

Abstract

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Studies in organic archaeometry VII - Differentiation of wood and bark pitches by pyrolysis capillary gas chromatography (PY-CGC).

Concentrations of the stable isotope oxygen-18 in precipitation samples have been modeled by geographical and meteorological features of the sampling stations.

Tars and pitches were prepared from wood and bark of various deciduous trees and conifers and analysed with the intention to distinguish between various starting materials. All this was done before the background of an archaeometrical problem: to provide a basis for the chemical identification of those pitches which are frequently found in archaeological excavations.

Intending to extend the already existing possibilities for such analyses the present paper is dealing with the application of pyrolysis coupled with capillary gas chromatography and by subsequent chemometric studies. It could be shown that by this technique indeed not only tars and pitches prepared from deciduous trees and from conifers could clearly be differentiated, but that even respective species could be identified. Thus a fundament is provided for future studies aiming to identify the starting material of real archaeological finds by a novel method which requires by far less quantities of sample material as compared to the methods hitherto used by us.