



Sustainable Cultural Heritage Conservation: Green Nuclear Physics for Non-invasive Approach to the Conservation and Preservation of Cultural Heritage Artifacts

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Message from the Guest Editor

The use of nuclear physics techniques in cultural heritage conservation is a relatively new field of applications known as 'green nuclear physics'. This approach involves non-destructive techniques to study, to analyze and also to treat the cultural artifacts by extending their life and preventing their further damage.

Nuclear physics techniques are viable as sustainable applications of pigments analysis in paintings. They allow conservators to identify compositional elements and the original production techniques of assets and to study the structure of artifacts in a non-invasive way.

Green nuclear physics is fully sustainable in processes of biodegradation removal: ionizing radiations, such as X- and Gamma-rays or electrons, can penetrate deep into the material and break the chemical bonds of deteriogens slowing down the decay process.

Overall, the use of green nuclear physics in cultural heritage conservation is a highly sustainable approach and holds great promise as a non-invasive and effective way to conserve and preserve our cultural heritage for future generations.





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