ANALYTICAL RESULTS – OBJECT 1

PARTNER:	**UNITO - CCR**
TYPE OF WORK:	**Mural (Object 1)**
COUNTRY:	**Italy**
CITY:	**Turin**
ADDRESS:	**Via Ragazzoni**
OWNER / CUSTODIAN:	**Turin Municipality**
ARTIST:	**CORN79, CND, RESER, VESOD, WENS**
TITLE OF THE WORK:	**No title**
YEAR OF EXECUTION:	**2011**
MATERIALS:	**Mixed painting on bricks**

SAMPLING POINTS LOCATION

TABLE OF ANALYTICAL RESULTS

	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results
1	**Shine black paint layer**	x		ATR-FTIR	Silicates, calcite	ATR-FTIR Py-GC/MS	Alkyd-Nitro			ATR-FTIR	Oxalates
2	**Background paint layer**	x		ATR-FTIR	Talc, calcite	ATR-FTIR	PVA			ATR-FTIR	Oxalates
3	**Red paint layer**	x		ATR-FTIR	Silicates, calcite, PR 48	ATR-FTIR Py-GC/MS	Alkyd-Nitro			ATR-FTIR	Oxalates
4	**Purple paint layer**	x		ATR-FTIR	Cinquasia Violet (PV 19), silicates	ATR-FTIR Py-GC/MS	Alkyd				
5	**Grey paint layer**	x		ATR-FTIR	Calcite, silicates	ATR-FTIR	Styrene-acrylic				
6	**Orange paint layer**	x		ATR-FTIR	Silicates, possibly PO16	ATR-FTIR	Alkyd-Nitro			ATR-FTIR	Oxalates
7	**Cross section**	x									
8	**Blue paint layer**	x		ATR-FTIR SEM-EDS	Calcite, Kaolin, Ti white	ATR-FTIR	Alkyd-Nitro			ATR-FTIR	Oxalates
9	**Light blue paint layer**	x		ATR-FTIR SEM-EDS	Calcite, talc	ATR-FTIR	Acrylic			ATR-FTIR	Oxalates
10	**Cross section**	x									
11	**Light green paint layer**	x		ATR-FTIR SEM-EDS	Silicates, Ti white	ATR-FTIR	Alkyd-Nitro			ATR-FTIR	Oxalates

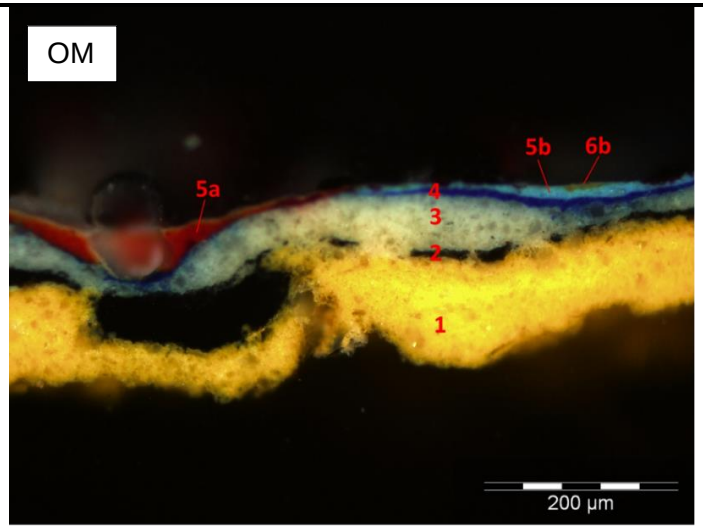
12	**White paint layer**	x		ATR-FTIR SEM-EDS	Silicates, Ti white	ATR-FTIR Py-GC/MS	Alkyd-Nitro			ATR-FTIR	oxalates
13	**Orange paint layer**	x		ATR-FTIR	Calcite, silicates, PO 34	ATR-FTIR Py-GC/MS	Styrene-modified Alkyd (main) - VA/VeoVa (secondary)			ATR-FTIR	oxalates
14	**Support**	x						XRD	Quartz, K-Feldspate (microcline), Plagioclase (Albite)		

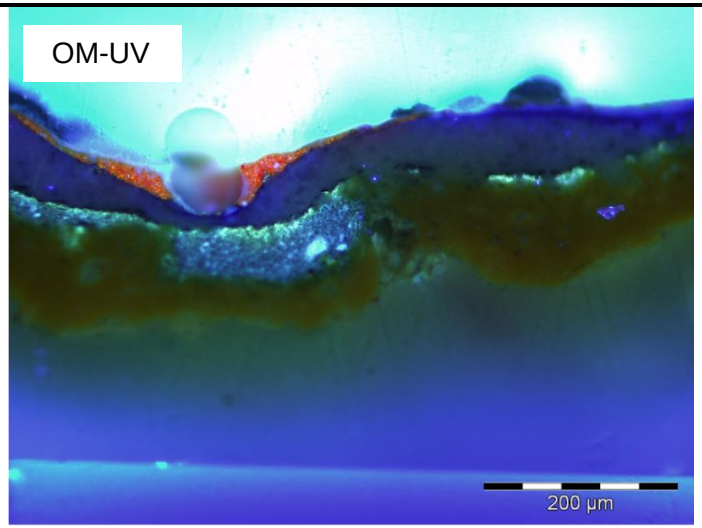
*** mortars, stone, metal ect.**

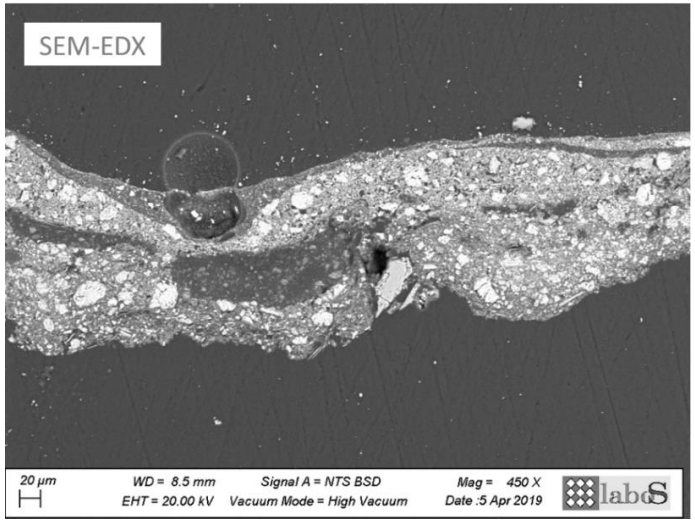
**** Additional research or analyzes, for example: aging tests, colorimetry, pH…**

STRATIGRAPHY OF THE MICROSAMPLES

Sample n°: OBJ1_10

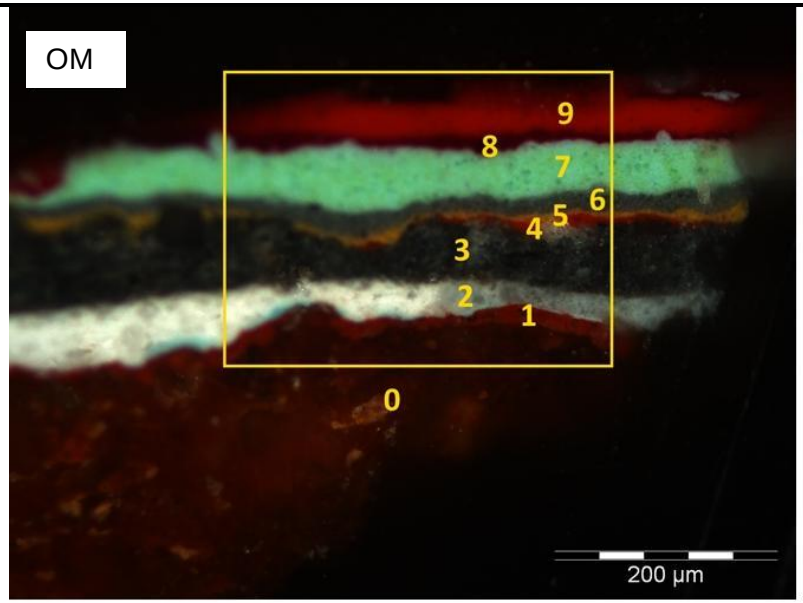


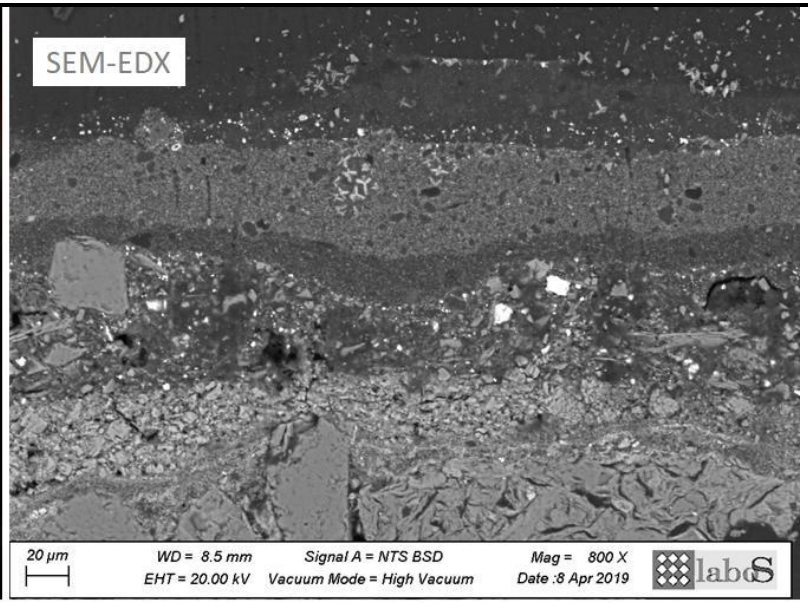




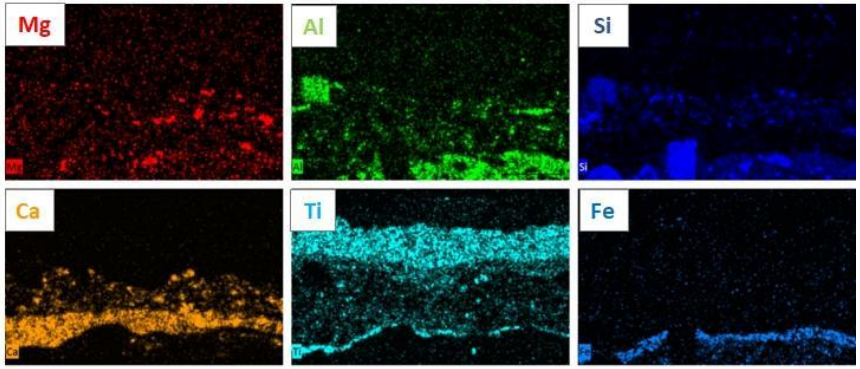
1 – yellow	Al, Si, Ca, Ti, Cl, (S)
2 – black	Al, Si
3 – white	Al, Si, Ca, Ti
4 – blue	Ti
5a – red	organic, (Si), (Ca), (Ti)
5b – light blue	Ti, Ca, (Al), (Si), (Mg)
6b – yellow	Si, Ti, (Ca)

Sample n°: OBJ1_14



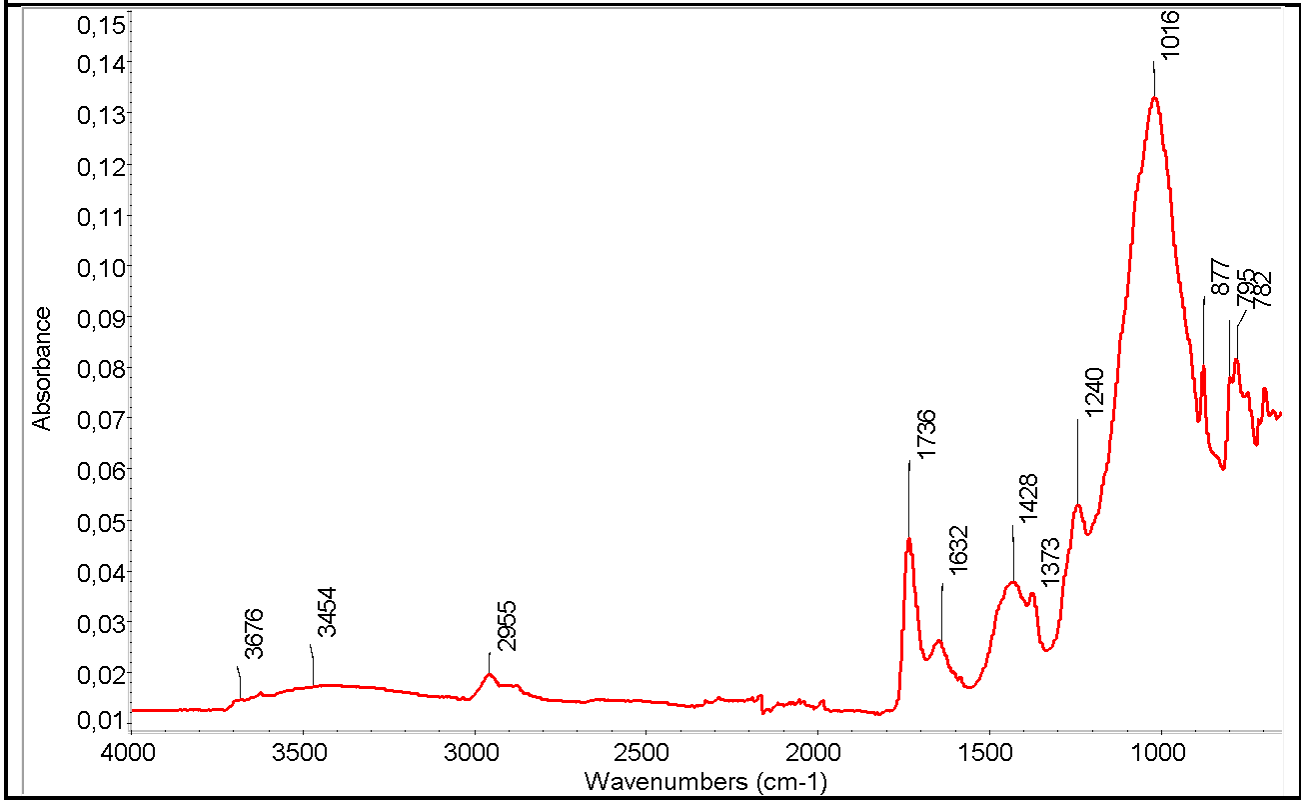


0 - support	**Al**, **Si**, **K**, Mg, **Fe**, (Na), (Ca)
1 – red	**Fe**, Si, Ca
2 – white	**Ca**, Si, Al, Ti
3 – grey	**Si**, Al, Ca, Tl
4 – red 5 – yellow 6 – dark green	organic? Ti, (Fe)
7 – light green	**Ti**, Na, (Si), (Cl)
8 – dark red	Cl, Ti, (Si), (Al), (Na)
9 – red	**Cl**, **Ti**, (Si), (Al)



FOURIER-TRANSFORM INFRARED SPECTROSCOPY (FTIR)

Sample n°: OBJ1_2



ASSIGNMENTS:

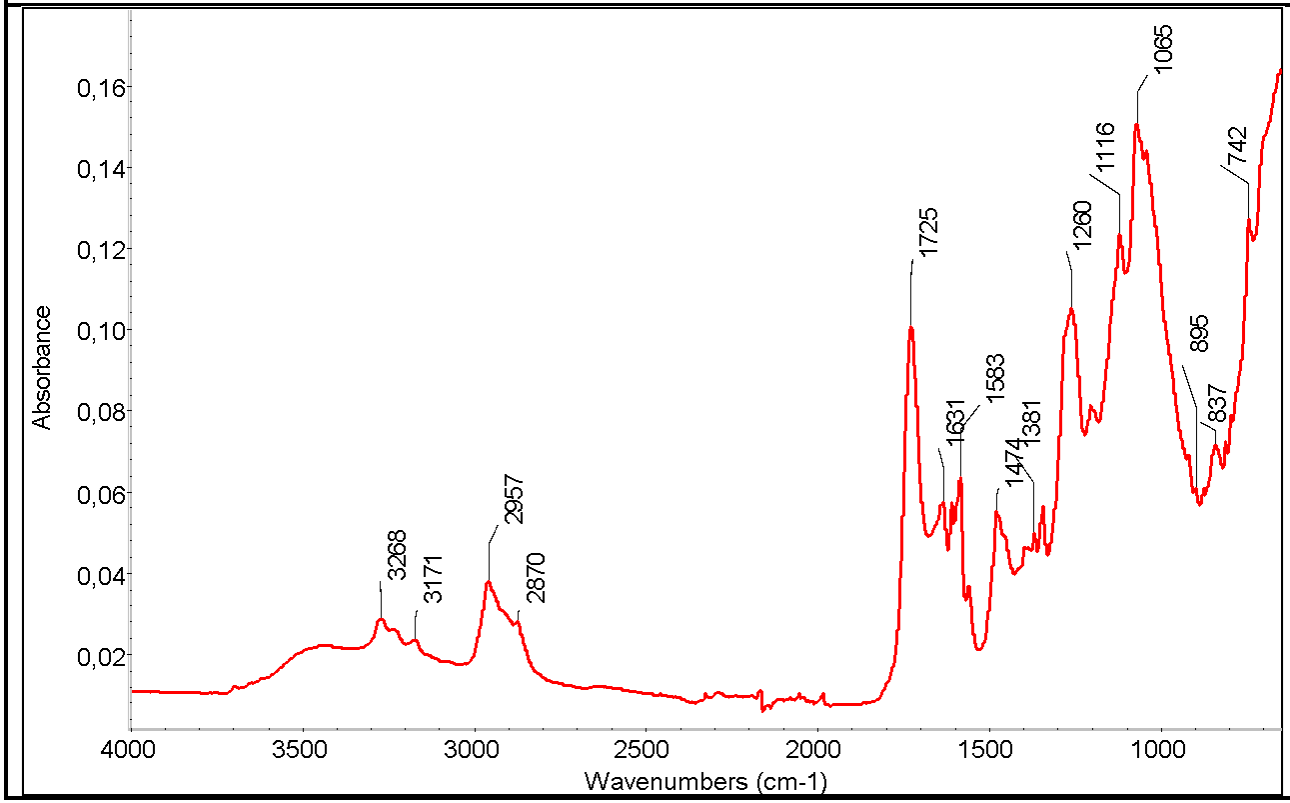
PVA: 2927 cm^{-1}, 1736 cm^{-1},1434 cm^{-1},1373 cm^{-1} , 1240 cm^{1}, 795 cm^{-1}

Talc: 3676 cm^{-1},1016 cm^{-1}

Calcite: 1796 cm^{-1},1428 cm^{-1},877 cm^{-1}, 712 cm^{-1}

Oxalates: 3435 cm^{-1}, 1632 cm^{-1}, 782 cm^{-1}

Sample n°: OBJ1_4



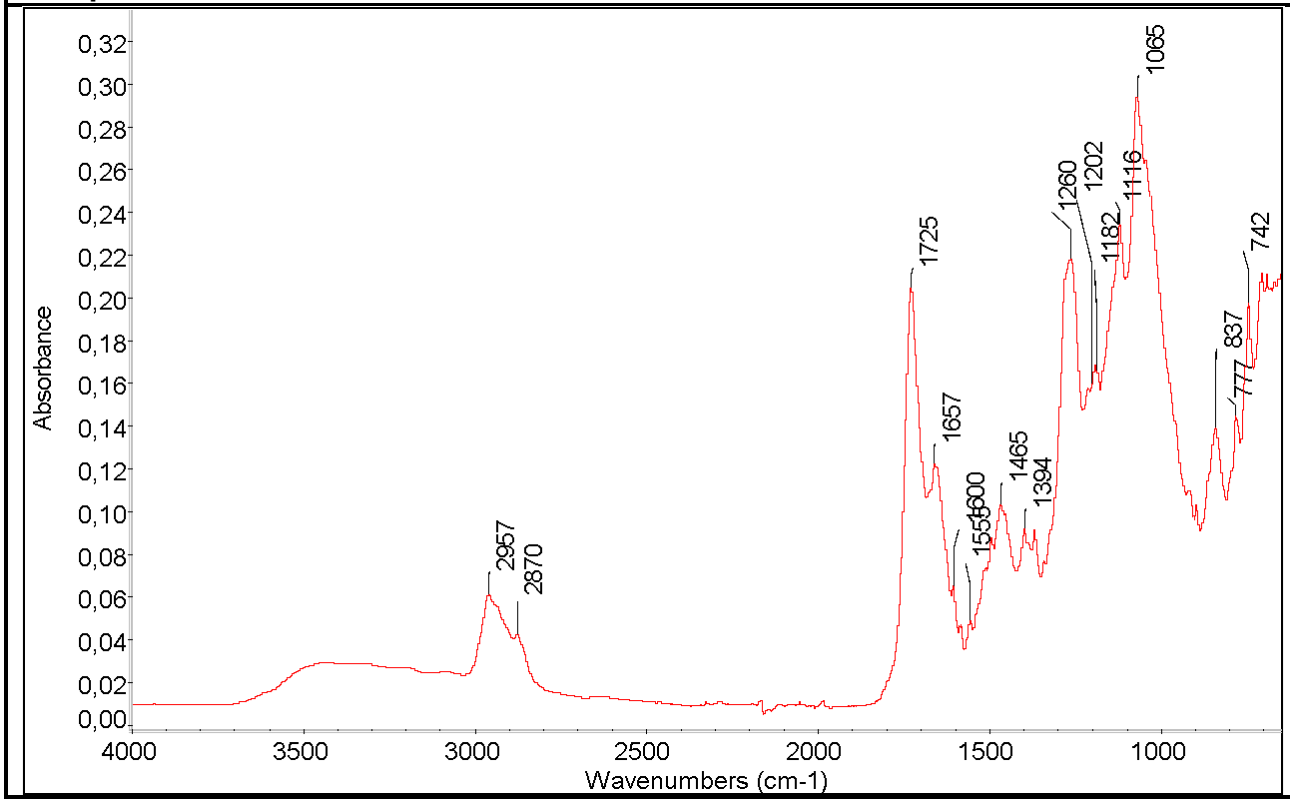
ASSIGNMENTS:

Alkyd: 2957 cm^{-1}, 2870 cm^{-1}, 1725 cm^{-1}, 1583 cm^{-1}, 1260 cm^{-1}, 1116 cm^{-1}, 1065 cm^{-1}, 742 cm^{-1}

Cinquasia Violet (PV 19) : 3268 cm^{-1},3171 cm^{-1},1631 cm^{-1}, 1606 cm^{-1}, 1580 cm^{-1}, 1557 cm^{-1}, 1474 cm^{-1}, 1381 cm^{-1}, 1260 cm^{-1}, 895 cm^{-1}, 742 cm^{-1}

Silicates: 900-1200 cm^{-1}

Sample n°: OBJ1_6



ASSIGNMENTS:

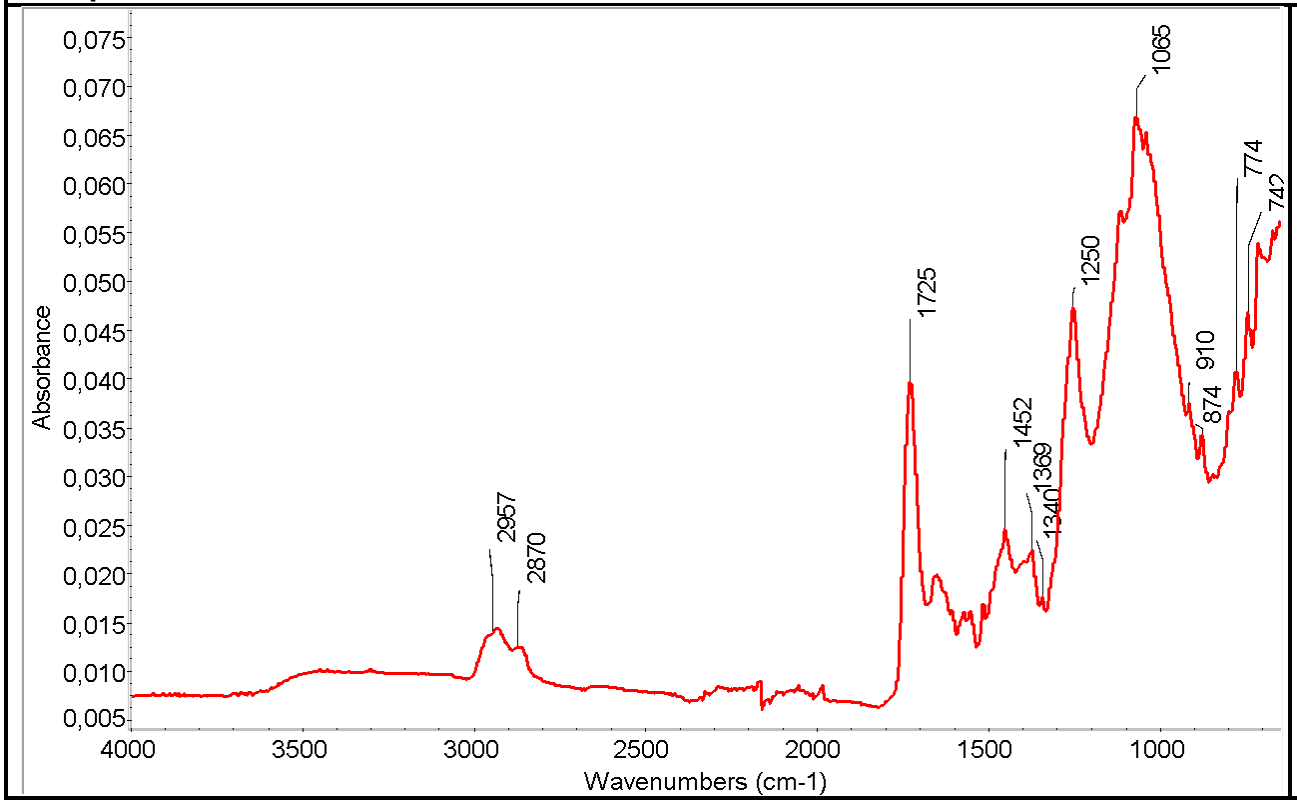
Alkyd: 2957 cm^{-1}, 2870 cm^{-1}, 1725 cm^{-1}, 1600 cm^{-1},1492 cm^{-1}, 1465 cm^{-1}, 1260 cm^{-1}, 1116 cm^{-1}, 1065 cm^{-1}, 742 cm^{-1}, 702 cm^{-1}

Nitrocellulose: 1657 cm^{-1}, 1065 cm^{-1}, 839 cm^{-1}

PO16: 1675 cm^{-1}, 1600 cm^{-1}, 1555 cm^{-1}, 1510 cm^{-1}, 1448 cm^{-1}, 1365 cm^{-1},1182 cm^{-1}, 777 cm^{-1}

Silicates: 900-1200 cm^{-1}

Sample n°: OBJ1_13



ASSIGNMENTS:

Alkyd: 2957 cm^{-1}, 2870 cm^{-1}, 1725 cm^{-1}, 1583 cm^{-1},1260 cm^{-1}, 1116 cm^{-1}, 1065 cm^{-1}, 742 cm^{-1}

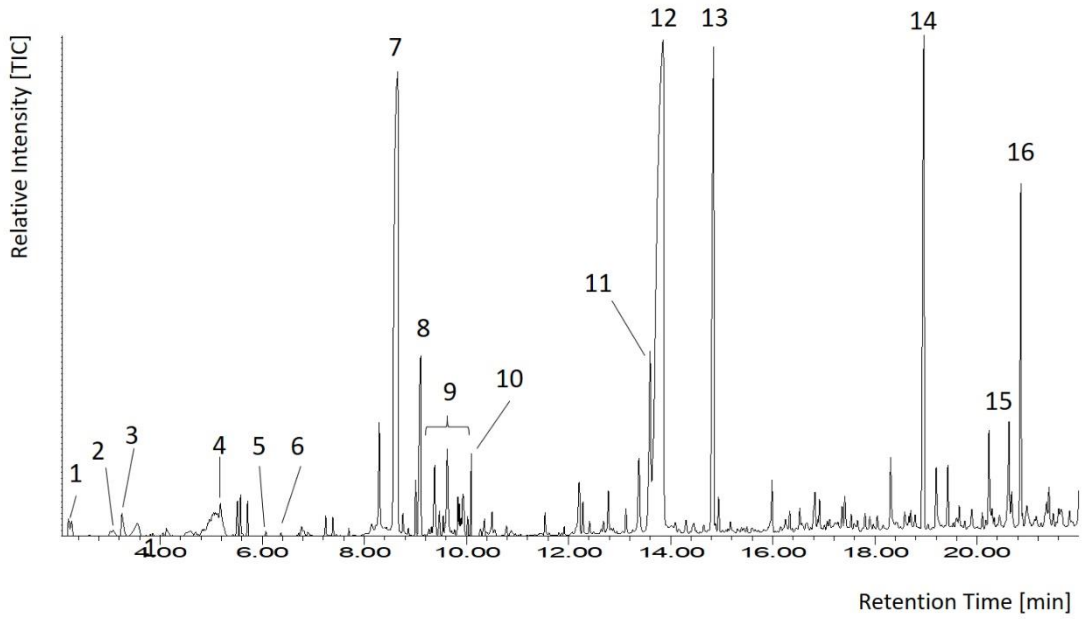
PO34: 1567 cm^{-1}, 1550 cm^{-1}, 1511 cm^{-1}, 1448 cm^{-1}, 1370 cm^{-1}, 1370 cm^{-1}, 1339 cm^{-1}, 1250 cm^{-1}, 912 cm^{-1}, 774 cm^{-1}

Silicates: 900-1200 cm^{-1}

Titanium white : < 600 cm^{-1}

PYROLYSIS-GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample n°: OBJ1_13



Peak N.	Assignment	Rt (min)
1	benzene	2.3
2	acetic acid	3.0
3	toluene	3.2
4	styrene	5.2
5	2,2-dimethoxy-1,3-propandiol	6.1
6	benzaldehyde	6.4
7	benzoic acid, methyl ester	8.7
8	1,3-dimethoxy-2,2-bis(methoxymethyl)-propane	9.1
9	vinyl versatates	9.2-10.1
10	3-methoxy-2,2-bis(methoxymethyl)-propanol	10.1
11	octandioic acid, dimethyl ester	13.6
12	dimethyl phthalate	13.8
13	nonandioic acid, dimethyl ester	14.8
14	hexadecanoic acid, methyl ester	18.9
15	octadecanoic acid, methyl ester	20.6
16	octadecanoic acid, methyl ester	20.9

This document was produced within the project ***Conservation of Art in Public Spaces (CAPuS)***.

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