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Determination of the chemical composition of medieval ceramic vessels found in Bolgar using the neutron activation analysis

Tuesday, 16 April 2019 17:00 (2 hours)

The work is devoted to the first application of neutron activation analysis (NAA) to determine the chemical composition of the molding mass of archaeological ceramics. For the research of the Institute of Archeology of the Russian Academy of Sciences, 15 fragments of medieval vessels were presented from the city of Bolgar, the capital of Volga Bulgar (now the territory of Tatarstan). NAA was carried out by a group of NAA installations of IREN in the Frank Laboratory of Neutron Physics Joint Institute for Nuclear Research. The results obtained, previously unknown to researchers of medieval ceramics.

Prospects for the use of NAA in archeology are promising due to the fact that this method is multi-element and has a sensitivity exceeding the sensitivity allows to obtain data on the chemical composition of ceramic materials. A neutron activation analysis of relative and absolute methods was conducted, as well as an X-ray fluorescence analysis of the samples were obtained.

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