

Preservation and conservation of information contained in glassy materials from cultural collections with processing by ionizing radiation

Tuesday, 14 June 2022 17:10 (20 minutes)

Glass-based photographic materials are commonly found in historical cultural heritage collections. Inadequate storage conditions for these materials lead to problems of biodeterioration, mainly by fungi.

Processing by ionizing radiation with electron beam has a biocidal effect to combat fungal contamination. However, a known undesired effect on glassy materials is increased opacity which affects the readability of images on photographic glass negatives.

In this way, the study proposes a methodology to minimize the darkening effects of the glasses that are subjected to irradiation.

For this work, glass samples were subjected to irradiation with electron beams at doses of up to 25 kGy, under different controlled temperature conditions, and the effects analyzed by UV-visible spectrophotometry and colorimetry analysis.

Primary authors: NAGAI, Maria Luiza; VASQUEZ SALVADOR, Pablo Antonio (Nuclear and Energy Research Institute –IPEN/CNEN/SP, Brazil)

Presenters: NAGAI, Maria Luiza; VASQUEZ SALVADOR, Pablo Antonio (Nuclear and Energy Research Institute –IPEN/CNEN/SP, Brazil)

Session Classification: TC Latin-America

Track Classification: Track 3: Safe analysis of heritage objects