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Developing nano research in Russia: a bibliometric evaluation

ABSTRACT. Nanotechnology has attracted substantial global research, funding, and policy directives in recent years. The Russian government considers development of nanotechnology as a strategic goal to shift the economy in an innovative way, and in the medium term aims to make the country one of the world's leaders in nanotechnology. The question is, whether this is feasible. Since nanotechnology is largely science-driven, we focus in this article on the evaluation of the scientific performance in Russia and other countries in the field. Based on the Science Citation Index (SCI)-expanded web version, Russia has lost its competitiveness in terms of scientific performance. Its relative decline in percentage share of nanotechnology publications since 1997 is due to prolonged underfunding of science and the brain drain, as well as the competitive advances of other countries ahead of Russia in prioritizing nanotechnology at state level. Russia is thirteenth in the world in terms of the total number of citations to all its nanotechnology publications for the interval 1990–2008 and is in the fourth ten countries according to the average number of citations per publication. Russia is in the top ten countries by the number of high-impact publications thanks to domestic researchers in the field of graphene and bulk nanostructured materials. It has fairly good prospects in nanophotonics, as evidenced by bibliometric indicators and the availability of training opportunities for young researchers.

Keywords: bibliometric evaluation, carbon nanostructures, nanophotonics, nanotechnology

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