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Towards a sustainable preservation



ORALS

A delicate balance: conserving brittle, brown-tinted paper drawings

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A collection of 19th and early 20th-century drawings by renowned artists, housed in Portuguese museums, is severely deteriorating. Their paper substrates, tinted with an iron-based agent, are currently highly brittle and dark brown-toned. The darkened paper significantly diminishes the contrast with charcoal and graphite lines, rendering many details nearly invisible (Fig. 1a). Additionally, the paper's brittleness, identical to corroded iron gall-ink lines, leads to cracking and losses. Infrared reflectography provides valuable insights into these obscured drawings (Fig. 1b). However, a comprehensive conservation strategy is essential to stabilise the paper, reduce discolouration, and improve flexibility. Preliminary X-ray fluorescence spectrometry (XRF) analyses have identified iron as a primary component in the papers' toning agents. To further elucidate the degradation mechanism and develop effective treatment strategies, a detailed chemical characterization of the toning agents is underway, employing Raman spectroscopy and high-performance liquid chromatography (HPLC). Additionally, conservation treatments using different iron-chelating agents are being explored. By understanding the nature of the degradation and the efficacy of conservation treatments, we aim to develop effective strategies for the long-term preservation of these invaluable artworks.



Figure 2. Drawing by Tomás da Anunciação (1818-1879), Museu Nacional de Arte Antiga, inv. 2434: Picture of reflected light (a) and infrared reflectography (b).