internal costs on research and development tied with nanotechnologies, mln roubles | 11026,2 | 15113,1 | 21283,7 | 26086,0 | 2,37 |

REFERENCES

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