

Interdisciplinary research of iron casting technologies in the town of Juketaw during the golden horde period

Shaykhutdinova E., Khrumchenkova R., Nail N., Alexander B., Ruslan Y., Sitdikov A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The work features the results of interdisciplinary research of cast iron dishware fragments discovered in the territory of one of the largest towns of the Volga Kama region in the Golden Horde period. The microstructure of cast iron samples and surface mapping have been studied using scanning electron microscopy (SEM), and the micro elemental composition was determined by emission spectral analysis (ESA). The characteristic features of the manufacturing technology have been revealed as a result of research of the elemental and phase composition across the area of the transverse fracture and longitudinal polished section. The results of SEM allowed to carry out a comparative analysis with archaeological material from the territory of Bolgar settlement - capital of the Bolgar Ulus of the Golden Horde. According to the results of micro elemental analysis, two groups of cast iron were determined with differences attributed to various sources of raw material.

Keywords

Bolgar, Chemical composition, ESA, Golden Horde, Juketaw, Metallurgy, SEM, Structure, Volga Bulgaria

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