

American Chemical Society Awards John R. Engen for Scientific Achievements

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Prof. Engen Investigates Protein Conformation Using Novel Hydrogen/Deuterium Exchange Technique on Waters Synapt High Definition MS (HDMS) System

Milford, Mass. September 1, 2009



Waters Corporation announced today that the Analytical Chemistry Division of the American Chemical Society presented Prof. John R. Engen of Northeastern University with the Arthur Fideis Award for Achievements by a Young Analytical Scientist. Through a collaboration with Waters Corporation, Prof. Engen has pioneered the combined use of hydrogen-deuterium (H/D) exchange technology, UltraPerformance LC® and ion mobility mass spectrometry to better understand the conformation, or the folded three-dimensional, of proteins that are thought to play a

major role in some diseases. Prof. Engen received his award at a ceremony at the ACS National Meeting in Washington on August 16.

By being able to form a better three-dimensional picture of these proteins and how they move and react with other proteins, scientists are able to better understand the relationship between protein function and protein structure and, it is hoped, gain new perspectives on how diseases begin and progress. Prof. Engen is an Associate Professor of Chemistry & Chemical Biology and a Faculty Fellow at Northeastern University's Barnett Institute of Chemical and Biological Analysis.

Proteins are carefully structured, three-dimensional, long-chain molecules that when properly folded regulate normal bodily functions. Several high profile diseases including Alzheimer's, Creutzfeldt-Jakob's, and Parkinson's can develop when certain proteins become misfolded, causing a chain of events that can lead to disease symptoms. Thus understanding how a protein achieves its folded state is important. Mass spectrometry is unique in its ability to monitor individual proteins and protein complexes.

Prof. Engen has published extensively on the H/D technique, most recently in the Proceedings of the National Academy of Sciences, and in a feature article for Analytical Chemistry. Waters and Prof. Engen's laboratory at the Barnett Institute for Chemical and Biological Analysis entered into a scientific collaboration in 2007. To further Prof. Engen's experimental technique, Waters engineers constructed a specially-designed programmable cooling chamber for the Waters® nanoACQUITY® UPLC System, recently described in Analytical Chemistry.

Waters introduced the SYNAPT™ High Definition MS™ (HDMS™) System at the American Society of Mass Spectrometry annual meeting in Seattle in June of 2006. It is the first commercially-available mass spectrometer with the ability to analyze ions by their size, shape and charge in addition to mass.

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