

The IFCC Establishes a New Working Group on Volatolomics

Milan, 7th August 2019 - The new Working Group on Volatolomics (WG-Vol) is part of the new Emerging Technology Division (ETD) that was ratified in 2017. It provides current awareness of emerging technologies likely to have important clinical diagnostic applications in the near future - one of those emerging technologies is volatolomics (i.e., breath analysis).

Members of the new WG-Vol are Dr Larry Kricka – US (Chair), Dr Paolo Fortina - US (Member), and Dr Joesph Wiencek – US (Member) and the terms of reference for the new working group are to develop a survey of the diagnostic applications of volatolomics (breath analysis) and to develop periodic updates of the volatolomics survey over the next 3 years.

Breath analysis is not new and already has a few, but very specific applications (e.g., breath alcohol testing, ¹³carbon/¹²carbon-based tests). One aspect of current work on volatolomics centers on finding diagnostic utility in the pattern or signature of volatile organic compounds (VOCs) in breath. Breath analysis is an attractive proposition because this type of testing is non-invasive, applicable to the point-of-care and offers the possibility of real-time clinical management. Already, there are more than 10 companies focused on the clinical diagnostic applications of volatolomics employing diverse analytical technologies (breath analysis analyzers are sometimes known as “electronic noses”). The broad scope of diagnostic applications under investigation and development ranges from breath glucose testing to testing for different types of cancer.

Volatolomic technologies are diverse and include different types of mass spectrometry [e.g., gas isotope ratio mass spectrometry (GIRMS), selected ion flow tube mass spectrometry (SIFT-MS), field asymmetric ion-mobility spectrometry (FAIMS), secondary electro-spray ionization-MS], sensors and sensor arrays (e.g., copper bromide-based sensor, colorimetric high dimensional sensor array), gas chromatography (e.g., GC SAW). Further notable aspects of breath analysis technologies are the use of artificial intelligence, cloud-based analysis of data and analyzers linked to a smartphone.

The survey will be published as a pdf on the WG-Vol website (<http://www.ifcc.org/ifcc-emerging-technologies-division/etd-working-groups/>) and will include:

- News items and opinion pieces from key researchers/opinion leaders about recent developments in the clinical diagnostic applications of volatolomics.
- A directory of companies active in the clinical diagnostic applications of volatolomics.
- Links to clinical trials involving volatolomic testing.

- Details of analyzers and regulatory approvals of clinical diagnostic products based on volatolomic testing.
- A literature survey updated quarterly designed to provide an educational resource and a snapshot of work since 2010.

For any further information on the Working Group on Volatolomics, visit: <https://www.ifcc.org/ifcc-emerging-technologies-division/etd-working-groups/wg-vol/>

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