## Foreword

Gilding is a very ancient tradition of surface decoration with gold leaf on different supports and during history craftsmen (e.g. sculptors and painters/gilders) were able to reach a high level of skill in the techniques of application and finishing. Ancient treatises and work contracts signed for the decoration with gold and/or silver leaf of the surface of altarpieces, furniture, panel paintings and frames from religious heritage give us information how the substrates were prepared to receive the leaf and which kind of surface decorative techniques were used after gilding.

Recent studies on the reproductions in the laboratory of ancient gilding/silvering recipes show to which extent these ancient recommendations were followed in the real practice of gilders and also unveil other aspects of the history of the art-objects, such as interventions posterior to its creation moment, re-polychromy and/or re-gilding, restorations and other kind of treatments.

Based on analytical findings, the conservator-restorers are called to propose solutions for the restoration of these objects and sometimes the scientist can be of help in not only providing the analytical characterization results but also in advancing new materials and tools for the intervention, such as compatible and easily detectable alloys and ecological biocides. In many cases, unfavorable preservation conditions and the lack of interest for creating a proper and controlled environment around these objects, led to degradation and deterioration of materials present in the gilded composites. Among the main decaying factors, the biological agents (fungi, wood boring insects) can provoke irreversible damage. The scientists are called again to help in identifying the responsible for this kind of actions and find solution for stopping the attack and prevent further degradation and deterioration. Green, compatible materials from biotechnological field can be thus proposed and tested.

The need of interdisciplinary and complementary approaches for the study, repair and prevention of damage in gilded works of art is already a methodological pattern in Heritage and Conservation Science. Therefore, the interactions between art historians, conservator-restorers and scientists (chemists, biotechnologists, geologists, metallurgists etc.) are a key element of these studies and the dissemination of their results can become a platform of discussion and know-how exchange.

From this perspective, this Special Issue contains 11 papers, resulted from some of the presentations made during the third and fourth sessions of the first International Conference on Gilding Materials and Techniques in European Art – GILT-EnArt2015, held at the University of Evora between 25<sup>th</sup> and 27<sup>th</sup> of May 2015 and organized with the support of the Portuguese Foundation for Science and Technology (FCT-MCTES).

This Issue focuses on interdisciplinary analytical studies performed on altarpieces, sculptures, mural paintings and icons from Portugal, Goa, Spain and Romania, including also 2 papers on biological identification and biocide solutions for heritage objects such as gilded carved wood and 2 on reproducing ancient gilding recipes and proposing and testing novel alloys for gilding restoration. Thus, a whole range of scientific specializations from the Cultural Heritage field are represented around the topic of gilding/painting materials and techniques in the ecclesiastic artifacts. Another paper advances a proposal for a non-invasive multi-technique methodology to be applied during conservation-restoration intervention, choosing as case study the mural paintings from a Romanian church.

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