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## Ion Science Tiger is hot property for German fire investigation consultancy

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### Hand held photoionisation (PID) instruments used to help reveal defective components, fraud or workshop mistakes

German fire investigation consultancy, Brandursachenermittlung, has purchased two Tiger volatile organic compound (VOC) detectors from Ion Science ([www.ionscience.com](http://www.ionscience.com)) for use as part of the fire investigation activities it conducts on behalf of insurance companies, the legal system, vehicle manufacturers and private clients. The advanced hand held photoionisation (PID) devices replaced old competitor systems which had proved unreliable due to poor sensitivity levels.

Brandursachenermittlung, located in the city of Bochum, investigates the cause of fires across Germany, Switzerland and Austria. The company's consultants examine vehicles and residential and industrial buildings, with the intention of revealing defective components, fraud or workshop mistakes.



The consultancy's two specialist teams, which include two independent experts, investigate approximately 200 cases a year, with the aim of collecting evidence and producing reports that are usable in court.

Marie Fabisch from Brandursachenermittlung comments: "We first had the chance to test the Tiger during a demonstration by another fire investigation company. We were less than satisfied with the sensitivity of our old detectors from another manufacturer – often we smelled petrol before our equipment detected it. They were also increasingly prone to error. We liked the Tiger as soon as we tried it so purchased two of the devices from Ion Science Messtechnik.."

The Tigers are used to facilitate the detection of fire accelerating substances. Only detected substances or measured values of authorised laboratories are accepted in court. To avoid excessively high costs in every single case, the German consultancy uses the Tigers to select the cases which are worth pursuing. The investigators abstain from taking a sample if there is no significant detection of VOCs by the devices.

The teams primarily use the Tigers in the boot, passenger seats and footwells of cars and other motor vehicles. Measurements in both vehicles and buildings are taken at diverse lattice-like points.

Marie continues: "The aim of detecting arson is to reveal an offence and secure a conviction. We are strictly objective and analyse existing evidence whilst using the recognised elimination method. In suspected arson cases, it is part of the investigation to prove that there is no other possible cause of fire.

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“We use the Tigers to identify hydrocarbon compounds, such as those found in petrol, alkanes, alkenes and cycloalkanes. In general we search for every kind of fire accelerating substances, including grill lighters, lighter fuel, liquid glue and cleaning agents.”

Significant values can already be 1-20 parts per million (ppm). Depending on the period of time between the occurrence of the fire and the examination potential volatile gases may already be partially gone. As a result, values always vary and sometimes the measured values reach 100 ppm or more. The extinguishing foam used by fire brigades contains proteins and other hydrocarbon compounds which can produce falsified results and make usable measurements difficult.

The consultants take photographs while using the Tigers and document several measured values at the same time. If a high quantity of hydrocarbon compounds are detected, they will go on to take samples for analysis by an authorised laboratory using gas chromatography and mass spectrometry.

Marie concludes: “Using the Tiger is relatively simple but it is the compact, easy to hold design which has proved to be a major advantage. We had portable detectors in cases with long probes before which didn’t stand the test. Overall, the Tiger is precise and faultless.”

A robust hand held VOC detector, Tiger provides a dynamic detection range of 1 parts per billion (ppb) to 20,000 ppm, offering the widest measurement range of any other VOC instrument on the market.

Ready to use, straight out of the box, the Tiger requires no complex set up procedures via a PC to perform basic functions and provides the best available VOC detection and software features available.

It also has the fastest response time on the market of just two seconds and can be connected directly to a PC via the USB offering extremely fast data download capabilities. The Tiger has been designed for the safe replacement of batteries in hazardous environments and is intrinsically safe (IS) - meeting ATEX, IECEx, UL and CSA standards.

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