

## **Using innovative techniques to study and identify ancient copper alloys: The case of Middle Bronze Age Lapithos**

### ***Research Team***

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### ***Abstract***

Lapithos is one of few known coastal sites of the Early and Middle Bronze Age on Cyprus. A large number of tombs excavated in the area of Lapithos in the early 20th century produced over 1800 copper-base artefacts and more than 150 imported objects, primarily of faience, gold, silver, lead and copper. These suggest that Lapithos was involved in an internal procurement network, which linked the specific settlement with mining villages located close to Troodos copper ore bodies, and an international maritime trade in metals and other goods conducted along sea routes which passed between the south coast of Anatolia and the north coast of Cyprus in the first half of the 2nd Millennium BC.

The aim of this research project is the investigation of the use of non-local tin and alloying, recycling and mixing practices on Cyprus in the MBA, and the extent to which Lapithos and probably other north coast Bronze Age settlements, such as Karmi, Vasilia and Belapais, have been involved in an international trade in raw materials. In more specific, more than 400 copper-base artefacts from the cemetery of Lapithos Vrysi tou Barba, will be non-destructively analysed using a handheld pXRF instrument for the determination of the alloy types used for the manufacture of the artefacts. In addition, a significant number of copper-base artefacts from the sites of Karmi Palealona and Lapatsa, Vasilia and Belapais Vounous, will be also analysed and the types of alloys are going to be compared with the Lapithos ones in order to have a clearer image regarding the use and distribution of copper alloys in the northern part of the island during the MBA. Furthermore, all metal artefacts will be included in a typological study and in an on-line database.

Another very important aim of this project will be the investigation of the possible connection between Lapithos and the northern coast with the high arsenic copper ores of the Limassol Forrest region, the only known geological area in Cyprus with arsenic concentration high enough in order to produce arsenical copper, the predominant MBA alloy.

This interdisciplinary research project will provide new data which will also shed light on issues regarding the activities of Cypriot metalsmiths in the northern coast of Cyprus during the MBA, the use of imported raw materials, such as tin or lead, the identification of imported artefacts, the existence of recycling practices and the correlation of certain types of alloys with specific categories and functions of artefacts.