Analytical Instrumentation, Methods & Materials

CRYOGENIC SOFT LANDING IMPROVES STRUCTURAL PRESERVATION OF PROTEIN COMPLEXES

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The Invention

UW-Madison and Morgridge researchers have developed new methods and systems for complete structural characterization of biological samples. The researchers combined mass spectrometry technologies with cryo-electron microscopy (cryoEM) to facilitate enhanced sample handling, preparation, and analysis. Their system and associated techniques enables soft-landing under vacuum (or low pressure) to readily and consistently deposit analytes (samples) on standard EM grids. In addition, the operating conditions allow for the deposition of water for in situ formation of amorphous ice on the analytes. More specifically, the water can be added before, during, or after analyte samples are deposited on the EM grid. Further, the system and associated methods include features and steps to enable the rehydration of landed analytes (particles, samples) to improve the resolution of the cryoEM images. Finally, the system may optionally include a retractable ion guide or sample holder to enable isolation and prepared sample removal.

Additional Information

For More Information About the Inventors

- Joshua Coon

Tech Fields

- Analytical Instrumentation, Methods & Materials : Mass spectrometry
- Analytical Instrumentation, Methods & Materials : Microscopy

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854