



Contribution ID: 152

Type: Poster

On-going gamma radiation processing for disinfestation and consolidation of cultural heritage

Thursday, 3 September 2015 16:30 (1h 30m)

Cultural heritage represents one of the most important factors for human kind. First, it is the legacy translated into accomplishments that people have made along their history, a thing that human kind can be proud of and a reason for continuous development. Last but not least, it shows the level of civility and progress reached along its existence. Considering this, salvation, consolidation and preservation of cultural heritage become a mandatory objective. Cultural heritage is inefably degrading due to physical, chemical and biological factors. If physical and chemical degradation can be delayed by controlling the storage conditions, the biological attack, once installed, can be stopped only by a drastic intervention. IRASM department continuously dedicates a part of its activity to this subject, dealing with different materials such as paper, wood, textile and even leather and parchment. Here, it is used ionizing radiation, a treatment that has the advantages of: the certainty of biocide effect, fast treatment, mass treatment, no harmful chemicals and residues. The research is conducted within projects and collaborations with Romanian museums and private holders of artifacts. The aim of this paper is to present the recent activities and progress that IRASM has done in this field, basically on wood consolidation, leather and textiles. Nevertheless, along with progress new challenges arise, one determined by the complexity and diversity of the constituents of cultural heritage items, that lead to the question if the radiation induces a supplementary degradation in the material.

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Session Classification: Poster