

Research on Naser al-Din Shah Qajar Coins Minted in Herat Using PIXEElement Analysis

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Abstract

After the sudden death of Yar Mohammad Khan Zahir al-Dawla (1258-1267 AH), in 1267 AH, a lot of violence arose in Herat; In the midst of this turmoil, many people came to power under and under the auspices of the Iranian government, and eventually Dost Mohammad Khan Barkzai (1258-1280 AH) separated Herat from Iran forever in 1279 AH. During the turmoil in Herat (1267-1280 AH), coins were named Naser al-Din Shah (1264-1313 AH) were also dated to 1269, 1273-1279 AH. Multiplied in this city; Further attention to these coins raises two issues, one is that the monetary system of the Nasserite era did not follow a specific structure, and the coins of each place were minted with different grades, and the other was usually minted during tense periods. The economic power of each city was weakened, and the value of the coin was greatly reduced; Therefore, the elemental analysis of the coins of this period, using the PIXE method, due to its speed, high accuracy and non-destructiveness, can provide a good analysis of this situation; Therefore, 21 coins in 9 different dates were analyzed to study this issue. As a result, it was determined that the silver grade of these coins was higher than %90, compared to the main mints, namely Mashhad (%84), Tabriz (%82), Tehran (%90), Isfahan (%84), and Shiraz (%90) is in a high positions, and this shows the citizenship of the main coinage system, the Tehran system, which has not been deducted from the standard of these coins even at the height of tensions. Finally, valuable information was obtained on how to decompose coin metal with copper and iron metals, and the type of silver mines used, namely Cerussite mines.

Keywords: Herat, Numismatics, Naser al-Din Shah Qajar, PIXE Experiment, Archaeometry

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