

# History, Science and Digital Restoration

## Recovering the Past

The Main-altarpiece of the Espírito Santo Church,  
Évora

**Catarina Pereira**

Vanda AMARAL, Cátia RELVAS, Margarida NUNES, Sónia COSTA,  
Frederico HENRIQUES, Teresa FERREIRA, António CANDEIAS

GILT-EnArt2015 - Gilding materials and techniques in the European Art  
*Hercules Laboratory*  
*University of Évora, 27th of May 2015*



# Espírito Santo Church - Évora

## The main-altarpiece



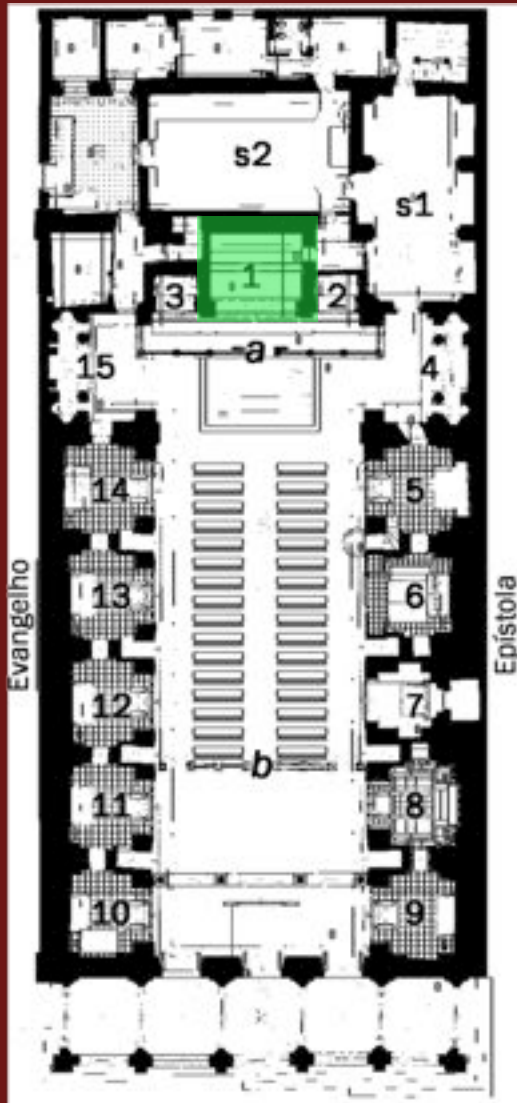
## Chronology



- 1559 - Papal Bull - Evora University
- 1567 - Church - First stone
- 1574 - First Mass
- 1631 - Polychrome tiles - main-Chapel
- 1759 - Suppression of the Jesuits from the Portugal Empire
- 1834 - Suppression of all religious orders



## Preliminary Report







## Details



## Details





## Digital Microscope



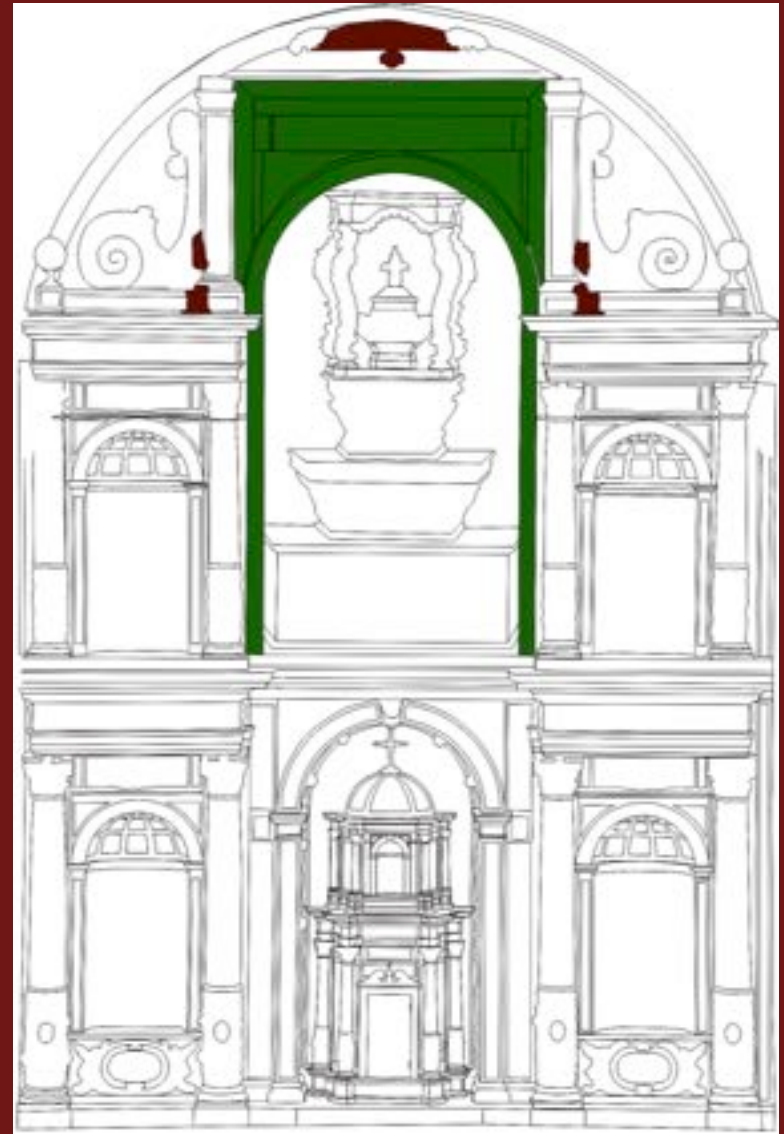
| ID | Description                                                                 | Magnification |
|----|-----------------------------------------------------------------------------|---------------|
| 1  | Inscription over the tabernacle door                                        | 30x           |
| 2  | Red <i>sgraffito</i> - Christ's cloak - tabernacle door                     | 60x           |
| 3  | <i>Sgraffito</i> flowers - side trim - central niche housing the tabernacle | 30x           |







Micro-Sampling

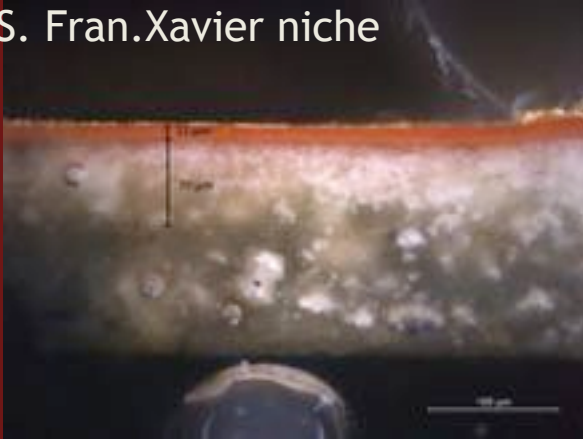


Changes to the structure

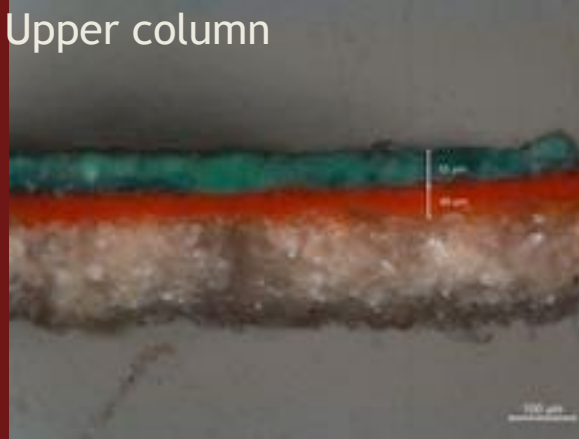
Catarina Pereira - 27<sup>th</sup>, May  
2015

## Optical Microscope

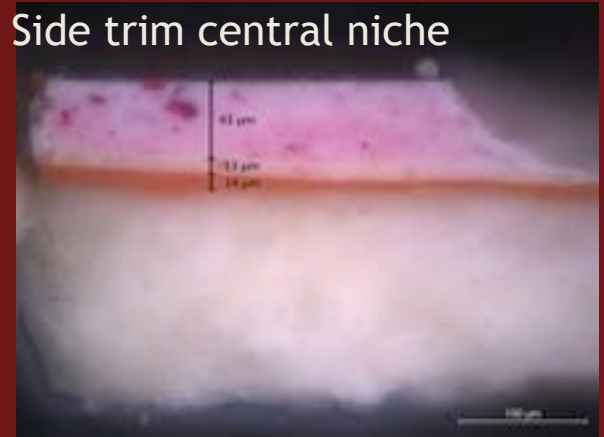
Gilded - 1D02  
S. Fran.Xavier niche



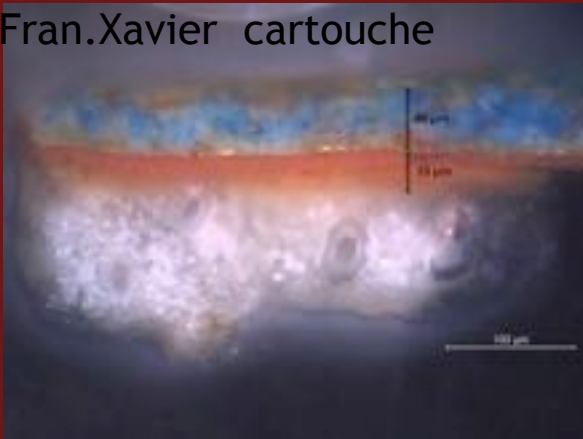
Green - 1VD01  
Upper column



Flesh color - 1C01  
Side trim central niche



Blue - 1EA02  
Fran.Xavier cartouche



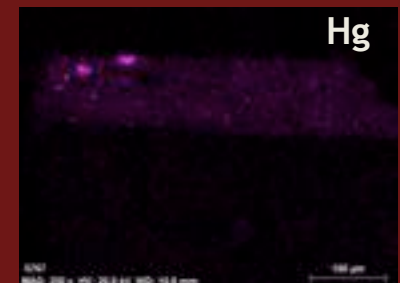
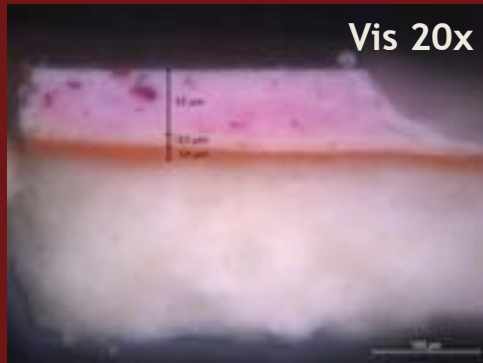
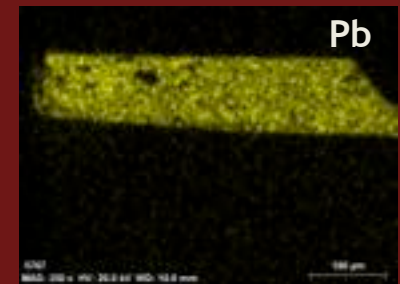
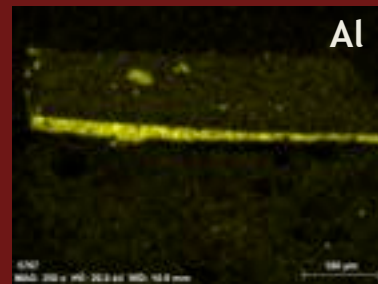
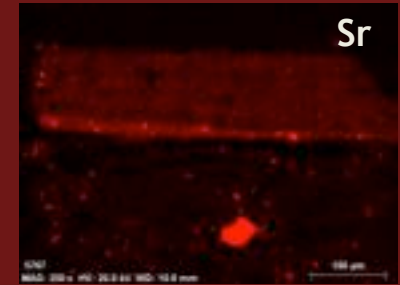
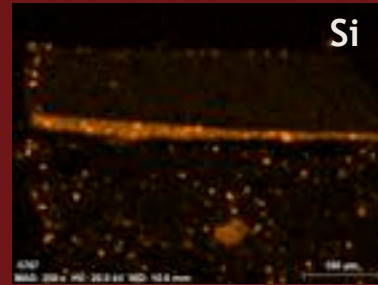
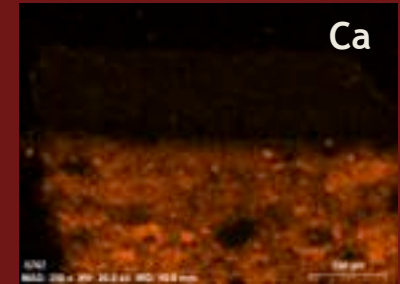
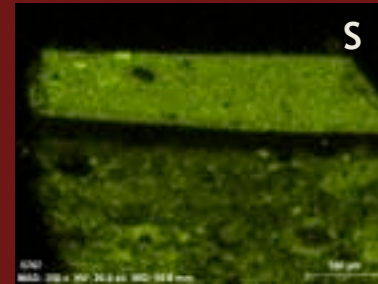
Red - 1V22  
Side trim central niche



**2 flesh color repaint  
over gilded layers**



## SEM-EDS



## $\mu$ -Raman

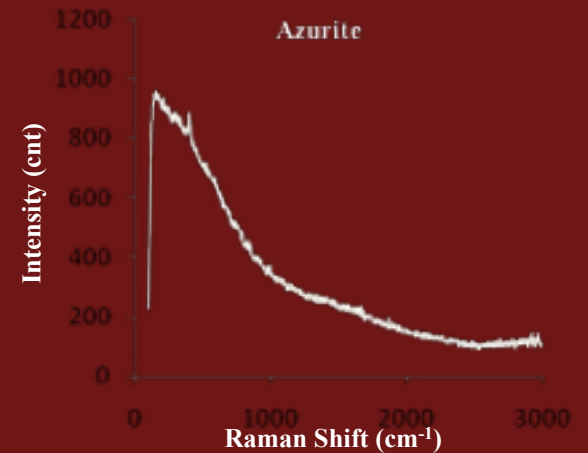
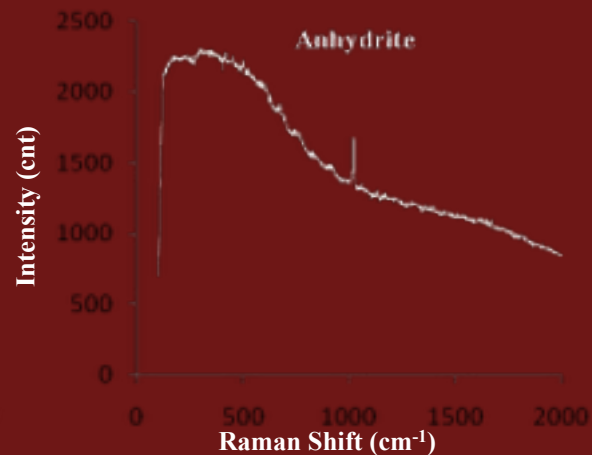
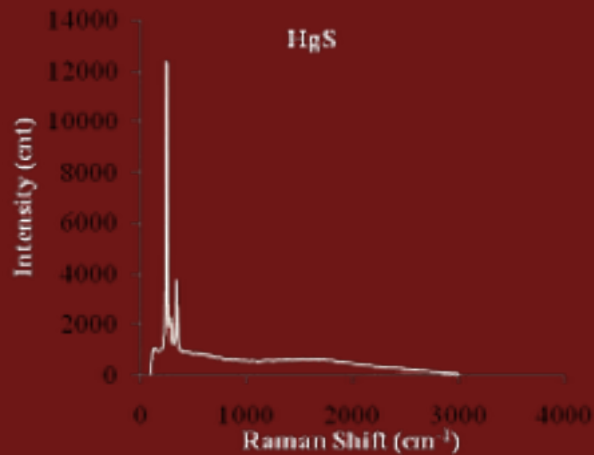
1C01 (10x)



1D02 (10x)



1EA02 (10x)





## Decoration layers

*Ground layer - Plaster of Paris -  $\text{CaSO}_4$*

*Gilding - Gold Leaf over red armenian bole*

## *Color palette*

White

- Lead white

Blue

- Azurite

Green

- Copper green

Red

- Cinnabar

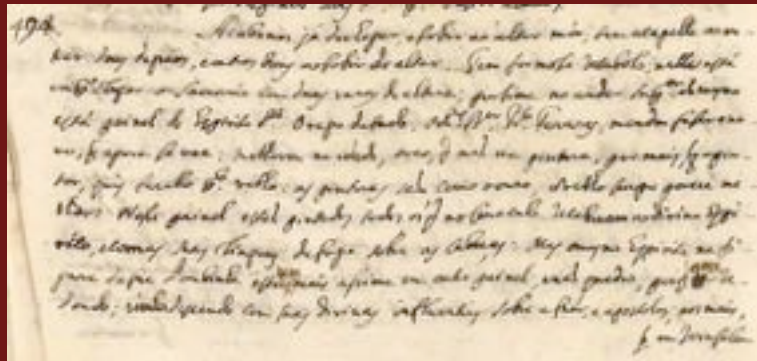
Purple / brown

- Cinnabar + ochre

Flesh color

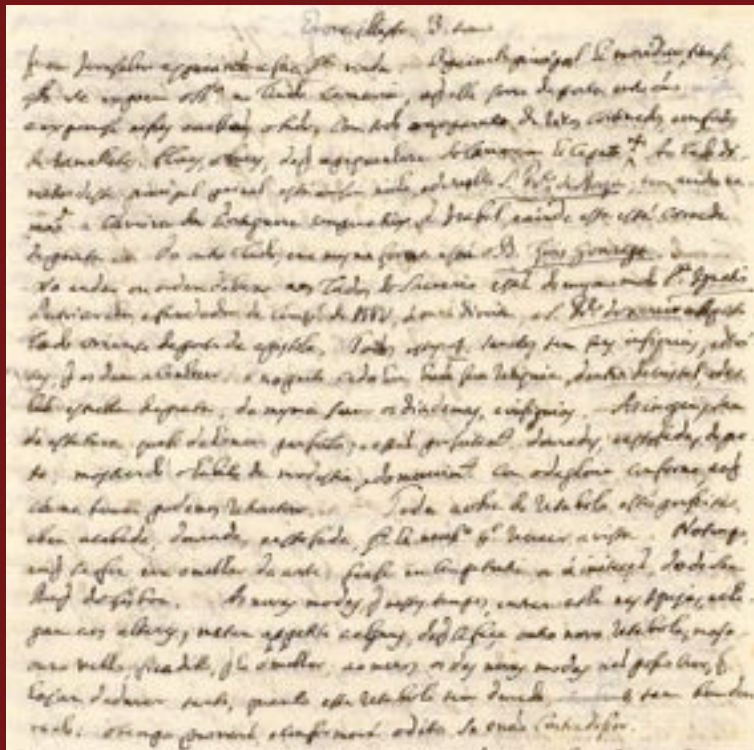
- Cinnabar + Lead white + organic

## Historical sources



**BPE - COD. CXXX/1-10**

**Évora Illustrada**, com noticias antigas e modernas sagradas e profanas, Manuscrito, Comprehende só as notitias do Collegio da Companhia de JESU, e dos seus annexos, o da Purificação, e seo Hospital; e o da Madre de Deos. Leva o Collegio consigo a sua Universidade



Pe. Manuel Fialho,  
Tomo III , Évora, s.n., [17--?], 661 fl.

**Fl. 233 /233v**

## Description

*“Tem formoso retábolo*

*Nele está o sacrário com duas varas de altura*

*Por cima (...) está painel do Espírito Santo, Orago (...) Tavares mandou fazer novo que agora se vê: melhorou na idade, mas que não na pintura (...) as pinturas são como o velho:*

*Neste painel estão pintados todos o que no cenáculo receberam o divino Espírito Santo, nas linguas de fogo sobre as cabeças. Mas o mesmo Espírito na figura da sua ponbinha, está mais acima em outro painel (...) redondo.*

*O painel principal é movediço, retira-se quando se aqui vem o Santíssimo no lindo Camarim e que a ele serve de porta. (...)*

*Ao lado direito deste principal painel está em seu nicho adorado S. Francisco Borja, tem ainda na mão a caveira, (...) do outro lado, e na mesma forma está S. Luís Gonzaga.*

*No andar de baixo aos lados do sacrário estão no mesmo modo Santo Inácio, patriarca e fundador da Companhia de Jesús, e mais à direita S. Francisco Xavier apóstolo. (...)*

*Todos esses 4 santos tem suas insignias (...) e no peito cada um sua reliquia. Toda a obra do retábolo está perfeitamente e bem acabada, dourada, estofada, (...) No tempo em que se fez era o melhor da arte. Fez-se em companhia ou à intenção do de São Roque de Lisboa”*







Lisbon  
S. Roque Main Altarpiece  
1625 e 1628  
Photo by the author



Angra - S. Francis Xavier  
altarpiece  
SIPA.FOTO.901044



Funchal  
Jesuit College Church  
Main-Altarpiece  
Photo: Tiago Dias  
Catarina Pereira - 27<sup>th</sup>, May  
2015



Inv.: Esc. 93  
S. Ignacio Loyola  
Santa Casa da Misericórdia de  
Lisboa / Museu de São Roque  
Photo by: Júlio Marques



Inv.: Esc. 92  
S. Francisco Xavier  
Santa Casa da Misericórdia de  
Lisboa / Museu de São Roque  
Photo by: Júlio Marques



## *Reinterpretation*

Interpretation of analytical  
and historical data

To the early 18th Century

Virtual reconstruction of the  
decorative Layers



























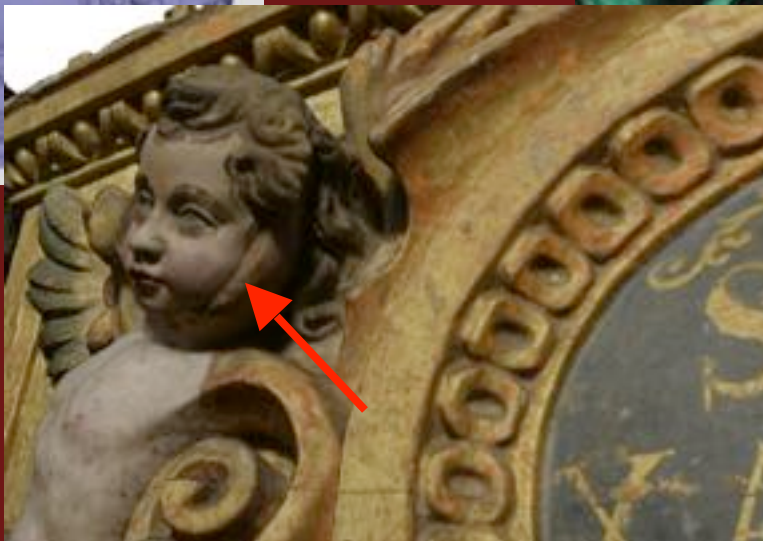
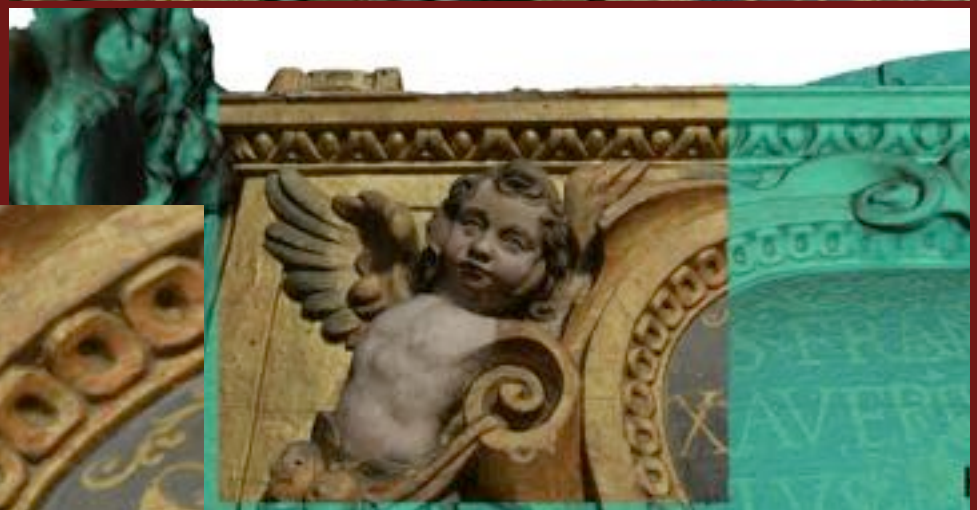
## 3D Modeling



## 3D Modeling



Saint Francis  
Xavier cartouche





## 3D Modeling



Saint Francis  
Xavier cartouche



# 3D Modeling by



<http://www.heritagedoc.pt/>



Meshlab



*Thank you*