



ARCHLAB ACCESS REPORT

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Call number/ period: 1st Call/ February 2016

Title of the ARCHLAB TNA Project: Metal threads in Hispano-Islamic textiles (11th-15th centuries): scientific investigation of the manufacturing techniques and comparative studies with metal threads in Sicilian-Islamic textiles and Lucchese medieval textiles.

Project Acronym: METHIT

User Group:

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ARCHLAB Provider/home institution: Rijksdienst voor het Cultureel Erfgoed (RCE), Amsterdam.

Contact person ARCHLAB Provider/home institution: Ineke Joosten

Period of the visit: Monday 3rd April 2017 – Thursday 6th April 2017

Date of the report: 20th June 2017

Background to the project:

The METHIT project focuses on the study of metal threads used in medieval Hispano-Islamic and Italian textiles from the 11th to the 15th century.

The main aim of the present research is gaining knowledge about metal threads manufacturing technology (materials and techniques) during the Middle Age in Italy and Spain, identifying differences and analogies between these productions, and clarifying, if it is possible, whether or not raw materials are imported or manufactured locally to reconstruct ancient trade routes.

At the end of the present investigation, I would like to demonstrate that the study of metal threads technology could help the chronological and geographical assignment of those textiles that show problems of attribution, as many medieval Spanish and Italian ones.

An important step of the methodology planned for this investigation is reviewing and collecting analytical data already achieved in this field of research.

In this connection, the ARCLAB Transnational Access enabled me to know the studies conducted on these materials by foreign institutions.

Questions addressed by Access:

The Cultural Heritage Agency of the Netherlands (RCE) is closely involved in supporting and improving art history, conservation and investigation of the cultural heritage.

An RCE section is located in the “Ateliergebouw” in Amsterdam. Here, among the various fields of research carried out, textiles preservation and investigation cover a relevant role.

Over the years, this institution became leader in the investigation and identification of textile dyestuffs mainly in historical ones, thanks to the contribution of the chemist Judith H. Hofenk de Graaf.

In this connection, I focused my visit in consulting and studying the available documentation on dyestuff analysis conducted on metal threaded textiles of the period and provenance of my interest and, when it was possible, reviewing the available data on metal threads analysis.

Main objectives of the project proposal:

In the past, textiles dating and provenance were established by subjective and indirect way, basing itself mainly on stylistic and technical evidences. Often, when we study historical textiles we have not any documentary evidence, which place them in a precise historical and geographical context. Moreover, in most cases, we only have fragments and not the whole artifact.

Nowadays, the results achieved by the investigation of textile materials and techniques are commonly used to support these attributions, because it is possible to relate the use of materials and techniques to a specific period of time and textile center.

In this connection, the study of metal threads technology could represent an important filter to assess date and provenance of each textile. Nevertheless, only the study of metal threads is not enough to classify and characterize a textile, if it is not integrated with the study of the other raw materials, as fibers and dyes, and the textile techniques.

The visit at the RCE was of my interest because I knew that its textile specialists have conducted large studies on dyestuff on metal threaded textiles. During my previous ARCHLAB visit to the IPCE, I

consulted their research on the characterization of Hispano-Islamic textiles of Al-Andalus. They conducted one of the most comprehensive study on natural dyes on Hispano-Islamic textiles.

By the end of this experience, it will be very interesting to make a comparison between the results of all this studies conducted on metal threaded textiles of medieval Spanish and Italian production.

Main achievements of the ARCHLAB visit:

During my first day in the RCE "Ateliergebow" I visited the institute and its different departments and laboratories. After a short presentation of the state of the art of my research to conservators, interns and doctoral students of the textile department, I visited the RCE textile laboratory, where the staff showed me some metal threaded textiles, which they were investigating.



Photo 1. The conservators, interns and doctoral students of the textile department showing me one of the metal threaded textile, which they were studying.

We paid special attention to some 17th century marine textiles, which are part of a collection discovered in a ship located on Burgzand Noord. In autumn 2015, the University of Amsterdam became involved in their study and conservation. In January 2016, two conservator trainees, Marijke de Bruyne and Sjoukje Telleman, studied the complete textile collection under the supervision of textile lecturer Emmy de Groot. At that moment, the collection consisted of 108 fragments and was divided into 26 different object groups. Many of the objects represent costumes, while many others are most likely interior textiles. Some of these fragments presents metal threads.



Photo 2. The 17th marine textiles with metal threads.

During the following days, I consulted an important and interesting publication « Silk, Gold and Crimson. Secrets and Technology at the Visconti and Sforza Courts.» about the silk fabrics produced in Lombardy between the 15th and the 20th century. The RCE was involved in this investigation in relation with dyes analysis. I focused my attention specially on the analytical study conducted on metal strips and sequins, fibres and yarns, and dyestuffs.

I also reviewed all their report on dyestuff analysis on metal threaded textiles, according to the manufacture and period of my interest. Among these reports, I found two interesting case studies of metal threads analysis:

- **Antependium, 15th century, coming from the Museum of Valkhof in Nijmegen:** it has been identified three typologies of *solid metal strips (gilded silver strips with an organic layer over the metal coating, gilded silver strips and silver strips)*;
- **Chasuble of the 16th-17th century, with an embroidery probably of the 14th- 15th century, coming from Rijkmuseum Het Catari Jneconvent in Utrecht:** it has been identified *solid metal strips (gilded silver strips)* and two typologies of *membrane strips (membrane thread with a silver coating, membrane thread with a gold and silver coating)*.

Ineke Joosten gave me the chance to observe the metal threads samples of the chasuble at SEM-EDS. We carefully investigate the three main typologies of metal threads identified from the embroidery of the chasuble. The analysis of the solid metal thread sample revealed the presence of a silver strip with a gold coating only on one side.

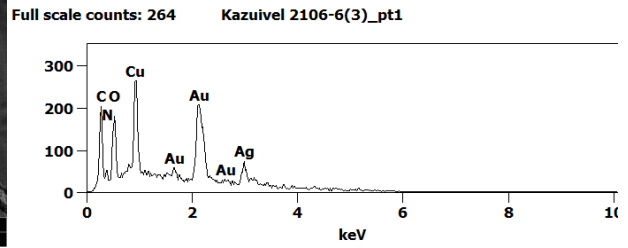
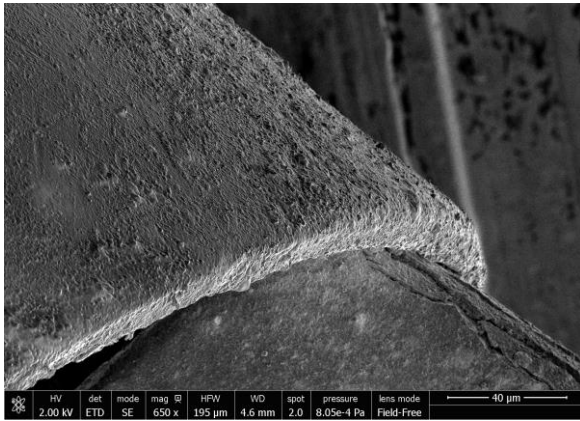


Photo 3. SEM image of metal strip sample and elemental composition of the metal coating.

One of the two membrane threads typologies identified is probably an animal gut strip coated with a silver layer.

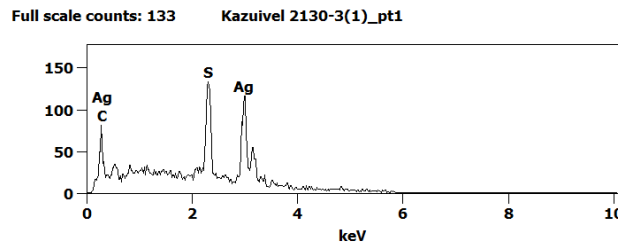
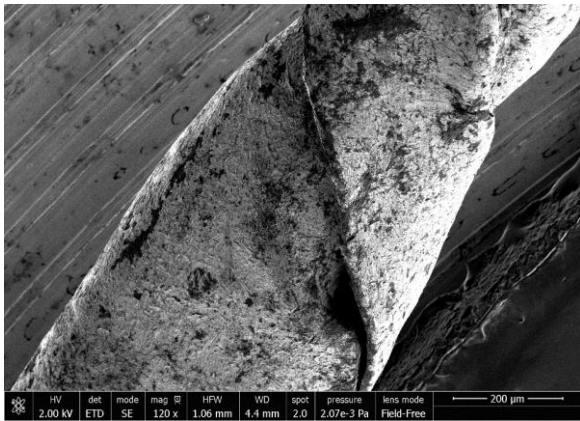


Photo 4. SEM image of one membrane strip sample and elemental composition of the metal coating.

While, the other membrane thread typology is probably an animal gut strip coated with a gold and silver layer.

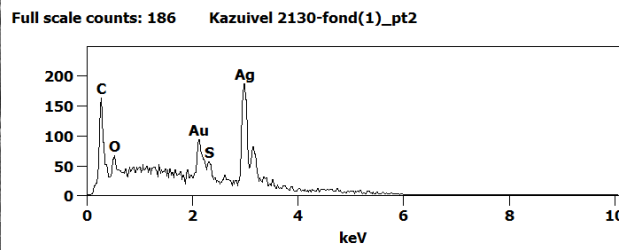
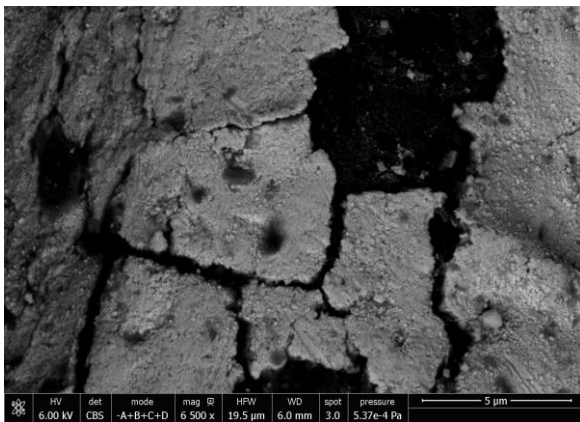


Photo 5. SEM image of another membrane strip sample and elemental composition of the metal coating.

Observing these samples I found interesting analogies with METHIT samples, in this connection I plan to include the data collected in my thesis to increase and enrich the *Scientific Reference Data Archive*, which I have designed throughout the review of specialized literature and the previous ARCHLAB visits.

For a complete comprehension of differences and analogies on metal threads manufacturing techniques, and to relate the choice of materials and techniques to a specific period of time and textile center, it will be necessary to analyse a large range of samples. For this reason, by the end of METHIT research, I would cross-reference my analytical results to those stored in this *Scientific Reference Data Archive*, in order to develop conclusions of scientific validity and evidence.

I think that the ARCHLAB TNA is an excellent experience for researchers, because it gave the chance to access to studies sometimes not published yet, and to exchange information and point of views with other specialized researchers, enriching in this way the knowledge about the subject of the own investigation.

Dissemination:

I plan to prepare a publication in an Int Journal in consortium with the ARCHLAB providers	
I plan to include the results in my thesis	X
I have no plans yet	

You are kindly invited to provide pictures that might be used to illustrate the advantages of ARCHLAB to the public.

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