



IAEA

International Atomic Energy Agency

Atoms for Peace

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Protecting cultural heritage artefacts in the Mediterranean region

The challenge...

The Mediterranean countries have a rich cultural patrimony, with objects from many different periods and cultures. Nuclear techniques can play an important role for the study, restoration and conservation of cultural heritage, helping to determine the age, origin and production technology of these objects. Such techniques can also verify authenticity, identify fraud and illegal trafficking, and provide information on the composition of original materials.

Nuclear based techniques, such as X ray fluorescence spectroscopy (XRF), are used to study works of art. Priceless pieces – from Cellini's *Saliera* to Michelangelo's *David* – have been analysed using these methods. As any movement to a work of art can be potentially catastrophic, the goal of art restorers is to minimize disturbance during analysis. The portability and unobtrusive nature of XRF reduces the risk of damage to the piece while it is being studied.

The project...

This project assisted existing laboratories using nuclear techniques in the field of cultural heritage activities and promoted the potential use of nuclear techniques in the study, restoration and protection of artefacts. A regional network of nuclear scientists and conservation professionals was established in order to share experience, knowledge and analytical capabilities.

The impact...

This project successfully attracted the interest and participation of conservation specialists, archaeologists, curators and nuclear scientists. It has promoted the application of nuclear techniques in the field of cultural heritage protection through organized regional training courses and workshops. Nuclear scientists and conservators were able to share knowledge related to the challenges of cultural heritage protection and conservators now understand how effective nuclear techniques can be in their work as artefact preservationists. The results of the project will extend into the future as cultural heritage artefact protection will be enhanced through nuclear analysis techniques.



Using XRF to study Cellini's Saliera



IAEA developed mobile XRF spectrometer