

From ceramics and glasses to mortars and stones: using synchrotron radiation to study cultural heritage

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The use of Synchrotron Radiation to study cultural heritage, either through objects with museum interest or materials from historical monuments is no longer a novelty. Advanced non-destructive characterization techniques to understand degradation phenomena, ageing mechanisms and ancient manufacturing techniques is now a well-established trend.

Profiting from the properties of synchrotron radiation and using large scale facilities such as ESRF (European Synchrotron Radiation Facility, Grenoble, France), BESSY (Berliner Elektronenspeicherring-Gesellschaft für Synchrotronstrahlung, Berlin, Germany) and former LURE (Laboratoire pour l'Utilisation du Rayonnement Synchrotron, Orsay, France), it was possible to study a great diversity of materials and objects of cultural value from different ages and provenances through X-rays.

Synchrotron radiation sources available at these large-scale facilities provide powerful chemical and structural characterization tools such as micro X-ray fluorescence and X-ray absorption spectroscopies (XANES and EXAFS).

Different case studies will be presented regarding the variety of materials studied by a group of Portuguese researchers from the past two decades (ceramics, glasses, inorganic pigments and lithologic materials).

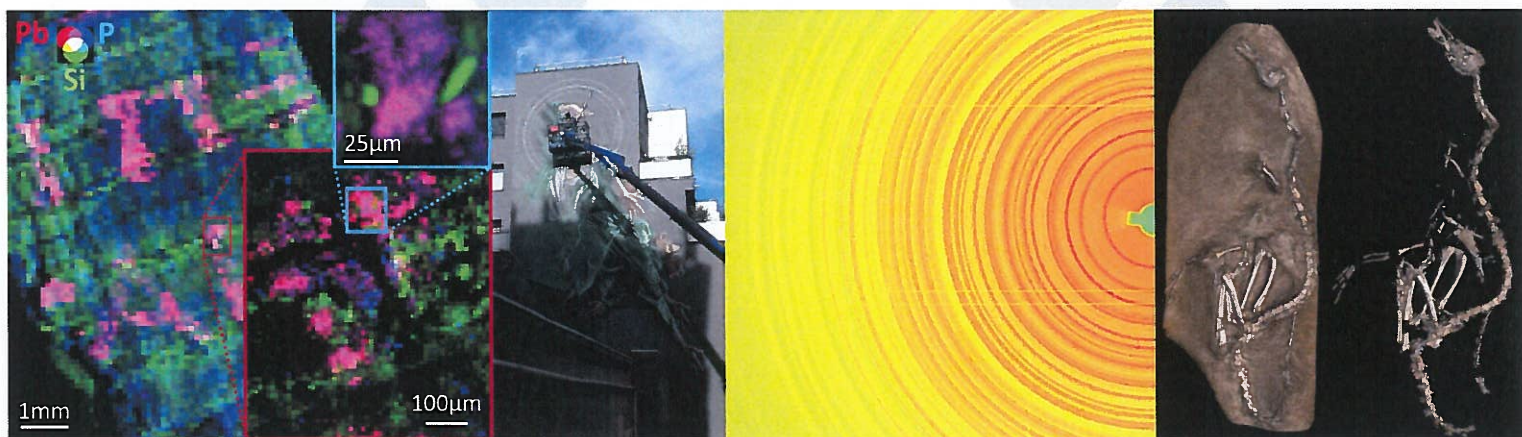
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You work in cultural and natural heritage and want to discover freely available analytical and imaging techniques, to reveal hidden secrets in the chemical composition and structure of ancient materials?

You already use synchrotron radiation techniques and want to be informed about the latest developments in the context of the ESRF upgrade? You would like to be trained in imaging and analytical software packages?

Sign up for the **Cultural and Natural Heritage ESRF-EBS workshop**



January 22-24, 2020
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