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Archaeometry at MLZ's PGAA-facility. Spectrometry and structure visualization of Gallo-Roman cultural heritage objects with PGAA and Neutron Tomography

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Thanks to the latest developments in neutron sources and advancements in digital signal processing, the capabilities of available gamma spectrometry and neutron imaging sights have significantly improved during the last decades. Instrumental neutron techniques such as Prompt Gamma-ray Neutron Activation Analysis (PGAA) and Neutron Tomography (NT) are effective methods to obtain chemical compositions with good detection limits or visualize internal structures within a sample. As non-destructive analysis methods, they are especially suitable for the investigation of cultural heritage objects and are therefore attractive for the field of archaeometry.
We report on the unveiling and analysis of the insides of various sealed amulet capsules and vessels of the Roman-Germanic Museum (RGM) Cologne using these methods in combination at the PGAA facility of the Heinz Maier-Leibnitz Center (MLZ).

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