

## **DESCRIPTION FOR THE GENERAL PUBLIC**

Faience wares, beside ceramics, are the most numerous set of arts and crafts antiquities recovered from archaeological sites of the entire Mediterranean Basin. Due to the complex processes of obtaining material for production and manufacture of faience objects, scientists generally assign them to the first high-tech ceramics with high aesthetic value in human history.

Despite long-term, numerous studies of faience products, their production technology has not been recognized yet. So far, scientists focused on typological and stylistic-iconographic analyses. The small number of precisely dated objects has discouraged from undertaking research on the production technologies. It was the investigations performed in 1985-1995 by the Polish-Egyptian Archaeological Mission in Tell Atrib under the supervision of Professor Karol Myśliwiec that supplied data, which can be used to study faience objects based on precisely dated material.

The main aim of the project is recognition of the production technology of Egyptian high-tech faience from the Ptolemaic Period and supplying answers to a series of questions. What was the composition of the silica paste used in the production of faience ware? What were the raw materials used for faience production? What components gave the siliceous paste its plasticity? How were the faience objects formed and dried? What was the way of firing faience objects and in what temperature? What was the course of particular production stages? What criteria did the faience kilns have to fulfil?

The performed investigations should supply answers to these questions, e.g. on the grain size, mineral and chemical composition of the material used for production and its origin, as well as the admixtures used for giving plasticity to the silica paste. This should allow for recognizing the forming and drying processes of faience objects. The temperature of firing faience will also be precisely determined.

Beside traditional investigation methods, such as optical microscopy or X-ray analysis, modern analytical techniques will also be used: electron scanning microscopy (SEM, ESEM), microprobe (EPMA), chromatography, plasma mass spectrometry and spectrophotometry. Results of preliminary research have justified the applied methodology and should allow for the reconstruction of the production technology of faience objects.

Based on archaeological data and individual investigations, particular phases of faience production will be recognized and characterized. Analyses performed on laboratory-prepared copies of faience objects will allow for verifying the accepted assumptions. In effect, a methodology of studies of faience objects will be elaborated. This should allow for a complex analysis of the investigated objects and tracing the evolution of production technologies over the centuries.