



19th c. Coloured Stuccos and Plasters from Grilos' Church (Oporto, Portugal): Materials and Techniques Employed

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Abstract: The Oporto's St. Lourenço Church of the Jesuit College is locally known, since the St. Augustin Barefooted Eremites occupation (1779/80), as Grilos' Church. The Oporto's siege laid by D. Pedro and D. Miguel (1832/33) succeed in the college abandonment by Grilo's Friars. Throughout Augustin Friars presence period, the white plasters of the nave (end of 18th c.) were executed and it was constructed the Holly Sacrament Chapel (early 19th c.) with neoclassic coloured stuccos and plasters, influenced by Robert Adam, Luigi Chiari and Teixeira Barreto ornamental motifs. Pigments were added to the external layer to imitate the marble and to achieve the "base" colour of the panels. This study of the blue, rose and white stuccos and plasters of H.S. Chapel of Grilo's Church allows carrying out useful database on the original mortars composition by the use of different analytical techniques, important to select the most adequate solutions for

restoration interventions. Optical microscopy, XRD, TG-DTA, SEM EDS, XRF analysis results were considered to identify the composition of different layers and to provide mineralogical, microstructure and chemical characterization of the mortars components and to quantify the binder content in those mortars. These results were compared with collected information on compositions from other sources. This study allowed the identification of the decay causes of decorative stuccos and plaster, suggesting that water retention in the masonries and wooden laths structure of the dome of the chapel is the main factor. © 2016 Wiley Periodicals, Inc. *Col Res Appl* 41, 246–251, 2016; Published Online 13 February 2016 in Wiley Online Library (wileyonlinelibrary.com). DOI 10.1002/col.22041

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INTRODUCTION

Stucco and plaster works play an important role in the decoration of architecture in all Europe and in Portugal. The Grilos' Church of Oporto is situated on a hill slope facing the river Douro. Affiliated with the structure of the Church of Gesù in Rome, it has a single nave with lateral

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