



**ThermoFisher**  
SCIENTIFIC

## The Future Starts Here

Unleashing the Power of QQQ and Orbitrap™  
Technologies on the World of Pesticides

The world leader in serving science

## **Application of GC-Orbitrap Mass Spectrometry for Pesticide Residues**

Prof. Amadeo Fernandez-Alba

European Reference Laboratory for  
Pesticide Residues in Fruits and  
Vegetables (EURL-FV)

University of Almeria, Spain

## **Pesticide Quantitation with a Comprehensive Workflow**

Ed George

Environmental and Food Safety

Thermo Fisher Scientific, USA



# Multi-award winning Orbitrap GC-MS Technology



Metabolomics



Food & Beverage



Industrial



Environmental

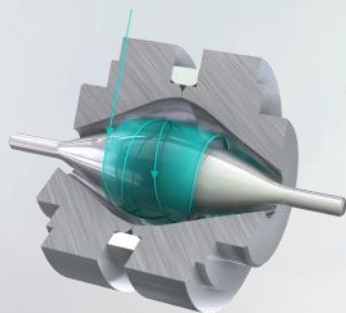


Pharmaceutical



Clinical & Toxicology

unknowns  
discovery  
research



## Thermo Scientific Q Exactive GC

Unprecedented Depth in Analysis

RP 120,000 (FWHM @  $m/z$  200)

EI/CI; Full scan, timed-SIM

MS/MS capability



# New Addition to the Orbitrap GC-MS Family

## Thermo Scientific Q Exactive GC

Unprecedented Depth in Analysis

RP 120,000 (FWHM @  $m/z$  200)

Full scan, timed-SIM

EI/CI; MS/MS capability



Redefining Routine GC-MS

RP 60,000 (FWHM @  $m/z$  200)

EI/CI; Full Scan; Timed-SIM

Thermo Scientific Exactive GC





# New Exactive GC Orbitrap GC-MS System



Redefining Routine GC-MS  
RP 60,000 (FWHM @  $m/z$  200)  
EI/CI; Full Scan; Timed-SIM

**Thermo Scientific Exactive GC**



Food & Beverage

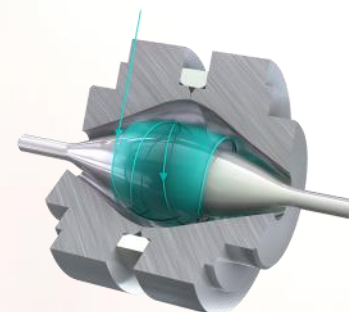


Environmental



Industrial

knowns  
routine  
screening



Clinical & Toxicology



## High Selectivity Non - Targeted Data Acquisition

- Fast instrument and method set-up
- Method consolidation
- Adjustable scope of analysis
- Quantitative and qualitative information in a single run
- High efficiency data processing
- Retrospective data analysis



# Exactive GC: The Technology Inside



**Orbitrap mass analyzer**

**Incredible HR/AM performance**

**Highly regarded Q Exactive platform**



**TRACE 1310 GC**

**Unique modular injector and detector design**

**Rapid heat cycling**

**ExtractaBrite™ ion source technology**

**Routine grade robustness**

**Patented RF lens protects ion guide**

**Removable without breaking vacuum**



# Exactive GC Highlights

## Resolving Power

Up to  
60,000 at  
 $m/z$  200

- Maximum selectivity
- Fast enough for GC

## Mass Accuracy

< 1ppm

- Every scan
- All concentrations
- In complex matrix
- Across the mass range
- Everyday!

## Sensitivity

ppt

- In full scan
- High selectivity
- High spectral fidelity

## Dynamic Range

>6 orders

- Excellent coverage in sample profiling
- “Triple quad grade” quantitation in full scan



# Orbitrap GC-MS Contaminants library

- Fast start-up of screening and quantitation applications
- TraceFinder Compound Database  
>700 food and environmental contaminants
- HRAM Spectral Library of over 700 food and environmental contaminants
- User guide detailing how to install and make custom enhancements to library
- Compound classes V1:
  - Pesticides, PAHs, PCBs, Dioxins and Furans. Flame Retardants

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1R120706-0100  
REV. A

## **Pesticide and Environmental Contaminants Spectral Library**

For Q Exactive GC and Exactive GC  
Orbitrap GC-MS Systems



## **Visit us @ booth 30-31 in the exhibition hall**

- Join us at our breakfast user's meeting
- Thursday 21<sup>st</sup> July
- Glades Meeting Room
- Poster No. 75

