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## The application of portable GC-MS on the petrochemical wharf

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There are many kinds of volatile organic compounds (VOCs) volatilized in the air when the petrochemical wharf are working, and most of them are harmful to people. Since the VOCs detector usually matches given kinds of gases, if the exact kind of gases is undefined or is wrongly informed, there will be a big mistake in detection result. The mass spectra have an advantage over determining the gas kinds, but it's usually heavy and its sampling mode is not convenient for quick detection. To resolve this problem, a method based on portable GC-MS for VOCs determination is developed, which is based on the portable GC-MS technology. The VOCs are directly extracted by solid phase micro extraction head for 120 seconds. After that, they are analyzed on the portable GC-MS, determined by retention time and MS peaks, quantified by external standard method. It only takes 6.4 min from sample extraction to get the result. However, the linear correlation is larger than 0.98, and the minimum detectable concentration is lower than half of their occupational exposure limits. In the simulation test, the relative error is lower than 4.4%. This method can directly sample in the field, rarely depends on external conditions, and is very convenient to carry. It takes very short time to complete the detection, at the same time it can determine and quantify multiple kinds of VOCs at a time. So, it will be very suitable for the VOCs emergency detection in the leakage scene.

## Biography

Zhao Yun has completed his PhD at Institute of Chemistry, Chinese Academy of Sciences, China. He is an Associate Researcher and Director of a research team focusing on VOCs detection at China Waterborne Transport Research Institute. He has published more than 10 papers in reputed journals.

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