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A Comprehensive Study of Ruined Mural Fragments from the 12th Century Church of Transfiguration of Our Savior on the Nereditsa Hill (Veliky Novgorod, Russia)

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The church of Transfiguration of Our Saviour on the Nereditsa Hill is one of the earliest Old Russian buildings, raised in 1198 by order of Knyaz of Novgorod Yaroslav Vladimirovich. The church was included in the UNESCO list of World Heritage sites in 1992. During the World War II, the monument was partially destroyed. As a result, almost the entire painting crumbled, with the exception of a few fragments. The comprehensive architectural restoration of the church was completed in 2004. Currently, the unique ruined wall paintings need to be studied in more detail in order to carry out work on their restoration. A total of 27 mural fragment were examined in the Sector of Interdisciplinary Research of Cultural Heritage (FLNP JINR, Russia). According to restorers, these fragments date back to the 12th century. Neutron activation analysis with further statistical treatment did not reveal the separation of plaster samples into different groups. A complex of analytical techniques was used to study color layers: X-ray fluorescent analysis, Raman spectroscopy, optical and polarized microscopy. Red and yellow ochre, green earth, lapis lazuli, soot, and lime white were used in the painting of the church. This set is typical for Old Russian painting of that time. Thus, results of comprehensive analysis confirmed that all the samples studied date back to the 12th century.

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