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SINBAD-IR beamline at DAFNE-Light: applications and developments of FT-IR spectroscopy in the field of Cultural Heritage

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The SINBAD-IR beamline at the INFN-Frascati National Laboratories, uses the synchrotron radiation produced by the DAΦNE electron ring, and conventional IR sources, for spectroscopy and imaging experiments targeting materials' characterization across the infrared spectral range, from THz to NIR [1].

In the Cultural Heritage field, FT-IR spectroscopy is often used to study the spectral response of materials, including the characterization of paintings, the evaluation of the effectiveness of cleaning treatments, and the assessment of artworks' conservation states [2,3]

The high precision and accuracy of IR spectroscopy, combined with its non-destructive nature and the possibility of working on very small samples makes it the ideal technique for the chemical and mineralogical characterization of materials constituting artworks. Some of the applications carried out at the synchrotron radiation laboratory on Cultural Heritage materials, highlighting the advantages of the technique and future developments [4] will be reported.

References

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- [3] M. F., La Russa, S. A., Ruffolo, G. Barone, G.M., Crisci, P. Mazzoleni & Pezzino, A. (2009). The Use of FTIR and Micro-FTIR Spectroscopy: An Example of Application to Cultural Heritage. *International Journal of Spectroscopy*, 2009(1), 893528.
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