

Pawel Ciborowski, Ph.D.
Professor of Pharmacology and Experimental Neuroscience
Professor of Biochemistry and Molecular Biology
Director, Mass Spectrometry and Proteomics Core Facility
University of Nebraska Medical Center, Omaha, NE, USA

Gdansk University of Technology
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Lecture abstract

Title:

**CROSS-ROADS OF PROTEOMICS AND
ANALYTICAL CHEMISTRY**

This course is designed to offer students an opportunity to learn fundamentals of the current status, methodology and practical applications of mass spectrometry based analysis of proteins, peptides and metabolites. In the first part we will discuss fundamentals of protein, peptide and metabolites ionization such as Matrix Assisted Laser Desorption Ionization (MALDI) and positive and negative mode of Electrospray Ionization (ESI) which will include an overview of instrumentation i.e. mass spectrometers, nano-flow liquid chromatography and UHPLC interfaced with various ion traps (IT), quadrupole time of flight (qTOF), triple quadrupoles (QQQ) analyzers. We will discuss principles of Collision Induced Dissociation (CID), Higher Energy Collision Dissociation (HCD) and Electron Transfer Dissociation (ETD). In the second part we will focus on characterization of molecules by tandem mass spectrometry. Application of protein fragmentation, chemical and enzymatic, will be part of this section. Third part will be devoted to identification and analysis of post-translationally modified peptides and protein isoforms. Finally, in the fourth part of this course we will discuss software and bioinformatics tools used for high throughput mass spectrometry data analysis.

Termin	Dzień tygodnia	Godzina	Miejsce
24.04.2017	Poniedziałek	9.15.00 – 12.00	Minicentrum Konferencyjne (Luwr)
25.04.2017	Wtorek	9.15.00 – 12.00	Minicentrum Konferencyjne (Luwr)
26.04.2017	Środa	9.15.00 – 12.00	Minicentrum Konferencyjne (Luwr)
27.04.2017	Czwartek	9.15.00 – 12.00	Minicentrum Konferencyjne (Luwr)
28.04.2017	Piątek	9.15.00 – 12.00	Minicentrum Konferencyjne (Luwr)