Archaeometric characterization of 17th century tin-glazed Anabaptist (Hutterite) faience artefacts from NE-Hungary

Production of tin-glazed earthenware (faience) in Central-East Europe was mainly propagated by the Anabaptists, namely a German speaking Anabaptist community, the Hutterites (locally called Habans or New Christians). The Hutterites excelled in the crafts, among others in pottery production. They started faience production in the late 16th century, when the Hutterite tin-glazed pottery was inspired by the shapes and decorations of the enormously popular contemporary Italian maiolica, the “bianchi” di Faenza.

Our archaeometric data are the first results of a long-term project to reconstruct the production technology of the Hutterite faience. No contemporary written documents are known about the production technology of this type of ceramic; in addition no systematic archaeometric analyses were performed earlier. We performed microanalytical investigations on 17th century Hutterite tin-glazed archaeological artefacts excavated at a gun-foundry in Sárospatak, NE-Hungary. The results are compared with the analytical data of the precursor, the Italian maiolica.

The studied Hutterite faience objects were produced with lots of similarities to the Italian maiolica. Calcareous clay (14 to 22 wt% CaO) was used for the buff-coloured ceramic body. Up to about 400 μm thick white (and blue) tin-opacified lead-alkali glaze was applied on the biscuit-fired body, the glaze suspension contained sand admixture and significant amount of common salt and was not fritted before application. Decorations are coloured glazes comparable in thickness with the opaque glaze and not covered by an outer transparent glaze (coperta). Colorants used were lead antimonate for yellow, cobalt pigment with arsenic, nickel and iron for blue, copper pigment for green and manganese pigment for black. Decorations were applied on the unfired opaque glaze and maturing of glazes occurred during the second firing. In the black glaze manganese-bearing particles, mineralogically braunite and hausmannite identified by Raman microspectroscopy, were formed during the firing (and subsequent cooling).

The main difference compared to the Italian Renaissance maiolica is the higher tin content (16 to 20 wt% SnO₂) of the white glaze of the studied Hutterite faience together with 17 to 26 wt% PbO content. The elevated tin oxide content is similar to the typical tin oxide contents of the glazes (mainly white glazes) of della Robbia sculptural ceramics. High-quality white tin glaze seems to have been produced by deliberate use of high amount of tin oxide instead of increasing the glaze thickness as in the case of e.g. "bianchi di Faenza".

The studied Hutterite faience artefacts: fragments of a jug (on the left), two bowls (in the middle) and a blue-glazed tazza (on the right)