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(54) **INTEGRATED ANALYSIS DEVICE FOR SIMULTANEOUSLY DETECTING EBCS AND VOCS IN HUMAN EXHALED BREATH**

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CPC **A61B 5/082** (2013.01); **A61B 5/097** (2013.01); **G01N 33/0047** (2013.01); **G01N 33/497** (2013.01)

(58) **Field of Classification Search**
CPC **A61B 5/082**; **A61B 5/097**; **G01N 33/0047**; **G01N 33/497**

See application file for complete search history.

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(57) **ABSTRACT**

The present embodiments disclose a device including a module for sampling, separating and enriching a detected object, an exhaled breath condensates (EBCs) detection module and a combined volatile organic compounds (VOCs) detection module. The sampling module is connected with the EBCs detection module via a syringe pump for sample injection and is connected with the combined VOCs detection module by a capillary separation column. EBCs and VOCs in human exhaled breath are simultaneously sampled, separated and condensed; the heavy metal ions, cell factors, etc. in the collected EBCs are detected with a light addressable potentiometric sensor (LAPS); the condensed VOCs can be quantitatively detected by the combined VOCs detection module with a high sensitivity; and a heating rod and a platinum resistor can be conveniently replaced because a separated outlet heating piece is designed in the combined VOCs detection module.

8 Claims, 5 Drawing Sheets

