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Determination of the elemental composition of archaeological objects by neutron activation analysis (NAA) at the IREN facility and the IBR-2 reactor of the Frank Laboratory of Neutron Physics (FLNP) of the Joint Institute for Nuclear Research (JINR).

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NAA of human remains of the XVI-XVII centuries from the Moscow Kremlin necropolises, Russia and medieval glass bracelets found at the Dubna settlement, Russia, was carried out at the FLNP basic facilities –the IREN research facility and the IBR-2 pulsed fast reactor. We studied the rib fragment from the burial place of the son of Tsar Ivan the Terrible, Tsarevich Ivan Ivanovich; the rib fragment from the burial place of Prince Mikhail Vasilyevich Skopin-Shuisky; and elements of hair of the first wife of Tsar Ivan the Terrible, the first Russian Tsarina Anastasia Romanovna. The results of the elemental analysis of human remains, primarily arsenic and mercury, made it possible to clarify the death circumstances of some members of the Russian nobility. The elemental composition of the glasses made it possible to determine presumably the places of production of glass bracelets.

NAA at FLNP JINR is carried out using the automation system for measurement of spectra, which includes a high-purity germanium detector with spectrometric electronics, a sample changer, a control software and the NAA database.

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