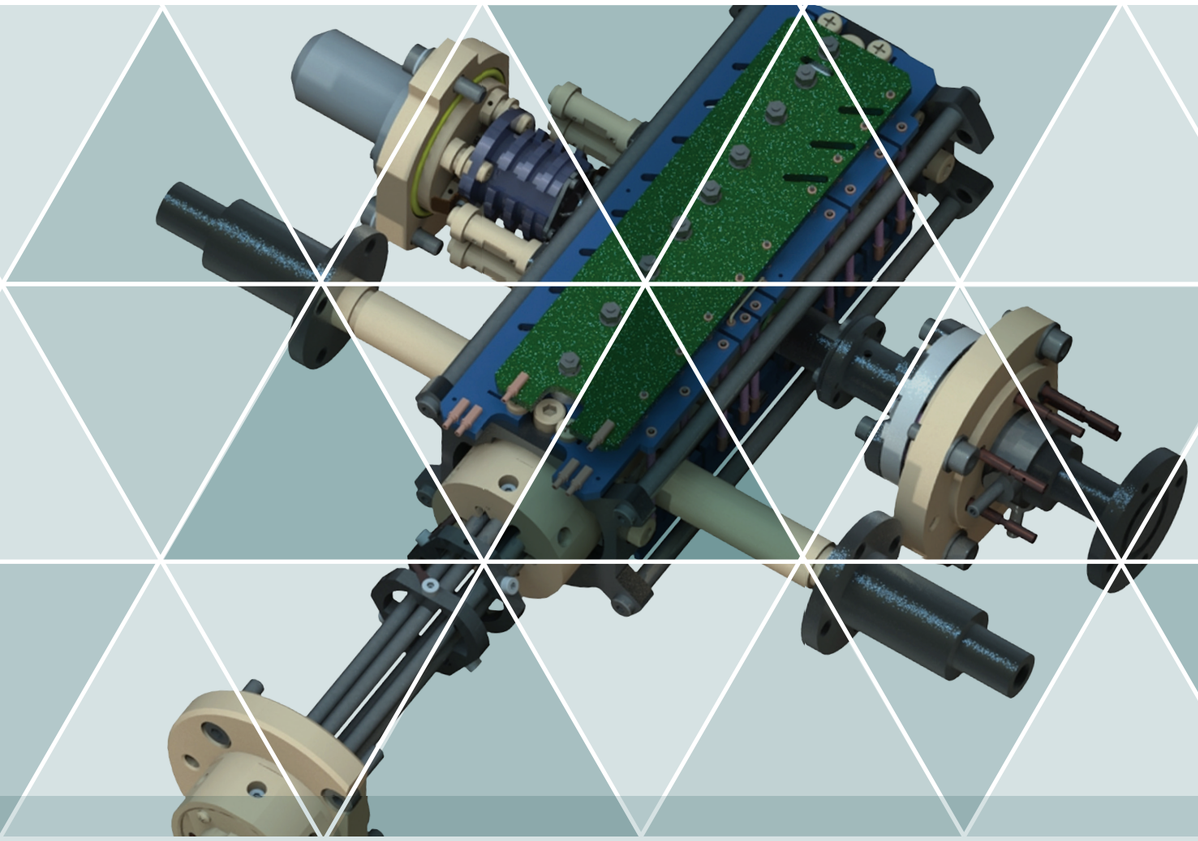

Fasmatech SA
Lefkippos Tech Park
NCSR Demokritos
15341 Athens, Greece
email info@fasmatech.com

Fasmatech Ltd
Magdalen Centre
The Oxford Science Park
Oxford, OX4 4GA, UK
email sales@fasmatech.com

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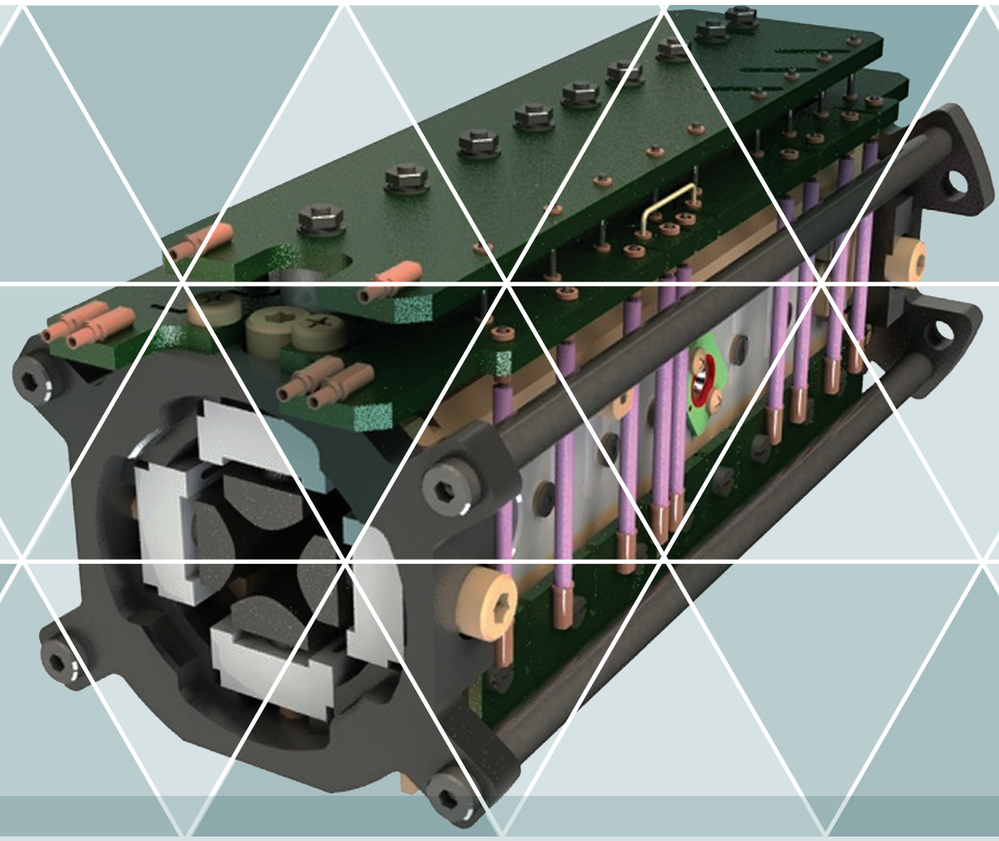
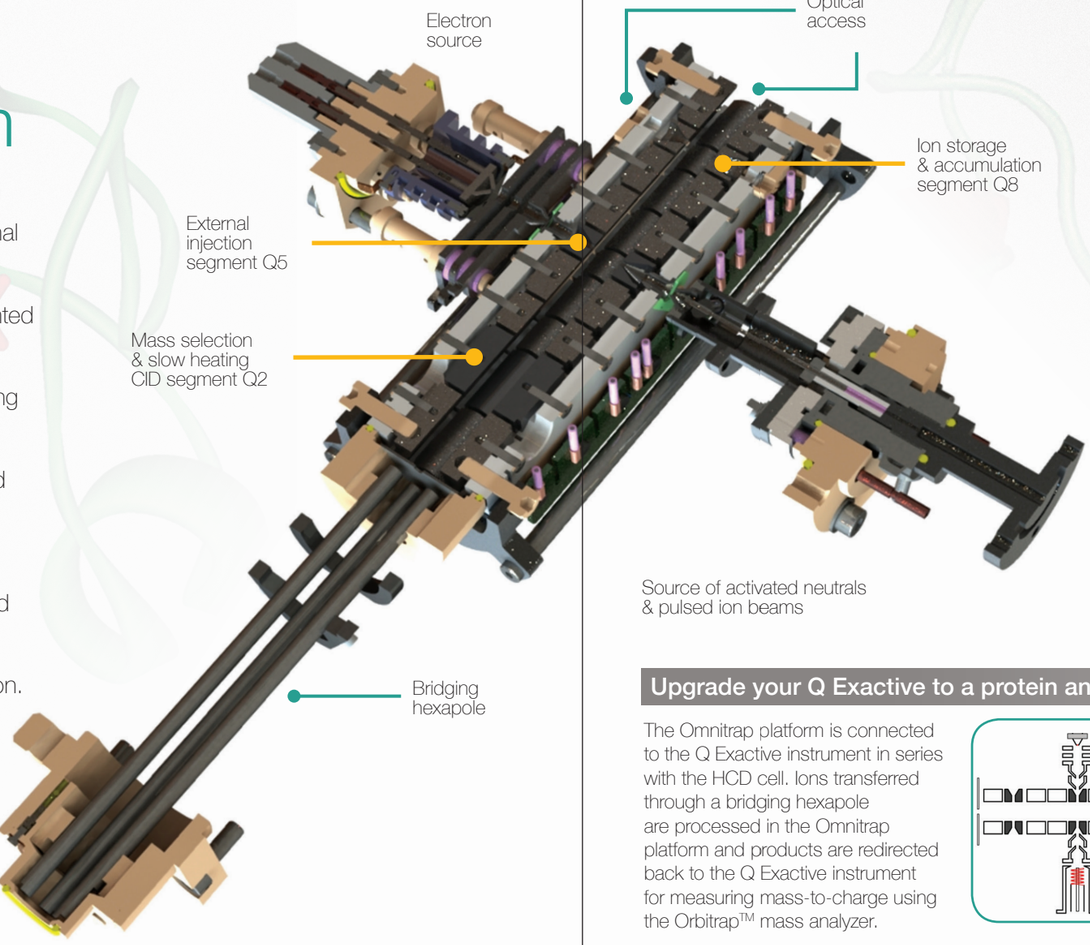


Omnitrap™

Next generation technology for comprehensive analysis of proteins

Omnitrap Processing Platform

Fasmatech introduces the **Omnitrap** platform, a unique ion processing system designed to provide access to an arsenal of ion activation-dissociation techniques all embedded in the same unit. The **Omnitrap** platform is a novel segmented linear ion trap where trapping is performed by rectangular RF waveforms and lossless transfer of ions between trapping regions is carried out by fast switching DC potentials.
A diverse set of ion activation techniques is accommodated in purpose-designed regions of the ion trap including slow heating CID, ECD, EID, photo-dissociation and additional activation methods enabled by external injection of activated neutrals or pulsed ion beams.The **Omnitrap** platform can be adapted to existing or custom engineered instrumentation. This unique technology is currently available as a retrofit to the Q Exactive™ instrument series (Thermo Fisher Scientific) and also with Fasmatech's oTOF mass analyzer.



Performance Achievements

• Access to an extended mass range using variable frequency rectangular RF waveforms for trapping ions • Highly efficient ECD and EID of precursor ions in high vacuum with fine-tuned electron beam energy • Enhanced CID efficiency in pulsed RF fields at elevated gas pressure • Lossless transfer of ions between the Q Exactive instrument and the Omnitrap processing platform

Ion Activation Arsenal for Tandem MSn

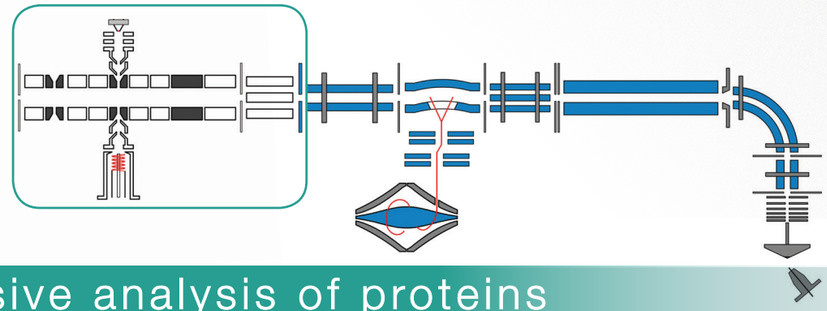
• Slow heating and high energy CID • Electron Capture Dissociation • Electron Induced Dissociation • Electron Ionization • Dual-axis optical access for photo-dissociation • External injection of activated neutrals and ion beams

Application Areas

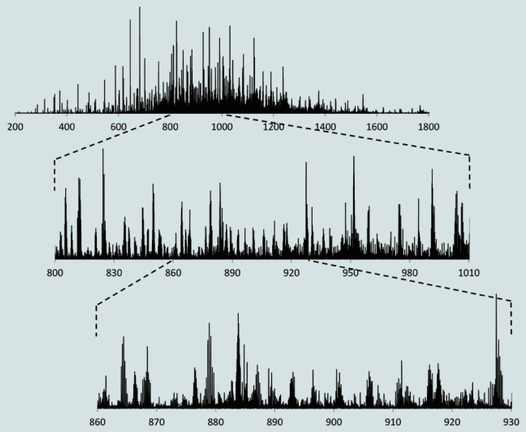
• Top-down proteomics, proteoform and post-translation modification analysis • Structural biology • Native mass spectrometry

Upgrade your Q Exactive to a protein analysis center

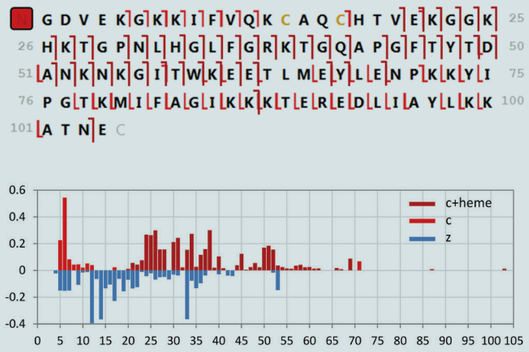
The Omnitrap platform is connected to the Q Exactive instrument in series with the HCD cell. Ions transferred through a bridging hexapole are processed in the Omnitrap platform and products are redirected back to the Q Exactive instrument for measuring mass-to-charge using the Orbitrap™ mass analyzer.



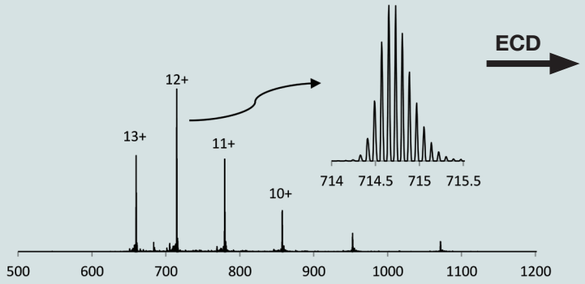
Next generation ion trapping technology for comprehensive analysis of proteins



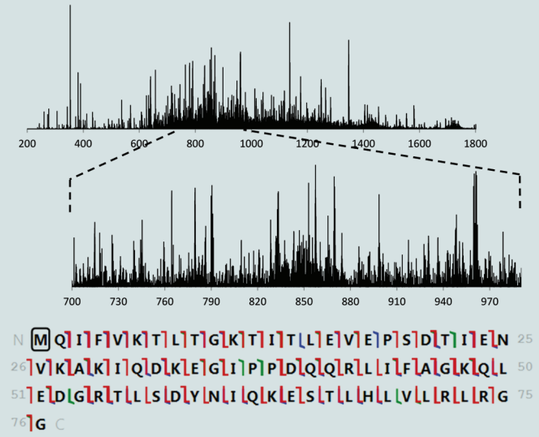
ECD spectrum of cytochrome-C generated in a Q Exactive + Omnitrap platform.



Cytochrome-C sequence highlighting c,z fragments identified in ProSight Lite. Additional c+heme fragments result in >80% sequence coverage. Only <15% of monoisotopic peaks are processed!



Ubiquitin sequence highlighting a, b, c, x, y and z fragments identified in ProSight Lite. Complete sequence coverage is obtained by matching only 15% of the monoisotopic peaks identified. Deconvolution is performed in Xcalibur.



ECD spectrum of ubiquitin generated in a Q Exactive + Omnitrap platform.

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