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Preliminary result of investigation of the isotope composition of fibula from Podbolotyevsky burial ground (10th century AD) by method of neutron spectroscopy

Neutron Resonance Capture Analysis (NRCA) can be applied for nondestructive determination of the isotopic composition of samples. The method is based on the registration of neutron resonances and the measurement of the yield of reaction products in the resonances. The resonance energies are known practically for all stable nuclei and the set of energies does not coincide completely for any pair of isotopes. It allows determining the isotope composition. We received an application from Institute of Archaeology Russian Academy of Sciences to make the analysis for fibula from Podbolotyevsky burial ground (10th century AD) in the Vladimir Region. The archeological funeral monument was found at the end of the 20th century. Within 3 years of excavations the experts have found nearly 7000 artifacts, from jewelry to weaponry. These are hundreds of graves of the Finno-Ugric tribe of Murom that lived downstream River Oka from the 10th century and was engaged in hunting, crafts and agriculture. For the last three years scientists examined 181 graves and 20 more are being studied at present. One of the artifacts was investigated at IREN facility in Frank Laboratory of Neutron Physics

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