

PUBLISHED PAPER

Journal: Â Spectrochimica Acta Part B: Atomic Spectroscopy

Paper: Â X-Ray Fluorescence and Laser-Induced Breakdown Spectroscopy analysis of Roman silver denarii

AUTHORS: L. Pardini, A. El Hassan, M. Ferretti, A. Foresta, S. Legnaioli, G. G. Lorenzetti, E. Nebbia, F. Catalli, M.A. Harith, D. Diaz Pace, F. Anabitarte Garcia, M. Scuotto, V. Palleschi
Â

Abstract: Â In this paper we present the results of a study performed on a large collection of silver Roman republican denarii, encompassing about two centuries of history. The joint use of Laser-Induced Breakdown Spectroscopy (LIBS) and X-Ray Fluorescence (XRF) spectroscopy allowed for an accurate determination of the coins' elemental composition; the measurements, performed mostly in situ at the "Monetiere"™ in Florence, revealed a striking connection between the "quality"™ of the silver alloy and some crucial contemporary events. This finding was used to classify a group of denarii whose dating was otherwise impossible. The comparison with other contemporary denarii disproves a recent theory on the origin of the so called "serrated"™ denarii (denarii showing notched chisel marks on the edge of the coin).