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Krogh et al.

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(54) **SYSTEM AND METHOD OF DELICATE
MEMBRANE CONDENSED PHASE
MEMBRANE INTRODUCTION MASS
SPECTROMETRY (CP-MIMS)**

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CPC **H01J 49/0436** (2013.01); **H01J 49/0031**
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USPC 250/281, 282, 288
See application file for complete search history.

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(57) **ABSTRACT**

Systems and methods for analyzing a sample comprising an
analyte selected from a volatile organic compound, a semi-
volatile organic compound, a non-volatile organic com-
pound, a polar organic compound and a halogenated non-
volatile organic compound are provided. The systems
comprises an ionization source, a flow cell or an immersion
probe with a delicate membrane, the flow cell or immersion
probe for accepting the sample, and the delicate membrane
interface in fluid communication with the ionization source
and a mass spectrometer. The flow cell system further
comprises a simultaneously matched pumping in and out
delivery (SMPIOD) system for delivering an acceptor phase
comprising the analyte from the delicate membrane interface
to the mass spectrometer at a constant acceptor flow pressure
and a constant acceptor flow rate.

21 Claims, 23 Drawing Sheets

