

**Abstract:**

In terms of pottery, Central North of Iranian plateau is of particular importance for the archaeologist. Sialk III culture is known for the painted buff wares and also its first place, Tepe Sialk, that was found. In this thesis, pottery samples excavated from Sialk Tepe, Arisman and Ghabrestan Tepe, three important prehistoric sites of Central North of Iranian plateau, were investigated using petrography, XRD and XRF analyses to develop our understanding from pottery making technics during the 4<sup>th</sup> Millennium BC in this region. The study of pottery of these three sites as most diagnostic 4<sup>th</sup> Millennium sites of this region showed advanced and specialized pottery making technics such as using pottery wheel, non-organic temper, advanced kilns and use of high and controlled firing temperature. Compositions of the ceramics indicated the potters of these three sites used the clay of surrounding lands for pottery making. In one hand, Potters by using pottery wheel improved feature of forming of pots and in other hand, by using advanced kilns they increased firing temperature in order to producing buff wares. These mentioned agents led to producing integrated wares in Central North of Iranian plateau during 4<sup>th</sup> Millennium BC.

**Keywords:**

Pottery, 4<sup>th</sup> Millennium BC, technology, north center of Iran, Sialk Tepe, Arisman, Ghabrestan Tep