NUMBER OF PARTNER:	P3 Cesmar7, P4 An.t.a.res srl
TYPE OF WORK:	Mural painting
COUNTRY:	Italy
CITY:	Reggio Emilia
ADDRESS:	Via Candelù, 9
OWNER / CUSTODIAN:	Cooperative Popular Houses of Mancasale and Coviolo
ARTIST:	H101 (Proyecto Ritual)
TITLE OF THE WORK:	Oriental carpet of colors
YEAR OF EXECUTION:	2010
MATERIALS:	housepaint acrylic and Montana spray

	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	**H1**	X		µ- Raman Spectroscopy on the cross-section sample and Raman Spectroscopy in situ	Rutile is the main compound of the whitish patina and the white primer. The orange pigment is PO34 Diazopyrazolone	FTIR-ATR	Alkyd resin is present both in the orange/red paint layer than, in lesser amount, in its patina	-		Stereomicroscopy on sample fragments	Stratigraphy: a.Ground layer b.Yellowish ground layer c.White prime coating d. Paint layer e.Whitish thin layer patina
2	**H2**	X									

3	**H3**	X		Raman Spectroscopy in situ	Rutile, Polycyclic p., diketopyrrolo-pyrrole (DPP), PR254	FTIR-ATR					
4	**H4**	X			not identified		Acrylic resin				micro-appearance of the painting layer
5	**H5**	X		Raman Spectroscopy in situ	Rutile, Probably disazopigment, pyrazolone PO34?	FTIR-ATR Py-GC/MS	Alkyd resin both in the pink paint layer than, in lesser amount, in its white patina				Stratigraphy: a.Ground layer b.Yellowish ground layer c.White prime coating d. Paint layer e.White thin layer patina
6	**H6**	X		Raman Spectroscopy in situ	Rutile, Monoazopigment, acetoacetic arylide PY74						

*** mortars, stone, metal ect.** Additional research or analyzes, for example: aging tests, colorimetry, pH…**

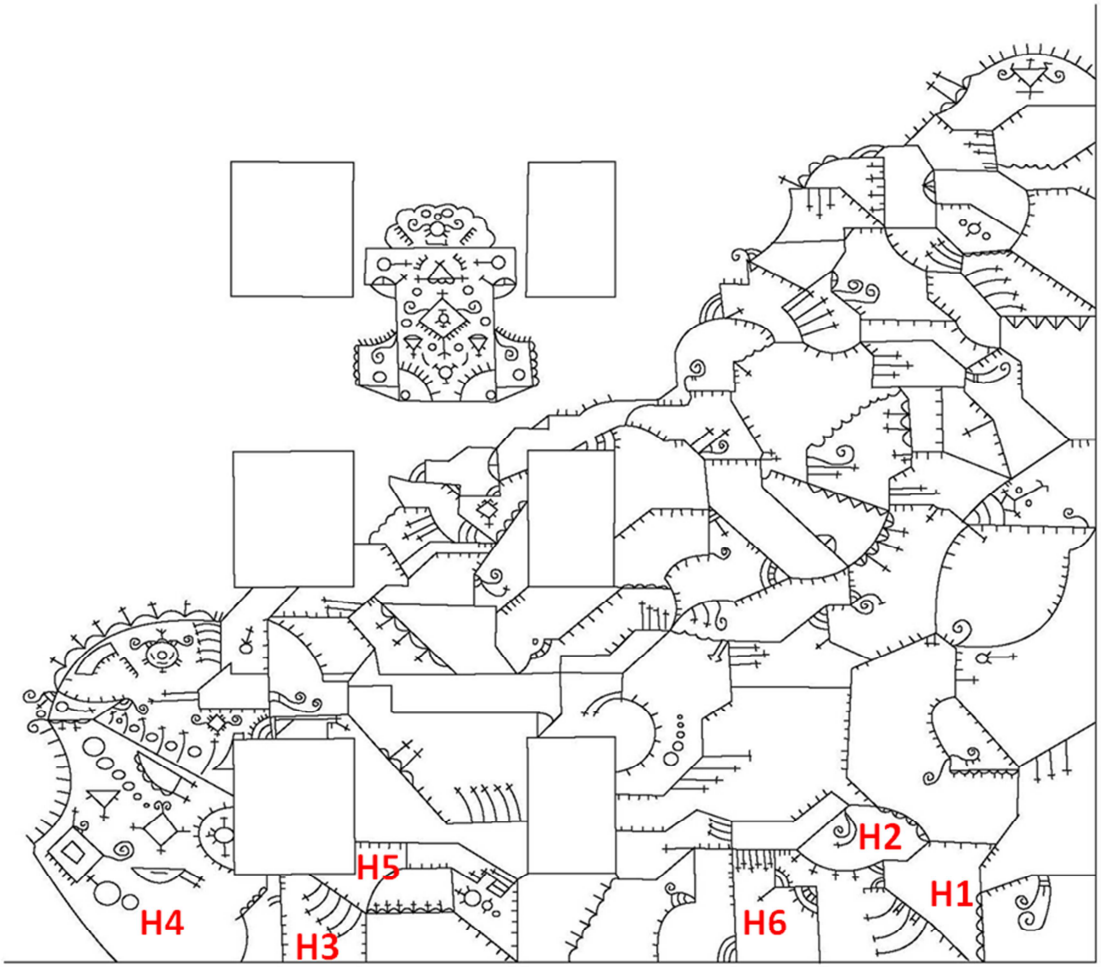

Fig. 1 "Oriental carpet of colors" – sampling location

Sampling map:

H1 red > violet
H2 red > pink
H3 stable red color
H4 stable red color
H5 pink > white
H6 orange > pink

H1 sample was collected from a purple area painted by spray (**fig.1, 2-3**) that was originally red.
The study of the H1 sample has shown the following structure and composition:

- ***a)*** Traces of the plaster ground layer;
- ***b)*** Yellowish ground layer, regular feature and thickness (about 130 µm).
  The FTIR-ATR spectra collected on *a+b* layers have shown: Calcite, silicates, traces of an acrylic-resin based;
- ***c)*** White paint layer (prime coating) composed of Rutile, Calcite, silicates, likely acrylic based resin, regular feature and irregular thickness, average thickness of 20 µm;
- ***d)*** Orange paint layer due to PO34 – Diazopyrazolone and containing alkyd resin with low amount of styrene**,** Calcite and Rutile. Regular feature, average thickness of 40 µm;
- ***e)*** Whitish thin (< 10µm) layer (patina), same composition of the layer *d*, with less quantities of alkyd resin

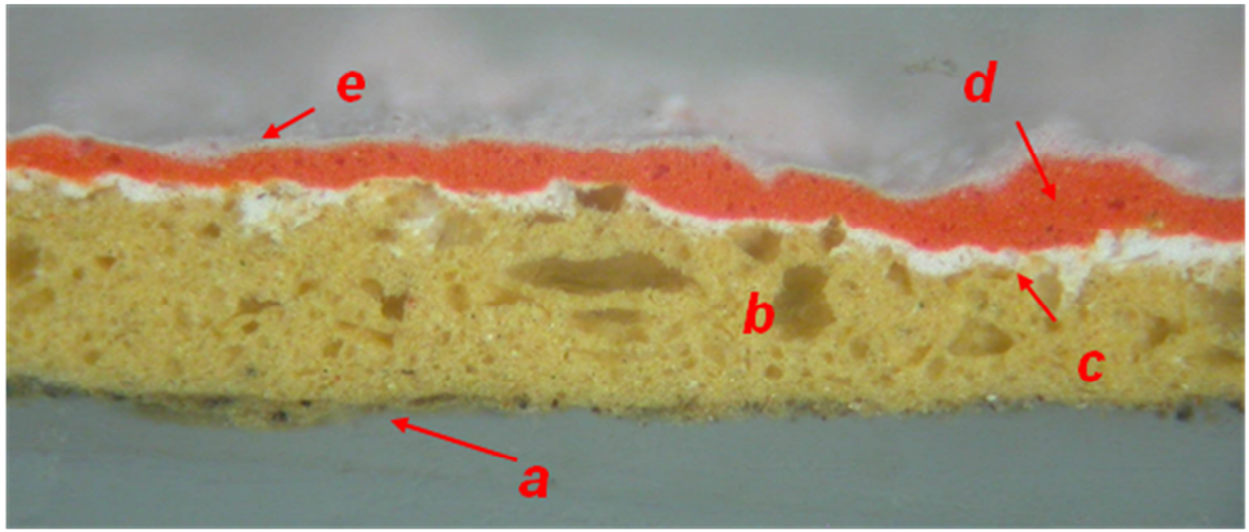

Fig. 2 "Oriental carpet of colors" – sample H1 – cross section – reflected Visible light –OM – magnification 150 x

Fig. 3 "Oriental carpet of colors" – sample H1 – after sampling

H2 sample was collected from a salmon pink area painted by spray (**fig.1; 4-5**) that was originally orange/red.
The study of the H2 sample has shown the same layered structure of the H1:

- ***a)*** Traces of the plaster ground layer;
- ***b)*** Yellowish ground layer;
- ***c)*** White paint layer (prime coating);
- ***d)*** Orange paint layer containing an alkyd resin
- ***e)*** Whitish thin and fragile layer (patina) due to optical alteration of the layer *d*. Same composition of the layer *d*, with minor quantities of resin.

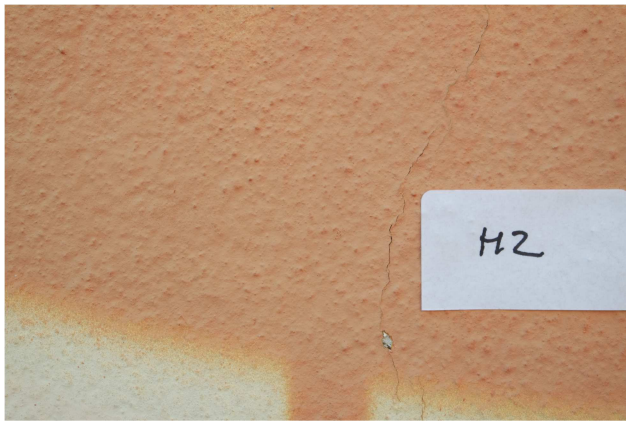

Fig. 4 "Oriental carpet of colors" – sample H2 – after sampling

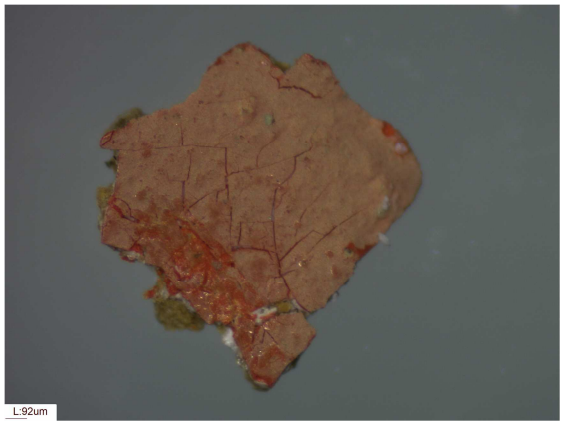

Fig. 5 "Oriental carpet of colors" – sample H2 with the patina partially scraped by scalpel– SM – magnification 45 x

H3 sample was collected from a red area painted by spray (**fig.1,6-7**) apparently not optically altered.
The study of the H3 sample has shown the same layered structure of the H1:

- ***a)*** Traces of the plaster ground layer;
- ***b)*** Yellowish ground layer;
- ***c)*** White paint layer (prime coating);
- ***d)*** Red paint layer containing an alkyd resin Rutile and Polycyclic p., diketopyrrolo-pyrrole (DPP), PR254;
- ***e)*** Whitish thin and semigloss layer (patina) due to optical alteration of the layer *d*. About the same FTIR pattern of *d* layer, with less quantities of resin.

Fig. 6 "Oriental carpet of colors" – sample H3– after sampling

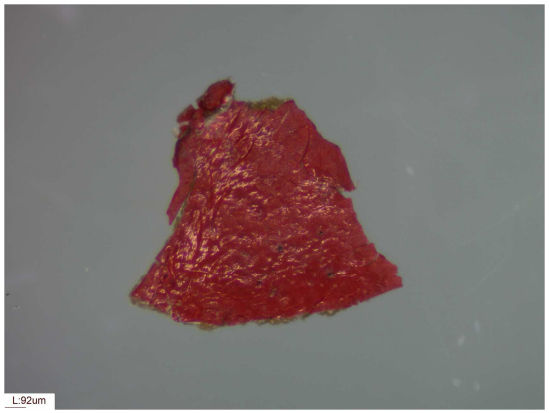

Fig. 7 "Oriental carpet of colors" – sample H3– SM – magnification 45 x

H4 sample was collected from a red area painted by roller (**fig.1,8-9**). The surface of the paint layer appears slightly darker, less porous and glossier than the inner (**fig. 9**); it is composed of an acrylic binder, Calcite as extender, the pigment has not been identified

Fig. 8"Oriental carpet of colors" – sample H4– after sampling

Fig. 9 "Oriental carpet of colors" – sample H4 – SM –magnification 30 x

H5 sample was collected from a white area painted by spray (**fig.1,10-11**) that was originally pink.
The study of the H5 sample has shown the same layered structure of the H1:

- ***a)*** Traces of the plaster ground layer;
- ***b)*** Yellowish ground layer, 120 µm thick;
- ***c)*** White paint layer (prime coating), 15-50 µm thick;
- ***d)*** Pink paint layer, 4-25 µm thick, containing alkyd resin as a binder and Calcite as extender;
- ***e)*** White thin (about 15 µm) layer due to optical alteration of the layer *d*. Same composition of the layer *d*, with minor quantities of resin. Raman spectra have shown peaks of Rutile, and probably disazopigment, pyrazolone PO34.

The paint layers d and e have been addressed to Py-GC-MS, that confirmed the presence of alkyd resin as binder

Fig. 10 "Oriental carpet of colors" – sample H5 – after sampling

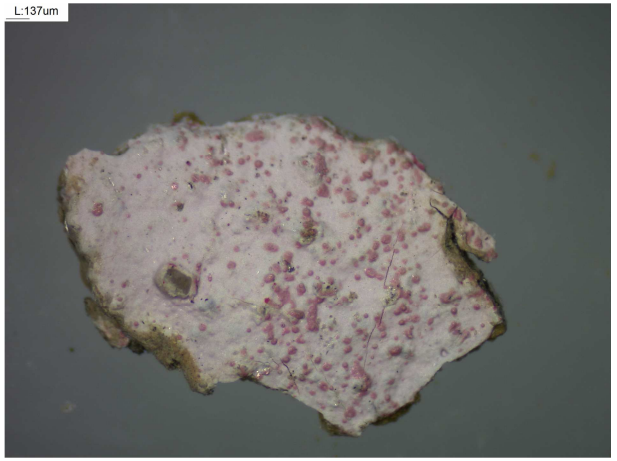

Fig. 11"Oriental carpet of colors" – sample H5 – SM –magnification 30 x

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