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## Application of neutron resonance capture analysis for determination of isotope composition of fibula from Podbolotyevsky burial ground (10th century AD)

Neutron resonance capture analysis is based on the registration of neutron resonances in radiative capture and the measurement of the yield of reaction products in the resonances. The resonance energies are known for practically all stable nuclei, and the set of energies does not coincide completely for any pair of isotopes. It allows determining the isotope composition. To test the capabilities of this method such investigations were carried out in collaboration with Institute of Archaeology RAS at the Intense Resonance Neutron source (IREN) in Frank Laboratory of Neutron Physics for the fibula from Podbolotyevsky burial ground 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. The result of the analysis can be used for the identification a territory where the fibula was made.

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