

# Materials and painting processes of Pedro Cabrita Reis: the artist's memory versus materials analysis

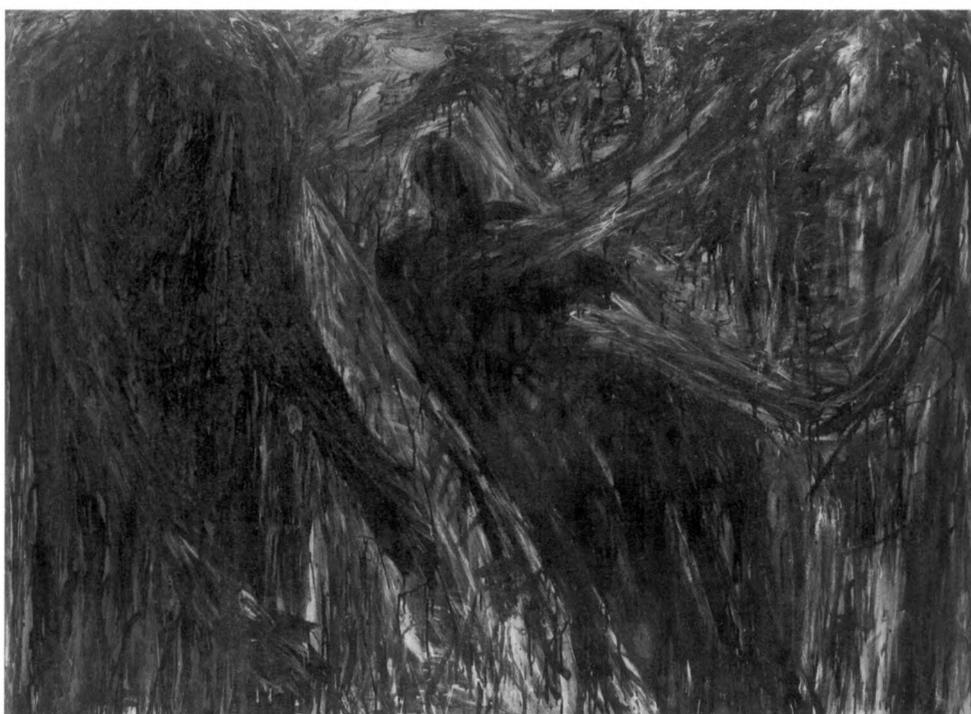
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Pedro Cabrita Reis (b. 1957) is one of the most internationally renowned contemporary Portuguese artists. The artist works regularly on series of paintings devoted to the same theme. His paintings relate to sculptures and installations in which he often assembles industrial materials.

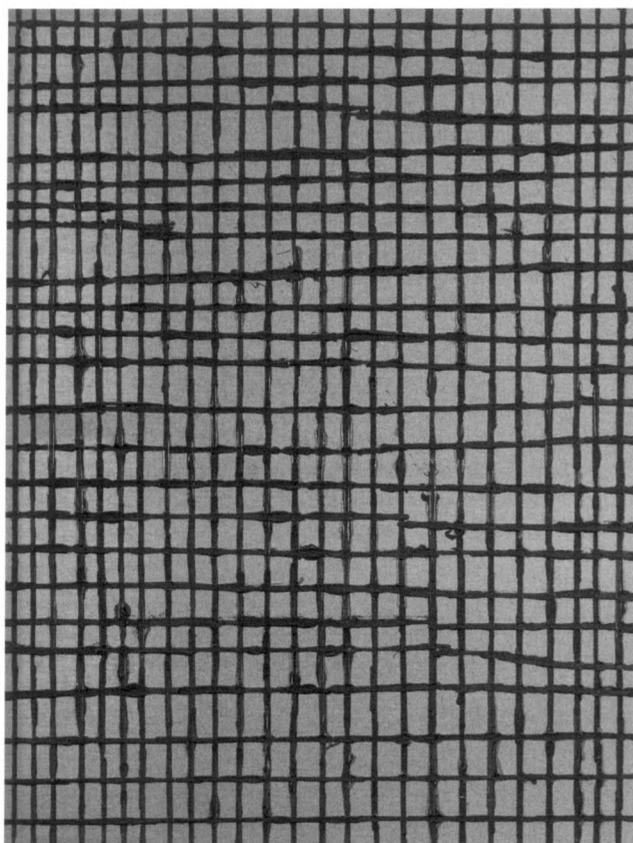
A study of six paintings on canvas of this artist's most characteristic periods, from the 1980s to the present, was conducted to find out the composition of the paint. The pigments, fillers and binders were identified by optical microscopy, energy-dispersive X-ray fluorescence analysis (EDXRF), Fourier transform infrared spectroscopy (FTIR), and scanning electron microscopy with energy-dispersive X-ray analysis (SEM-EDX). In addition, cross-sections were characterised by optical microscopy (observations were made at  $\times 200$  with a portable microscope), and infrared and ultraviolet photographs were

taken. Interviews with the artist were also conducted, which helped to clarify important issues such as concept and artistic intent, creative process, choice of materials and his views regarding the preservation of his works.

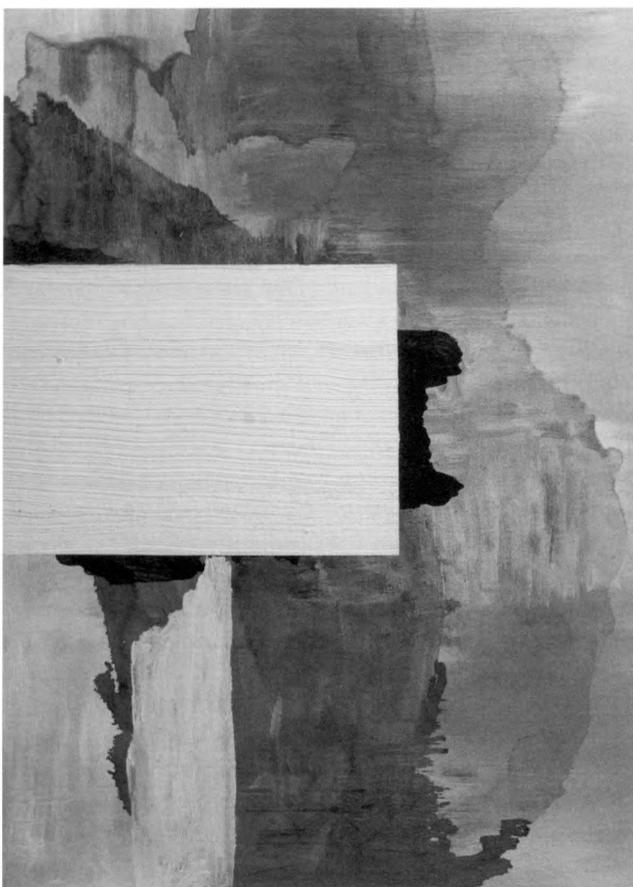
One of the paintings studied was *O Desejo do Eterno* (*Desire of the Eternal*) (Fig. 1) from the series *Os Discretos Mensageiros* (*The Discreet Messengers*) and according to the artist's statement only water-based industrial paints were used. The ground layer was applied directly on a stretched raw cotton cloth with a paint roller, while the artist used his own hands to apply the paint for the composition. He used a new type of water-based enamel paint: 'paints that at that time were revolutionary. They were called HITT, a product from Dyrup. It was the first time that someone had heard about water-based enamels, that dried quickly and tools could be washed more easily.'<sup>1</sup> FTIR



**Figure 1** *O Desejo do Eterno* (*Desire of the Eternal*), 1984. Mixed media on canvas, 175 × 240 cm. Collection Secretaria de Estado da Cultura, in deposit in Fundação de Serralves – Museu de Arte Contemporânea, Porto. (Photo: Luis Ribeiro. Published with permission of the owner.) (See Plate 95 in the colour plate section.)



**Figure 2.** *Casa Queimada (Burnt House) #3*, 2007. Acrylic on canvas, 130 × 150 cm. Artist's collection. (Photo: Luís Ribeiro. Published with permission of the artist.) (See Plate 96 in the colour plate section.)



**Figure 3.** *The 52nd Year #3*, 2008. Mixed media on canvas, 160 × 110 cm. Artist's collection. (Photo: Luís Ribeiro. Published with permission of the artist.) (See Plate 97 in the colour plate section.)

and SEM–EDX identified polyvinyl acetate (PVA), calcium carbonate and talc in the ground layer. Concerning the paint layers, surprisingly FTIR identified an alkyd binder in the black paint and an acrylic (pBA/MMA) binder in the yellow and red paints, possibly the industrial water-based paint HITT from Dyrup, mentioned by the artist in the interview. This work has the peculiarity of presenting three different binders – PVA for the ground layer, and acrylic and alkyd binders in the paint layer. The analysis complemented the information provided by artist and showed that in fact he mixed different types of paints with non-miscible mediums.

Another work was *Casa Queimada (Burnt House) #3* (Fig. 2), which belongs to a series related to grid sculptures made by the artist around the same time. In allusion to those works, the image consists simply of grids. For this particular series, the artist developed a special aluminium stretcher covered with wood on the outer edges in order to stretch the canvas. According to the artist's testimony, only artist acrylic paints from Winsor & Newton were used. Cabrita Reis explained that he handled the ink tubes like pencils, applying the paint directly on a raw fabric that had a brownish colour that served as a coloured ground layer. The analysis was in agreement with his statement and an acrylic binder (pBA/MMA) was identified by FTIR. The pigment identified by EDXRF is an iron oxide, probably burnt umber since manganese was detected.

A further work studied was *The 52nd Year #3* (Fig. 3), made in the year of the artist's 52nd birthday. This painting has the appearance of a watercolour, which was accomplished by using industrial coloured acetone to create a mottled effect. The ground layer was prepared by the artist and is composed of PVA and calcite. In the paint layer, the artist used acrylic paints (yellow and red) while the dark colour is a complex mixture of PVA and acrylic, asphalt and shellac.

The artist clarified important details about his techniques and creative process, in particular about his choice of materials, which was useful for the interpretation of the analytical results. However, his testimony did not always coincide with the analytical results as observed in the case of *Desejo do Eterno* where he had mixed several paint types. It was also possible to compare some of the different processes used by the artist by comparing old practices with current ones that permitted a better understanding of his development.

#### Appendix: Analytical details

- FTIR: Nexus 670 FTIR-Thermo Scientific spectrometer; Nicolet, detector MCT; spectra obtained in the 4000–650  $\text{cm}^{-1}$  region, resolution 4  $\text{cm}^{-1}$  and 100 scans using UV observation and a diamond cell; multicomponent analyses carried out with OMNIC and OMIN.
- EDXRF: portable equipment with an X-ray tube with a silver anode (0 to 35 kV and 0 to 100  $\mu\text{A}$ ), thermoelectrically cooled Si-PIN (AMPTEK, Inc.) detector, with an effective area of 7  $\text{mm}^2$ , resolution of 180 eV (FWHM) and 7  $\mu\text{m}$  thick Be window.
- SEM–EDS: imaging and elemental X-ray mapping was performed with an Evex Mini-SEM; software SX-3000 with X-ray nanoanalysis.

## Acknowledgements

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## Note

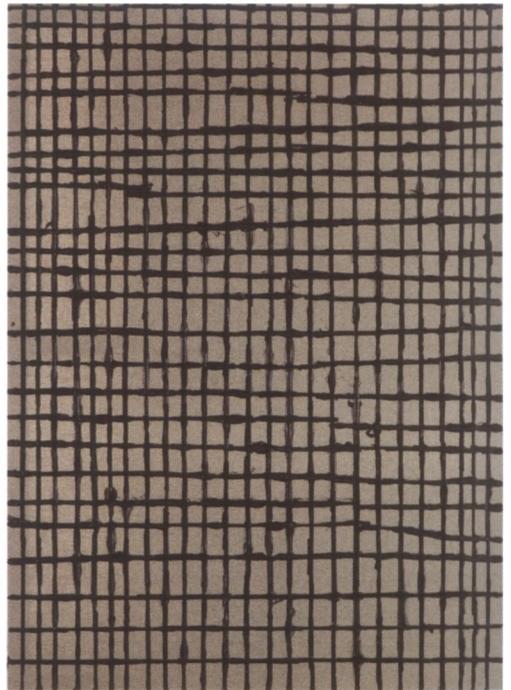
1. P. Cabrita Reis, interview with Ana Cudell, 9 October 2009.

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**Plate 95** *O Desejo do Eterno* (*Desire of the Eternal*), 1984. Mixed media on canvas, 175 × 240 cm. Collection Secretaria de Estado da Cultura, in deposit in Fundação de Serralves – Museu de Arte Contemporânea, Porto. (Photo: Luís Ribeiro. Published with permission of the owner.) (See Fig. 1, p. 212.)



**Plate 96.** *Casa Queimada (Burnt House) #3*, 2007. Acrylic on canvas, 130 × 150 cm. Artist's collection. (Photo: Luís Ribeiro. Published with permission of the artist.) (See Fig. 2, p. 213.)



**Plate 97.** *The 52nd Year #3*, 2008. Mixed media on canvas, 160 × 110 cm. Artist's collection. (Photo: Luís Ribeiro. Published with permission of the artist.) (See Fig. 3, p. 213)