FACULTY OF SCIENCE
Charles University

School of Chemistry, Faculty of Science (FoS) would like to invite you to attend the lecture

Quo Vadis Chemie

Modern Clinical Analysis

which will be delivered by

Priv.-Doz. Dr.rer.nat. Silke Matysik

Institute of Clinical Chemistry and Laboratory Medicine,University Hospital Regensburg

on 27.11.2018 at 14:00

the Lecture Hall CH2, the School of Chemistry Building, FoS CU, Hlavova 8, Praha 2

Abstract: A clinical laboratory is a laboratory where tests are done on clinical specimens in order to get information about the health of a patient as pertaining to the diagnosis, treatment, and prevention of disease. A modern clinical laboratory performs analysis of hematology, coagulation, immunology, and clinical chemistry based on various techniques such as photometry, potentiometry, turbidimetry, heterogeneous immunoassays, flow cytometry and electrophoresis. Our department provides an integral service in all clinical fields, from routine analysis to state-of-the-art molecular genetic tests. The main activity of research is based on the use of advanced instrumental techniques, such as mass spectrometry coupled to gas chromatography and liquid chromatography with methods developed internally. The versatility of high performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) can be advantageously exploited in laboratory medicine. Mass spectrometry provides unique capabilities in the clinical laboratory and is rapidly transitioning from specialized testing to being broadly applied. Historically, major impacts of MS comprise confirmation of immunoassay-positive drug screens, identification of inborn errors of metabolism, and analysis of steroid hormones. More recently, MS has dramatically reduced the time required for microbial identifications. The importance of analyzing a high number of species simultaneously with mass spectrometric methods to uncover biosynthetic and metabolic pathways has increased tremendously in recent years. For example, various disorders of cholesterol synthesis and metabolism can be evaluated by determination of distinct biomarkers in blood, urine and faeces.