

# AUTHENTICATION IN ART

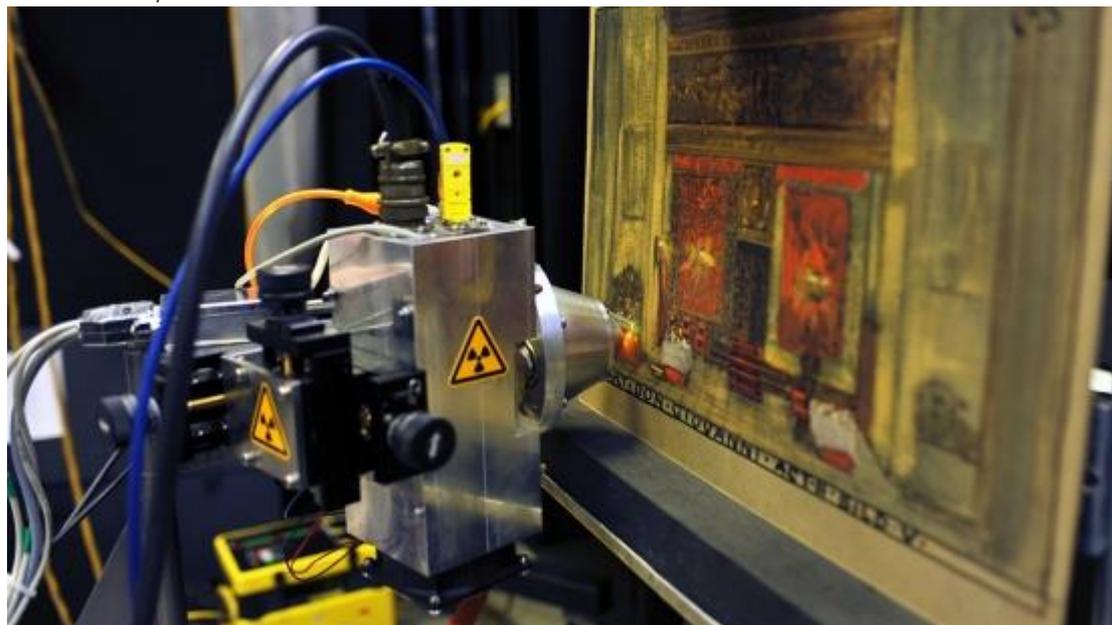
AiA Art News-service



## New Research Project to Focus on Use of Nuclear Techniques in Forensic Science

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Matt Fisher, IAEA Office of Public Information and Communication



An X-ray fluorescence (XRF) spectrometer is used to analyse a painting at the Kunsthistorisches Museum in Vienna. (Photo: D. Calma/IAEA)

Helping to solve criminal cases, identify art forgery and catch food adulteration are the goals of a new research project using nuclear techniques.

Experts from around the world, representing both practitioners of nuclear analytical techniques as well as forensic science stakeholder communities, met in Vienna last week to discuss the objectives of a new Coordinated Research Project on utilizing nuclear analytical techniques in forensic science. The project aims to determine how existing forensic methods can be complemented by the use of nuclear techniques to aid the work of police investigators, courts and customs officials.

The project, which will be four years in length, is divided into three main areas of focus: glass analysis, food authentication and cultural heritage. Nuclear analytical techniques may be effective tools for a variety of forensic purposes, such as the analysis of glass shards from a crime scene to support the prosecution of hit-and-run cases, the examination of food composition to detect adulteration and the investigation of art forgery.

“This is the first Coordinated Research Project that the IAEA has been involved in that focuses on the use of ion beam accelerators and research reactors for forensic analysis,” said Aliz Simon, an IAEA nuclear physicist specializing in accelerators. “We aim to identify new practical applications for these technologies, build capacity and facilitate networking in this area.” The project will also develop synergies between accelerator and research reactor techniques for forensic purposes, she added.

During the week-long research coordination meeting, physicists from several countries described the nuclear analytical techniques they have used in case studies to determine their feasibility for forensic applications. The techniques, including particle-induced x-ray emission (PIXE) and neutron activation analysis (NAA), have been used to analyse the elemental composition of paintings as well as the origin of glass samples, among other applications.

“There is great potential to interact with forensics practitioners to assess their needs and see how better solutions can be developed,”

said Marco Musumeci, a programme officer with the United Nations Interregional Crime and Justice Research Institute (UNICRI). UNICRI could support the needs assessment phase and engage stakeholders in support of this project, he added.

The project participants formed three working groups and established a work plan to be carried out over the next four years. They will meet again in 18 months to review progress on the endeavour.

