UNIVERSITY OF GRAZ

Technology Offer

DETECTION of "FOREVER CHEMICALS"
Accurate identification of Fluorinated Organic Compounds (PFAS) using NMR

Background

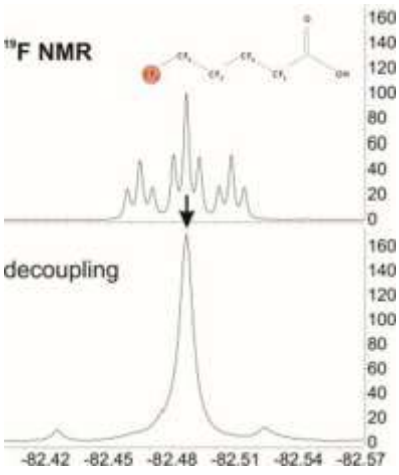
Fluorinated organic compounds, especially PFAS, are widely used for their durability but pose environmental and health risks due to bioaccumulation and suspected involvement in disrupting the immune system.

Technology Overview

Existing detection methods, such as LC/GC-MS spectrometry, face limitations, especially in analysing complex PFAS mixtures, but this innovative, patent-pending technology offers a precise solution for the detection and analysis of fluorinated organic compounds using reference-free ^{19}F-NMR spectroscopy with selective radio-frequency pulses for enhanced resolution and sensitivity.

Advantages

- ✓ **Precise Detection**: Enables qualitative and quantitative analysis of fluorinated organic compounds, especially PFAS.
- ✓ **Efficiency**: Operates without the need for certified reference materials and is suitable for complex mixtures.
- ✓ **Flexibility**: Adaptable for various fluorinated compounds and sample types.



Applications

Many groups of PFAS are already globally banned or restricted within the EU, with additional regulations expected to be implemented soon.

These restrictions highlight the growing need for precise and reliable measurement of PFAS content.

Link to publication

https://pubs.acs.org/doi/10.1021/acs.analchem.5c05889

KEYWORDS:

Forever chemicals
PFAS detection
NMR spectroscopy
quantitative detection
High Precision

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COOPERATION OPTIONS:

Licensing Agreement
Research cooperation
Development and commercialization of the technology

STATUS OF PATENT:

Patent filed
Priority date 24. 06. 2025
positive search report from the EPO containing only category A and T documents

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