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FTIR/FT-Raman spectra and colour shifts used to study gamma irradiated experimental models of painting

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Color changes and other modifications in the physical chemical properties of materials induced by gamma irradiation are feared by cultural heritage responsible committees and they have to be evaluated objectively and precisely (Manea et al. 2012). The present study follows the changes of gamma irradiated experimental models of painting with non-destructive and non-contact spectroscopic analytical techniques which are the only ones accepted by the conservators/restorers community. Molecular structure characterization was performed by FTIR/Raman spectroscopy using a Bruker Vertex 70 class equipped with two mobile probes: a MIR fibre module for MIR probes (with LN2 cooled detector) and a Raman RAM II module (LN2 Ge detector) with a RAMPROBE fibre. Colour was measured by a portable reflectance spectrophotometer (Miniscan XE Plus, HunterLab) in diffuse/8° geometry with a beam diameter of 4 mm and specular component included (Manea et al. 2014). This work was partially supported by the project ETCOG, Contr. C3-05 IFA-CEA/2012.

[1] M.M. Manea et al., Rad. Phys. Chem. 81, 160 (2012).
[2] M.M. Manea, C.D. Negut, M. Virgolici, I.V. Moise, Proceedings of ICAMS International Conference, Bucharest, Romania, October 23rd-25th, INCDTP-ICPI ROMANIA Editura CERTEX, 533 (2014).

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