The Balla House in Rome: futuristic contest and industrial painting media

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The Balla House in Rome was the private residence of Giacomo Balla from 1929 until his death in 1958 and was conceived according to the futurist vision in every element of the furnishings and decoration: mural paintings, pictures, drawings, posters, embroidered fabrics, fashion clothes and furniture. After a conservation survey (directed by the art historian Patrizia Miracola) documenting every typology of artworks within the building, the ISCR has studied in depth and treated the triptych “Le mani del popolo italiano” (1926) seen to the left, painted on paper and lined on canvas, as well as the so called studiolo (1929) shown on the right, an interior space with decorated walls, wallpaper and furniture.

These paints appear very similar to industrial enamels: the glossy and flat appearance, the formation of large net craquelure (when applied to canvas), and the dripping effects observed are typical of the Nitrocellulose Lacquers and Alkyds. Of American and English origin, these paints were introduced in the 1930s but came later on the Italian market. Through the observation of their characteristics and a literature study, the Balla’s paints were presumed to be, before analyses and treatments, either phenol-formaldehyde resins, resol type, produced from 1905 (Standeven 2007), or oleo-resinous paints constituted by oil and terpenoid resins such as copal or rosin.

The analyses carried out on the samples are: microFTIR, SEM-EDX, XRF, Pyr-GCMS, GCMS

Triptych
The medium identified in the samples is a drying oil. Metallic salts of fatty acids have also been detected. The following pigments have been identified: Prussian Blue, Cadmium yellow, lead chromate, Schweinfurt green, chrome oxide, iron oxide black, zinc white, barium sulphate, a red organic colorant, sometimes mimetic and in one case cinnabar. The paper support is prepared with a yellow ground consisting of lead chromate, zinc oxide, magnesium silicates, gypsum and barium sulphate; it is not possible to exclude the presence of zinc sulphide and therefore the pigment lithopone.

Studio
The white ground, present on the door, is oil based, probably consisting of a drying oil. Metallic salts of fatty acids have also been detected, in addition to barium sulphate presumably added as an inert filler. Traces of oxalates are also present. Oil, gypsum, calcite and probably proteinaceous material have been found in the ground of the yellow sample taken from the door jamb. The medium of the paint layer in the samples taken from the door and the cupboard has been determined as oil based and/or terpenoid resins. In some cases, especially for the blue colour, the presence of metallic salts of fatty acids has been noted. The pyr-GCMS results have confirmed the presence of a drying oil in all the cases, with a best match for linseed oil. There has been no evidence of a phthalate-based alkyd resin in any of the samples. However, the use of formaldehyde as curing agent cannot be excluded. The medium of the red paint on the door and the cupboard has been determined to be a terpenoid resin, most likely rosin. The following pigments have been identified: yellow chromate, Prussian Blue, a red organic colorant, Schweinfurt Green. Inert fillers are either based on barium sulphate or kaolin, but are at times absent.

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