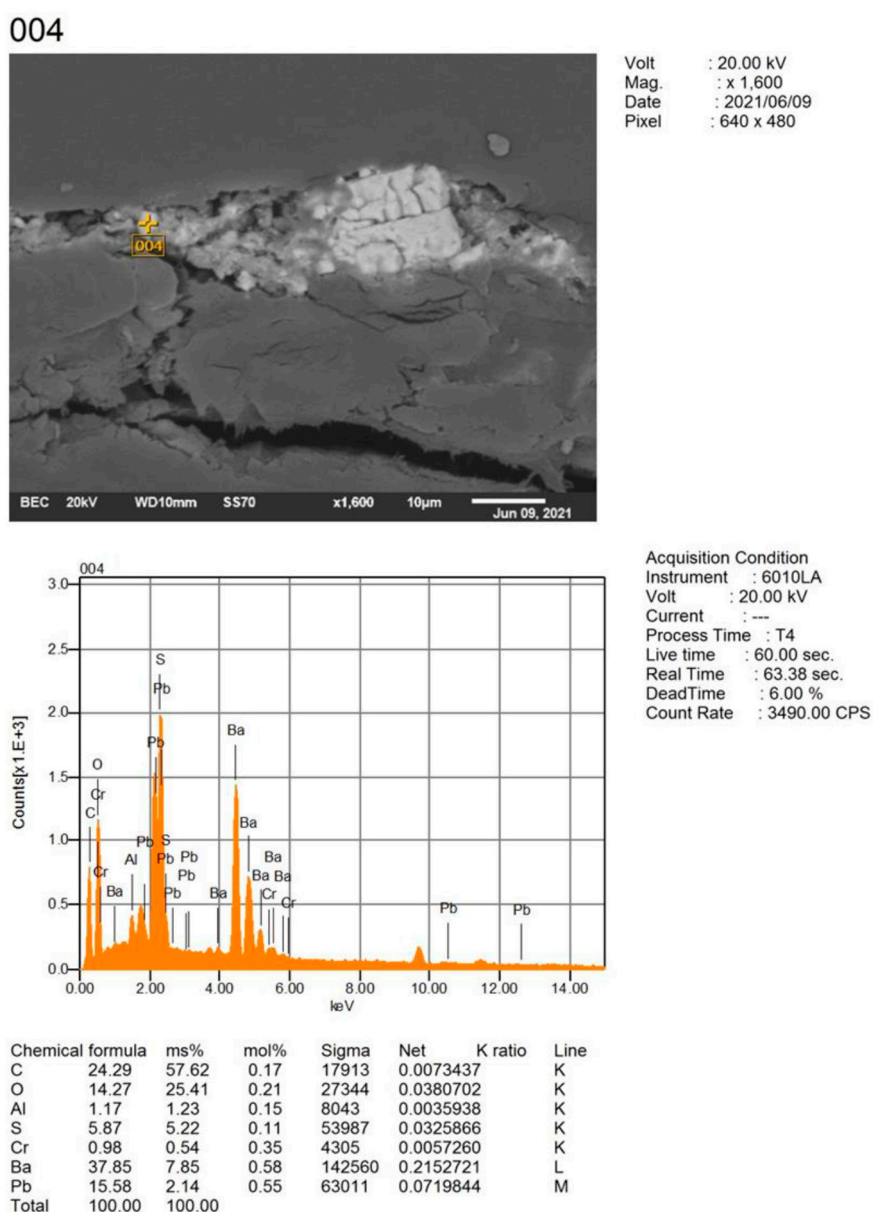


## Supplementary Materials for the paper:

### Scientific investigation of contemporary pastel painting by Roberto Sebastian Matta: characterization of original materials through multispectral imaging and spectroscopic techniques

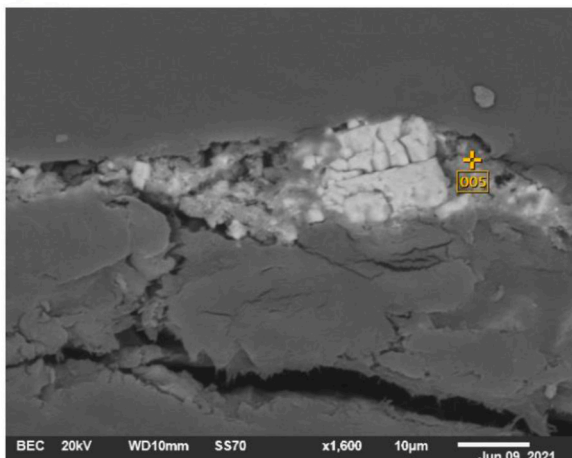
Authors: Claudia Colantonio, Claudia Pelosi, Giuseppe Calabrò, Valeria Spizzichino, Ilaria Partenzi, Luca Lanteri

In this document are reported the results of elemental analysis done with SEM-EDS, discussed in section 3.5 of the manuscript. EDS analyses are reported for both painting layer and paper support.

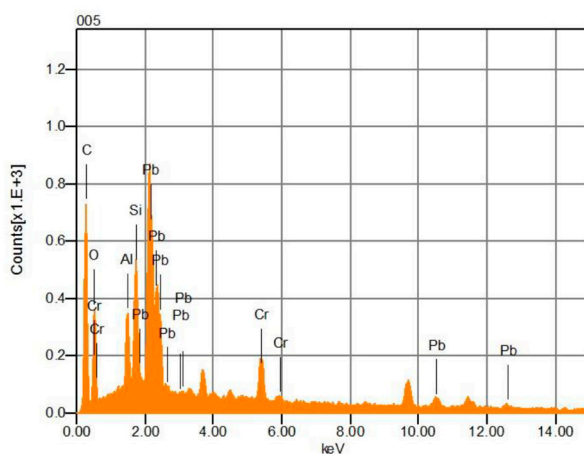


**Figure S1.** Point 004 of analysis (painting layer in the Figure 13) with the chemical elements found. Magnification 1600x

005



Volt : 20.00 kV  
Mag. : x 1,600  
Date : 2021/06/09  
Pixel : 640 x 480

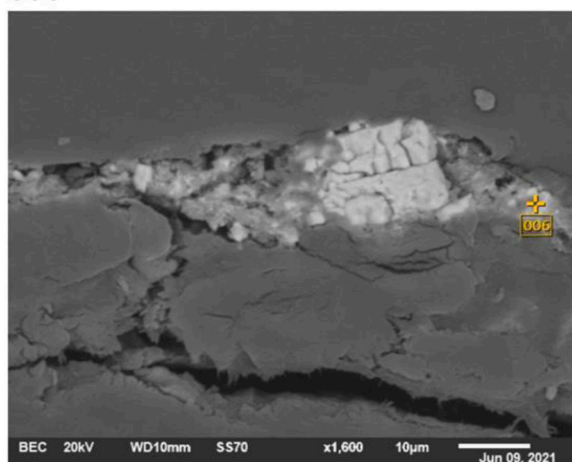


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 60.00 sec.  
Real Time : 61.42 sec.  
DeadTime : 2.00 %  
Count Rate : 1387.00 CPS

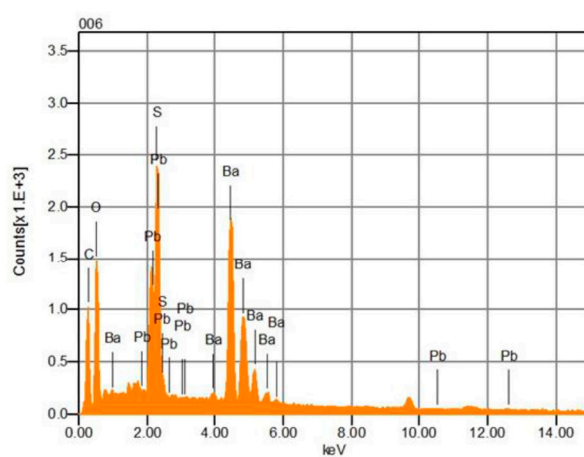
Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	51.82	72.93	0.20	17548	0.0071939	K
O	18.69	19.75	0.50	8286	0.0115367	K
Al	2.44	1.53	0.15	8703	0.0038888	K
Si	4.19	2.52	0.17	15645	0.0078256	K
Cr	5.77	1.88	0.52	9443	0.0125608	K
Pb	17.10	1.40	0.74	28101	0.0321027	M
Total	100.00	100.00				

**Figure S2.** Point 005 of analysis (painting layer in the Figure 13) with the chemical elements found. Magnification 1600x

006



Volt : 20.00 kV  
Mag. : x 1,600  
Date : 2021/06/09  
Pixel : 640 x 480

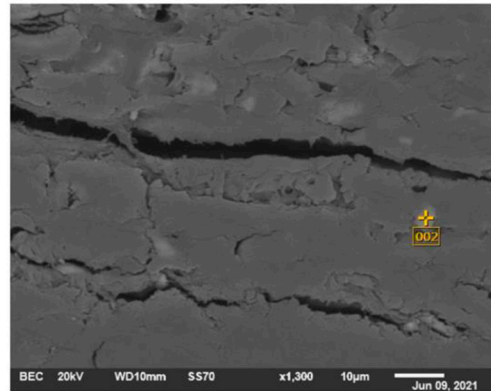


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 60.00 sec.  
Real Time : 63.74 sec.  
DeadTime : 5.00 %  
Count Rate : 3756.00 CPS

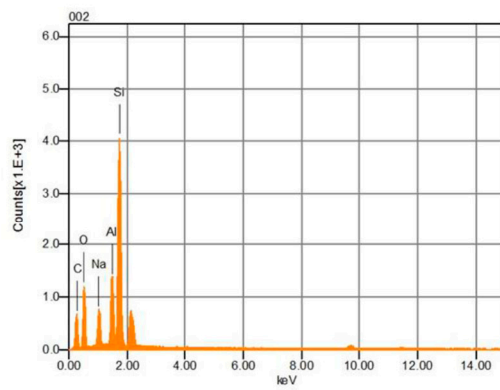
Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	26.17	59.35	0.12	23638	0.0096907	K
O	14.75	25.10	0.16	33494	0.0466328	K
S	7.02	5.96	0.08	78976	0.0476704	K
Ba	41.05	8.14	0.42	191828	0.2896693	L
Pb	11.01	1.45	0.41	54487	0.0622465	M
Total	100.00	100.00				

**Figure S3.** Point 006 of analysis (painting layer in the Figure 13) with the chemical elements found. Magnification 1600x

002



Volt : 20.00 kV  
Mag. : x 1,300  
Date : 2021/06/09  
Pixel : 640 x 480

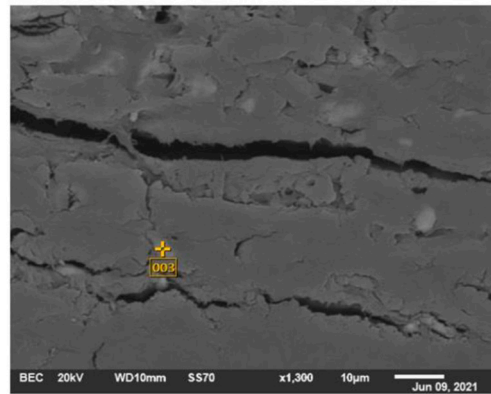


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 40.38 sec.  
Real Time : 42.21 sec.  
DeadTime : 4.00 %  
Count Rate : 2898.00 CPS

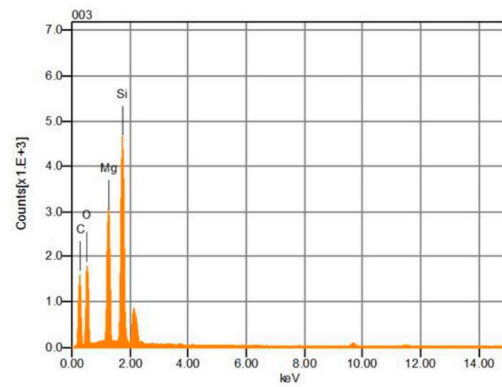
Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	42.83	55.55	0.35	17269	0.0105192	K
O	28.79	28.04	0.44	29937	0.0619335	K
Na	4.49	3.05	0.19	22015	0.0242564	K
Al	5.20	3.00	0.14	44373	0.0294618	K
Si	18.68	10.36	0.16	156111	0.1160255	K
Total	100.00	100.00				

**Figure S4.** Point 002 of analysis (internal area of the section in the proximity of a crack, in the Figure 12C) with the chemical elements found. Magnification 1300x

003



Volt : 20.00 kV  
Mag. : x 1,300  
Date : 2021/06/09  
Pixel : 640 x 480

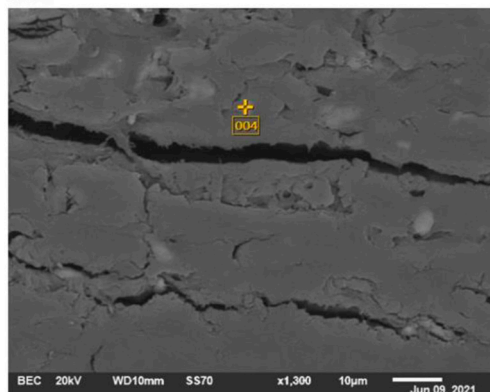


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 48.32 sec.  
Real Time : 50.71 sec.  
DeadTime : 5.00 %  
Count Rate : 3216.00 CPS

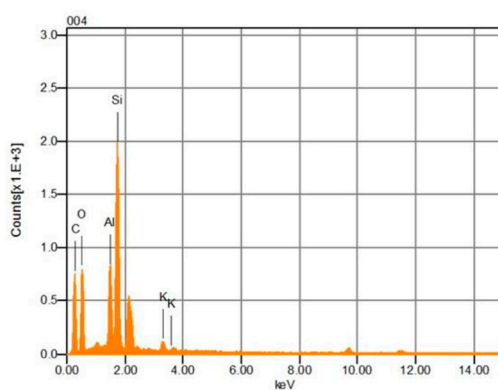
Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	48.40	60.13	0.22	38774	0.0197381	K
O	29.15	27.19	0.37	45176	0.0781010	K
Mg	9.06	5.56	0.12	102881	0.0581889	K
Si	13.39	7.11	0.13	175012	0.1086993	K
Total	100.00	100.00				

**Figure S5.** Point 003 of analysis (internal area of the section in the proximity of a crack, in the Figure 12C) with the chemical elements found. Magnification 1300x

004



Volt : 20.00 kV  
Mag. : x 1,300  
Date : 2021/06/09  
Pixel : 640 x 480

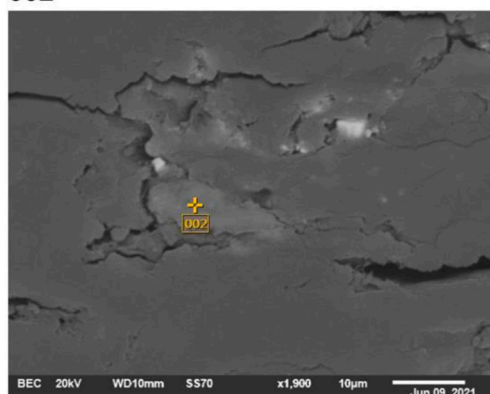


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 31.41 sec.  
Real Time : 32.55 sec.  
DeadTime : 4.00 %  
Count Rate : 2300.00 CPS

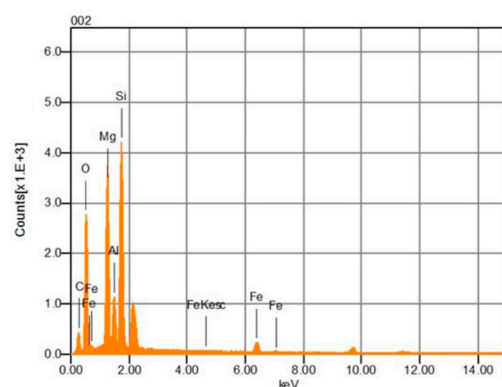
Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	49.52	60.81	0.20	18644	0.0146005	K
O	32.11	29.60	0.39	20480	0.0544676	K
Al	4.32	2.36	0.11	25232	0.0215372	K
Si	13.04	6.85	0.13	75119	0.0717742	K
K	1.00	0.38	0.19	4558	0.0067384	K
Total	100.00	100.00				

**Figure S6.** Point 004 of analysis (internal area of the section in the proximity of a crack, in the Figure 12C) with the chemical elements found. Magnification 1300x

002



Volt : 20.00 kV  
Mag. : x 1,900  
Date : 2021/06/09  
Pixel : 640 x 480

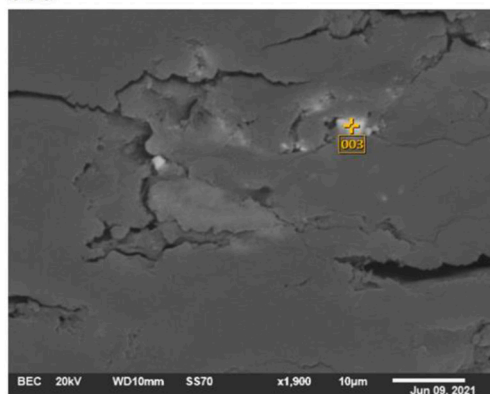


Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 60.00 sec.  
Real Time : 62.90 sec.  
DeadTime : 5.00 %  
Count Rate : 3076.00 CPS

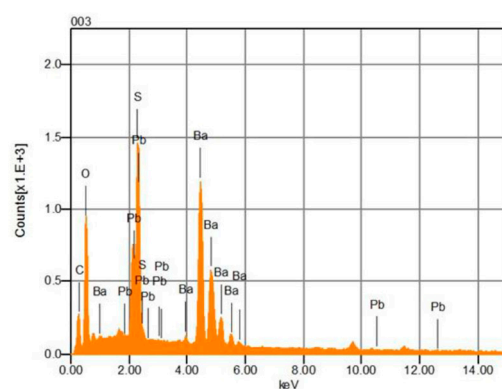
Chemical	formula	ms%	mol%	Sigma	Net	K ratio	Line
C	22.90	33.61	0.44	9512	0.0038996		K
O	37.50	41.33	0.32	71156	0.0990689		K
Mg	14.08	10.21	0.16	121225	0.0552171		K
Al	3.98	2.60	0.17	34336	0.0153427		K
Si	17.49	10.98	0.19	160050	0.0800554		K
Fe	4.05	1.28	0.65	13852	0.0246995		K
Total	100.00	100.00					

**Figure S7.** Point 002 of analysis (internal area of the section, area shown in the Figure 12D) with the chemical elements found.  
Magnification 1900x

003



Volt : 20.00 kV  
Mag. : x 1,900  
Date : 2021/06/09  
Pixel : 640 x 480



Acquisition Condition  
Instrument : 6010LA  
Volt : 20.00 kV  
Current : ---  
Process Time : T4  
Live time : 32.21 sec.  
Real Time : 34.33 sec.  
DeadTime : 5.00 %  
Count Rate : 3981.00 CPS

Chemical formula	ms%	mol%	Sigma	Net	K ratio	Line
C	13.89	40.95	0.14	5964	0.0045543	K
O	15.69	34.74	0.14	22612	0.0586434	K
S	8.65	9.55	0.09	49196	0.0553151	K
Ba	48.36	12.47	0.45	116904	0.3288362	L
Pb	13.41	2.29	0.45	33567	0.0714327	M
Total	100.00	100.00				

**Figure S8.** Point 003 of analysis (internal area of the section, area shown in the Figure 12D) with the chemical elements found.  
Magnification 1900x