

Ink Analysis of the Dead Sea Scrolls: Preservation and Archaeometry

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Abstract

We present the first steps in the mapping of the Dead Sea Scrolls inks by combination of micro X-ray fluorescence, FTIR spectroscopy, mass spectrometry and scanning electron microscopy.

Former investigations revealed that most Dead Sea Scrolls were written with carbon inks. In addition to carbon, the main component of the ink, we find inorganic trace materials that can be used to identify a specific type of ink. Furthermore, binding agents present in the carbon inks might serve as additional identification markers.

The question of the corrosion of the Genesis Apocryphon and other five manuscripts has to be traced back to ink components (such as copper) that might act as a catalyst for the degradation of the parchment. However, copper alone cannot be held responsible for the damage. The interaction with other factors, like tannins is considered.