

Recent Advances in Characterizing Asian Lacquer

Teaching Note

Introduction

Recent Advances in Characterizing Asian Lacquers (RADICAL) is a workshop that presents complementary techniques and tools which can help scientists and conservators to acquire more detailed and accurate compositional information about lacquers, with the aim of better understanding lacquered objects and their manufacture, use and preservation.

The RADICAL workshop objectives are to:

- demonstrate newly developed protocols, and the kinds of information that can be gathered using these approaches and methods
- provide participants with tools such as a shared reference database and customized data evaluation software that can improve the capacity for characterization
- highlight the benefits that collaboration between scientists and conservators can provide
- identify pressing analytical and conservation issues and problems in the field, and priorities for future research

The Workshop

The five day workshop places an emphasis on application of new techniques to real lacquer samples. The workshop schedule from the 2013 workshop, held at Yale University, provides more detail on how the workshop is structured. RADICAL workshops have been held in the US, and there are plans to offer it in Europe and Asia.

The Getty's [ongoing research into lacquer](#) is a collaboration between the GCI and the J. Paul Getty Museum. Collaboration is a central theme in the workshop, which pairs conservators and scientists in research teams to study samples from lacquered objects from their own collections. The workshop presents a suite of complementary techniques including:

- a precision layer-by-layer sampling technique, and

Two complementary analytical procedures:

- Pyrolysis-gas chromatography/mass spectrometry with thermally-assisted hydrolysis and methylation (THM-Py-GC/MS) and
- microscopic examination of chemically-stained lacquer cross-sections

It also provides customized software and a database of marker (or reference) compounds that facilitate characterization.

Scientist/conservator teams use these techniques and tools to explore their samples and present their findings to the whole group for discussion. The week-long workshop concludes with wide-ranging discussions about the characterization and conservation of lacquer.

Pedagogy

Although general principles of lacquer manufacture and use are well known, ongoing research has highlighted that its historical use as an artistic medium is highly complex, and its deterioration mechanisms are not well understood. Consequently, improving the understanding of lacquer as a material and developing best practices for the conservation of lacquer are of the highest importance.



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Collaboration between scientists and conservators, which can direct research and interpretation and efficiently move research into practical application, is the best way to address this need.

The pairing of scientists and conservators in research team is fundamental to the teaching of the RADICAL workshops and makes the capacity of collaborative research to produce better results explicit and practical. The interest in facilitating communication at the interface of research and conservation practice is a cornerstone of the larger GCI initiative [Research into Practice](#) of which the RADICAL workshops are part.

The workshop is not limited to five days in the classroom and laboratory; participants engage with workshop teaching materials and with each other well in advance via a workshop website. Essential readings provide theory and new research, and videos are used to introduce participants to the workshop instructors and the theory and hands-on use of the techniques featured in the workshop. Participants also begin the practical work of preparing and documenting samples for use during the workshop and identifying primary research questions about the objects they are sampling.

Templates are an important tool used during the workshop. As documentation and data related to participants' lacquer samples are generated before and during the workshop they are entered into a standard (and very straightforward) powerpoint template which will eventually serve as the final report. This ensures that the results of all of the hard work by participants are presented in a comparable way and can be discussed meaningfully. On the final day of the workshop, conservator/scientist research teams present their findings using the template, which can also be easily converted to a poster format.

Participants retain access to the workshop website which includes a discussion forum and other features for sharing information, and to which new and updated information is added with each workshop. In addition, they are formally introduced to the larger community of other workshop participants. Over the course of the workshop series, which will take place in the US, Europe and Asia, the hope is to build a community of practice that is committed to sharing information and coordinated research.

Much of the material described above, including the workshop schedule, teaching outlines, instructional videos and templates is also made available to the public. This material is free to use and, considered together, provides a detailed picture of the RADICAL workshop. Further information about the [Recent Advances in Characterizing Asian Lacquers](#) workshops can be found at the Getty website.



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