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Title: An analytical method to identify traces of white phosphorus on burned victim clothes

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An analytical method to identify traces of white phosphorus on burned victim clothes

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Highlights

- Identify traces of white phosphorus on burned victim clothes.
- Using gas chromatograph mass spectrometer (GCMS) for finding white phosphorus.
- Using solid phase microextraction (SPME) for finding white phosphorus.
- White phosphorus injuries can be verified by using SPME-GCMS.

Abstract

We report for the first time, the chemical identification of phosphorus on the remains of burned clothes taken from an injured woman. The woman was accidentally burned as a result of spontaneous combustion of a "stone" pebble-like material her daughter picked up innocently on a beach. The remains of the woman's clothes were analyzed by gas chromatograph mass spectrometer (GCMS) after headspace adsorption using solid phase microextraction (SPME). The results of this test showed that the injuries were due to phosphorus, leading to the understanding that the "stone" was actually white phosphorus.

This method can help both forensic investigators in a crime scene investigation and physicians that need this information in order to give the correct treatment to their patient.

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