Title (en)

METHOD AND DEVICE FOR DETECTING AND IDENTIFYING NOT EASILY VOLATILIZED SUBSTANCES IN A GAS PHASE BY MEANS OF SURFACE-ENHANCED VIBRATION SPECTROSCOPY

Title (de)

VERFAHREN UND VORRICHTUNG ZUR DETEKTION UND IDENTIFIZIERUNG VON IN EINER GASPHASE VORLIEGENDEN SCHWER FLÜCHTIGEN SUBSTANZEN MITTELS OBERFLÄCHENVERSTÄRKITER VIBRATIONSSPEKTROSKOPI E

Title (fr)

PROCÉDÉ ET DISPOSITIF DE DÉTECTION ET D'IDENTIFICATION DE SUBSTANCES TRÈS VOLATILES PRÉSENTES DANS UNE PHASE GAZEUSE, PAR SPECTROSCOPIE VIBRATIONNELLE EXALTÉE PAR EFFET DE SURFACE

Publication

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Application

EP 14718398 A 20140416

Priority

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Abstract (en)

[origin: WO2014170400A1] The invention relates to the identifying of not easily volatilized substances, in particular hazardous materials, in a gas phase. A measurement cell (2) and a gas supply device (14) connected to the measurement cell (2) are heated and a plasmonic surface (1) arranged in the measurement cell (2) is temperature-controlled such that the plasmonic surface (1) has a lower temperature than the measurement cell (2) and the gas supply device (14). The gas phase is guided through the gas supply device (14) into the measurement cell (2) in such a manner that the gas phase reaches the temperature-controlled plasmonic surface (1). Substances adsorbed from the gas phase on the plasmonic surface (1) are analyzed by an optical process. Surface-enhanced Raman spectroscopy or surface-enhanced infrared spectroscopy can be used as the optical process. Selectivity can be increased by combining both methods. Selectivity can be additionally increased by using a gas detector, preferably an ion-mobility spectrometer, along with one or both optical processes, and thus the false alarm rate reduced without loss of time.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2014170400A1

Citation (examination)

US 2010053605 A1 20100304 - RAGUCCI ANTHONY J [US], et al

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