Symposium: Y

WORKSHOP - Protecting and securing our cultural heritage: diagnostics, characterization, conservation and restoration

27 May 2013 - 28 May 2013 - 29 May 2013

Subject

Session: Diagnostics and Characterization : Michael Stuke

12:00

Diagnostics of glaze pathologies in ancient (XVII-XVIII cents.) decorative blue-and-white ceramic tiles with the aim of implementing innovative conservation techniques

Authors: Teresa P. Silva, Maria-Ondina Figueiredo, Maria-Alexandra Barreiros, Maria-Isabel Prudêncio


Resume: Decorative panels of ceramic glazed tiles configure a valuable cultural heritage in Mediterranean Countries and their preservation requires the development of a systematic scientific approach. Environmental conditions are responsible for the degradation of exposed ancient tile panels originating various pathologies, namely related with the development of micro-organisms and resulting in a very common effect observed nowadays in panels manufactured centuries ago - glaze surface staining. The present work describes a study about the nature of green stains appearing at the surface of Portuguese blue-and-white tile panels from the XVI-XVIII centuries, namely Vista de Lisboa (depicting the city before the great destruction caused by the 1755 earthquake) and Cura da Cego, both belonging to the collection of the National Tile Museum (MNAG) in Lisbon. Tile fragments were directly irradiated using non-destructive but invasive techniques - X-ray fluorescence spectrometry with a wavelength-dispersive system (WDXRF) for chemical characterization of the tile glaze and X-ray powder diffraction (XRD) to assess the phase constitution of both tile glaze and the ceramic body. Obtained results are reported and discussed, as a preliminary step for testing an innovative decontamination technique, particularly suitable for overcoming such tile pathologies, making use of gamma radiation.

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Session: Conservation and Restoration : Giacomo Chiari

14:30

Novel approach of mural painting materials identification by LIBS (Laser Induced Breakdown Spectroscopy)

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Resume: Libs (Laser Induced Breakdown Spectroscopy) is well known as elemental technics for detection of solids, liquids or gas. However, it can be used for molecular characterization and some new application can be approach be this way. The laboratory of historical monuments (LRMH, France) was the first laboratory depending from the French ministry of culture to develop (LIBS) in order to identify