Editorial

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Dear Readers!

We present for your attention the next thematic issue of the journal *Nanotechnologies in Russia*. One of the main principles that our editorial board adheres to in selecting articles is their interdisciplinarity and convergence of sciences not only within the natural science, but also the humanitarian block.

It is no coincidence that this issue is devoted to perhaps one of the most starkest manifestations of cooperation in these areas: the study of cultural heritage objects using natural sciences methods.

The most popular in studying objects of various origin are the complementary methods of synchrotron and neutron diagnostics, electron microscopy and elemental microanalysis, gas chromatography and mass spectrometry, and computer-assisted tomography. All of these not only effectively complement traditional methods of obtaining historical information, but also often allow new insight into events of the past, to reconstruct lost pages of history.

Natural sciences methods are primarily used to study material of various cultural heritage objects. By analyzing the data of such material studies, historians and art historians can more accurately determine the likely place and time artifacts were created, the technology of their production and distribution path, and possibly the initial appearance and subsequent changes during use, storage, and restoration. Therefore, this line of research can be defined as historical materials science.

Since the 1950s, many museums, historians, and archaeologists worldwide have been increasingly cooperating with their colleagues in the natural sciences. In Russia in recent decades, there has also been a growing demand for cultural heritage studies in

cooperation between humanitarian scholars and natural science institutes and laboratories.

At the National Research Center Kurchatov Institute, such studies began with the creation of the Laboratory of Natural Scientific Methods in the Humanities in 2015. The colossal experience of materials science accumulated over almost eight decades at the Kurchatov Institute can now be applied to cultural heritage studies, developing a fundamentally new direction in historical materials science.

This thematic issue presents a number of interesting papers from the country's leading museums and humanitarian institutions: the Institute of Archeology RAS, State Historical Museum, Pushkin State Museum of Fine Arts, Crimean Federal University, Russian National Library, etc.

The scope of the articles is very broad: from genetic analysis of mummies, a comprehensive study of ancient Russian ink and various metal artifacts, to paleoanthropological studies and determination of organic remains in ancient artifacts using various methods.

Without a doubt, each article is a fascinating read. I also hope for expanded cooperation between the humanities and natural sciences in historical materials science, as well as new illuminating results and discoveries in this interesting field.

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