

Multi- analytical X-ray study of the honorary decoration of the Order of Christ

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The analysis of cultural heritage objects can generate information about techniques of minting of the time, giving information not only on chronology but also regarding preparation methodology, and provenance. In this investigation, three honorable mentions (metal artifacts) of the order of Christ (cross, lady's and gentlemen's medal) were performed using Energy Dispersive X-ray Fluorescence (EDXRF) technique. This analysis were performed with a portable Amptek assemble of Si-drift XR-100SSD ($25 \text{ mm}^2 \times 500 \text{ }\mu\text{m}$) detector, equipped with a $12.5 \text{ }\mu\text{m}$ Be entrance window, pre-amplifier and digital pulse multichannel processor and Ag target. Analytical parameters were $5 \text{ }\mu\text{A}$ and 30 kV for 180 s at 2 mm distance to the target. Points distributed in distinct parts were analyzed in each of the metal artifact. The WinQxas software was employed for spectral analyses. These data provide to curators and historians knowledge for cataloging and subsidies for correct storage. In addition, they can be used to identify forgeries (heritage appreciation).