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Cultural-heritage research at the Budapest Neutron Centre

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Since the launch of its user access program in 1999, the Budapest Neutron Centre (BNC), has always been a key promoter of the collaboration between the cultural heritage domain and neutron scientists. The success of many EU-funded transnational access (TNA) programs (NMI3, NMI3-II, CHARISMA, IPERION CH) as well as the ANCIENT CHARM project highlighted the relevance of the element analysis, imaging and scattering in the non-destructive characterization of valuable artifacts and resulted in over hundred publications. The cultural-heritage-specific access projects promote the multi-technique approach, i.e. to coherently utilize multiple - often complementary - instruments located in a single campus, or even at multiple access providers, in order to answer a specific CH question.

When applying separate instruments at different beamlines, however, the sampling volumes are not necessarily coincident and the penetration depths of the various radiations might also differ, so there is a clear advantage to integrate multiple functionalities into a *single instrument* and analyze the object at once at the same beamline. This is routinely done at our NIPS-NORMA station with position-sensitive element analysis and cold-neutron imaging (PGAI-NT), offering significant synergies at the data analysis and interpretation stage.

This lecture presents the recent technical, organizational efforts and the significant results made at the BNC using this multi-technique approach.

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