Nicolas Gros

Julien Colaux, Christophe Flament, Francesca Cecchet

Université de Namur, 2 rue Grafé, Namur, Belgium

nicolas.gros@unamur.be

Micro-Raman analysis of ancient silver coins: digging into composition, corrosion products and surface morphology.

Silver coins are valuable archaeological objects as they inform precisely on the period, economic relations and even political events from the site they were found. Their material study helps distinguishing between several ores that may have been used and can reveal possible alloys or production processes[1]. However, ancient silver coins can show various corrosion products on their surface which limits non-invasive analysis[2]. Recent publications have allowed a better understanding and identification or silver corrosion products with the use of Raman spectroscopy[3]. Here, one silver tetradrachm minted in the name of Alexander the Great has been studied using micro-Raman spectroscopy. Several corrosion products have been found, as well as impurities and morphological elements revealing recent handling and restoration treatments. This preliminary work aims to better understand the patina of antique coins for upcoming multi-instrumental surface analysis of a large corpus.

References

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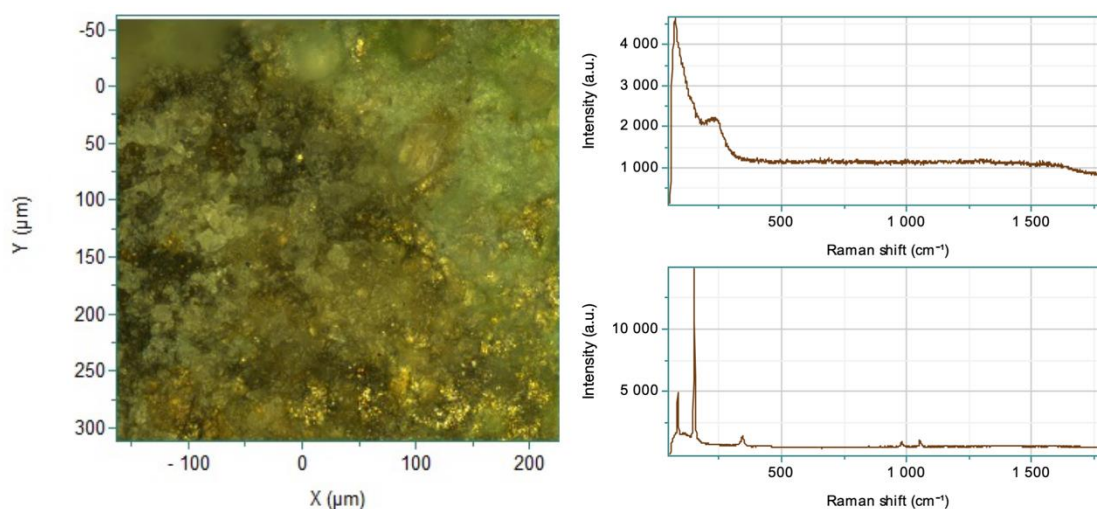
Figures

Figure 1: Microscope image of the surface of the silver coin and selected spectra.