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Neutron imaging applications in cultural heritage at ISIS

Thursday 23 March 2023 11:00 (30 minutes)

Scientific investigations and archaeometric studies have played a major role in the field of archaeology, especially with regard to materials that have been transformed through human activity, like metals. In this talk, I will give an overview of how neutron imaging can be useful to improve our knowledge of ancient manufacturing processes of metals, their technological evolution over the centuries, and how they degrade over time. Neutron imaging techniques are used to shed light on the inner structure of composite materials and their manufacturing techniques, but also can be used for elemental investigations. In addition, the combined use of X-rays and neutrons provides additional element-dependent information which is fundamental in case of multi-phase objects.

The talk will give an overview of the imaging case studies carried out at the ISIS Neutron and Muon Source in the field of Heritage Science, spanning from Roman coins to Egyptian artefacts.

Author: Dr FEDRIGO, Anna (STFC)

Co-author: SCHERILLO, antonella (STFC-ISIS)

Presenter: SCHERILLO, antonella (STFC-ISIS)

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