

## IDENTIFICATION OF OLD WALL PAINTING MATERIAL IN IRANIAN SAFAVID BUILDING, ISFAHAN

A. Sasani<sup>(1)</sup>, F. C. Petrucci<sup>(2)</sup>, L. Volpe<sup>(1)</sup>, C. Vaccaro<sup>(3)</sup>

1. PhD student in Science and Technology for Cultural Heritage and Archaeology, TekneHub, University of Ferrara, Italy, [ssmht@unife.it](mailto:ssmht@unife.it)
2. Department of Physics and Earth Sciences, INFN and TekneHub, University of Ferrara, Italy, [ferruccio.petrucci@unife.it](mailto:ferruccio.petrucci@unife.it)
3. Department of Physics and Earth Sciences and TekneHub, University of Ferrara, Italy, [vcr@unife.it](mailto:vcr@unife.it)

For any painting restoration and conservation project, construction of painting and understanding of its materials must be considered. So specially in old wall paintings the materials must be identified. In this article the material and pigments in one building belongs to 17<sup>th</sup> century in Isfahan will be analyzed.

The 17<sup>th</sup> century is the time of new changes in Iranian relationship with west and specially European countries and Isfahan was the capital of Iran in that era.

This research can be very important because the building is one of the first buildings in Iran which shows the affection of European styles in decoration and paintings. So by analyzing of its wall painting's material, possible differences between pigments in this building with other traditional buildings will be identified. And probable usage of pigments with European origin can explain the great trade relationship between Safavid Iran and Europe in 17th century. Also through this experiments, material choice for conservation and restoration project will be more satisfying.

The aim of project will accomplish by these analyses: Micro Raman spectroscopy, XRF (X-ray florescence), XRD (X-ray diffraction) and FTIR (Fourier transform inferared spectroscopy).

*Keywords: Technical analyses, wall painting material, pigments, European style, Safavid era, Isfahan.*

### References:

- Eleanor G. Sims, 'Late Safavid Painting: The Chehel Sutun, The Armenian Houses, The Oil Paintings', in *Akten des VII. Internationalen Kongresses für Iranische Kunst und Archäologie, München 7.-10. September 1976* (Berlin: Dietrich Reimer Verlag, 1999).
- Jalil Jokar, "Preparation methods of pigments in art and painting" , The Iranian Academy of Arts, Tehran, 2006.
- Jens Bartoll, "The early use of Prussian blue in paintings", 9th International Conference on NDT of Art, Jerusalem Israel, 25-30 May 2008. [www.ndt.net/search/docs.php3?MainSource=65](http://www.ndt.net/search/docs.php3?MainSource=65).

VIII Congresso Nazionale di Archeometria  
Scienze e Beni Culturali: stato dell'arte e prospettive  
Bologna 5 - 7 Febbraio 2014

- Johnston-Feller R., "Color science in the examination of museum objects– nondestructive procedures", The Getty Conservation Institute, Los Angeles (2001).
- K. Castro, M. Perez-Alonso, M. D. Rodriguez-Laso, L. A. Fernandez , J. M. Madariaga , On-line FT-Raman and dispersive Raman spectra database of artists' materials (e-VISART database), Anal Bioanal Chem (2005) 382: 248–258.
- Layla S. Diba "Invested with Life: Wall Painting and Imagery before the Qajars" Iranian Studies, Vol. 34, No. 1/4, Qajar Art and Society- JSTOR (2001), pp. 5-16 (Visited on Jan 21, 2013).
- Manouchehr Danesh Pazhooh, "Investigation in Itineraries in Safavid era", Isfahan University and The Iranian Academy of Arts, Tehran, 2006.
- Rudi Matthee, "The Safavids under Western Eyes: Seventeenth-Century European Travelers to Iran", Journal of Early Modern History 13 (2009) 137-171.
- Scientific Examination of Art- Modern Techniques in Conservation and Analysis, National Academy of Science, Washington, D.C., March 19-21, 2003, the National Academies Press, 2005.
- The Artist's Manual of Pigments, Standage, London: Printed by J. S. Virtue and Co., Limited, City Road, Second Edition 1886.