Geological materials in archaeological findings

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Geological materials are significant part of archaeological findings. They can be found unchanged or slightly changed (eg. in the form of jewellery, simple tools, pigments). On the other hand, they can be significantly altered forming man-made materials (eg. glass, ceramics).

The main goals of this presentation are: (1) to classify different geological materials such as minerals, rocks, soils, sediments and ores, and present their usage in ancient times; (2) to describe their occurrences and availability in the nature with emphasis on the area of today's Croatia and south-eastern Europe; (3) to describe their characteristics which made them raw materials, as well as their changes during technological processes; and (4) to describe tools for provenance determinations.

Purpose of the presentation is to acquaint archaeological audience with the possibilities and problems of provenance analysis.

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Archaeometric analysis of pottery as a tool for in-depth technological and social-economic insights and changes

Archaeometric analyses of ceramics, such as thin-section petrography, are used to answer both practical and theoretical archaeological research questions. Various types of qualitative and quantitative data can be obtained by different techniques. In this paper the importance of visual data, beyond macroscopic examination with the naked eye, will be discussed. Micro-visual data are essential to the understanding of ceramic technology, e.g. the use of scanning electron microscopy (SEM) images allows us to examine the microstructure of the ceramic paste, which is too fine to be identified using simple optical microscopy with a polarised microscope. This type of examination will provide information on firing temperature, interlayers and interfaces present in the ceramic body, which cannot be visualised using other chemical techniques. In addition, the option to analyse quantitatively regions of a sample that can be selected visually provides a more complete understanding of the archaeological material. The accuracy and precision of quantitative analytical data is essential.