Graduiertenkonferenz 2012 | Akademie der bildenden Künste Wien
Datum | 26.06.2012, 10.00 h - 20.30 h
Ort | Akademie der bildenden Künste Wien, Schillerplatz 3, 1010 Wien, M13a

3 p.m.
Dott.ssa Valentina Pintus
Institute for Natural Sciences and Technology in the Arts
Analysis of modern paint materials and their UV ageing studies
Moderation: Univ.-Prof. Dipl.-Arch. Michelle Howard
Presentation in English

From the second half of the 20th century on and especially nowadays, different synthetic materials have been used as binding media for work of arts by many artists. It is a known fact that some of these materials show deterioration processes causing problems in the conservation and preservation of such artefacts. In order to study the degradation, especially photo oxidation processes of these synthetic materials, the knowledge of their chemical behaviour in combination with pigments is required. In this research project pure synthetic materials but also mixed with different inorganic pigments have been studied. Especially the influence of UV light on different acrylics, polyvinyl acetates and alkyds, both commercial and pure/colors mixed materials, has been investigated. In order to identify and characterize those materials before and after the UV-exposure and to understand their chemical behavior, analyses with the single-shot and double-shot technique of the pyrolysis-gas chromatography/mass spectrometry (PY-GC/MS), Fourier transform – attenuated total reflection (FTIR-ATR) as well as with the colour measurements, have been carrying out. Particular attention has been paid on the double-shot technique of the Py-GC/MS, which enables two analytical analyses on single samples. Before UV exposure, the Py-GC/MS analyses of the investigated polymers identified different types of acrylic emulsions. After UV exposure, several alteration processes with consequent formation of volatile compounds or new products were observed by both techniques. In particular, the double-shot mode of Py-GC/MS enabled the detection of volatile compounds or new products in a more precise and detailed way than with the single-shot mode

Dott.ssa Valentina Pintus is a Conservation Scientist, about finishing her PhD with the thesis title “Analyses of modern paint materials and their UV ageing studies”. In close cooperation with the Institute of Science and Technology for Art (ISTA) at the Academy of Fine Arts, Vienna, and the Vienna University of Technology (TU), her PhD thesis is supervised by Prof. Manfred Schreiner and funded by Region of Sardinia, Italy (project “Master and Back”, programma alta formazione, anno 2009). Dott.ssa Valentina Pintus has a solid interdisciplinary knowledge based on natural, physical and applied sciences disciplines for the characterization of the materials of a work of art, the degradation and the manufacturing techniques of the cultural heritage, as well as on conservation ethics, art history, archaeology, past technologies etc.
She obtained her Master’s Degree in “Science and Technology for Conservation and Restoration of Cultural Heritage” with the summa cum laude at the University of Bologna, Italy. Within the Museum Project 2006 approved by the Region Emilia-Romagna (Italy) in cooperation with the Institute of Cultural Heritage (Instituto per i Beni Culturali, IBC), she carried out her Master’s thesis on the study of the polychrome wood painting of Madonna in Trono attributed to Nicolò Rondinelli (XV cent.), combining the scientific part with the restoration aspect, due to a 6 months internship at the “Laboratory of Restoration p.l.c.” Ravenna, Italy, supported by the “Fondazione Flaminia”.
Her strong interest in science for cultural heritage started with her Bachelor’s Degree in “Technology for Conservation and Restoration for Cultural Heritage” at the University of Engineering, Cagliari, Italy. During the Erasmus programme (European Region Action Scheme for the Mobility of University Students) of an entire semester at the Institute for Engineering Geology – Vienna University of Technology – she wrote her Bachelor´s thesis “Conservation and Restoration of Neogene Arenites of Austria”, based on the study of the physical properties of some Neogene arenite from Austria (St. Margarethen from Burgenland, Zogelsdorf from Niederösterreich, Aflenz from Styria), their deterioration processes (physical, chemical and biological decomposition) and on the optimizing methods and agents of consolidation for this type of stone.
Dott.ssa Valentina Pintus is author of several international peer-reviewed papers about the ageing studies of organic synthetic materials used in modern and contemporary art and she attempted numerous conferences of chemistry for Cultural Heritage at international level. She is also involved in research cooperation with the Getty Conservation Institute (GCI) of Los Angeles, USA, as well as with the Department of Chemistry and Nanostructured Interfaces and Surfaces-Centre of Excellence, University of Torino, Italy, where she spent a period of time doing thermal analysis on acrylic paints.