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Multi-technique instrumental approach for the characterization of metallic archeological artifacts

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The study of the grave goods has long been the subject of study by many researchers who, through the finds, try to reconstruct the habits and customs of disappeared civilizations. In particular, the characterization of metal artifacts (weapons, jewelry, everyday objects) allows to identify the source of the raw materials used for their manufacture, forging technologies, trade routes, and cultural interactions [1,2].

The aim of this preliminary study was, by using a multi-technique instrumental approach (XRD, Raman, XPS, XRF), the chemical-mineralogical characterization of archaeological metal finds (figure 1) from the necropolis of Siris - Heraclea (Basilicata region). The analyzes highlighted, in some of these objects, the presence of a superficial state of alteration confirming what was reported by [3]. We are carrying out biological analyzes in order to verify the presence of biological agents, which, if present, could have triggered the corrosion processes.

Figure 1. *Archeological objects: (a) Stick, (b) Arrowhead, (c) Spicillo*

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