

Petnica School of Chromatography and Mass Spectrometry – Advanced level

Who can apply?

Bachelor, Master and PhD students as well as all the other who are interested and have basic experience in chromatography and mass spectrometry which they would like to develop it further.

What does the School have to offer?

Theoretical aspect will cover advanced areas of gas and liquid chromatography, mass and tandem mass spectrometry. Besides theory, two thirds of the time shall be dedicated to experimental work, involving work on the instruments. Participants will have the opportunity to familiarize themselves further with the instruments, their structure and basic parts. They will also learn about possibilities of the software, learn how to setup the methods and analyze the results. Further familiarization with results reading will be done through practical examples by reading mass spectra and analysis of dependence between mass spectra and the structure of compounds. Special accent will be put on analysis of real samples by means of mentioned techniques. Part of the school shall be dedicated to application of molecularly imprinted polymers in chromatography.

Which subjects will be covered?

Mass spectrometer on the inside – parts of Mass spectrometer

Single residue vs. Multi residue pesticide analysis

Tandem Mass Spectrometry

Chromatography and Mass Spectrometry in Environment monitoring

Chemical derivatization as sample preparation method

Molecularly imprinted polymers – importance and application in chromatography

Lab: MS-MS experiment setup

Pesticide analysis – comparison of GC/MS and GC/MS-MS

Analysis of perfume components

UV filter analysis

Analysis of polychlorinated phenyls

Artificial sweeteners analysis

Analysis of polyphenols after chemical derivatization

Analysis of remains of antibiotics in food

Analysis of benzodiazepine in samples

Synthesis and properties examination of MIPs

Analysis of pesticide by means of MIP – SPE and comparison with other Methods

MS Spectra reading

Results presentation

** Department of Chemistry of Petnica Science Centre reserves the right of change of the list of topics. List presented should be used as a guideline only. Some of the topics can be modified or completely excluded from the program of the School, depending on available time, participants' interests and their capabilities.*

How will the School be structured?

Each day will consist of a lecture, practical and theoretical experiments. Lab experiments will be organized in small groups in order to achieve full involvement of every participant in the work. At the beginning of the School each participant will be provided with the material necessary for work during the school. At the end of the school, participants shall receive electronic versions of the materials and photos from the school as well as certificate of attendance in both Serbian and English language.

Maximal number of participants is 15. In case of large number of applications, there is a possibility of organization of additional school.

Laboratory equipment

Laboratory for Chemistry at Petnica Science Centre is one of the best-equipped modern laboratories in the region. It is spread over more than 100 square meters and major part of the lab is general laboratory. Instruments are located in separate rooms, and there is also a separate sample preparation room as well as room with scales and separate storage area. Lab is equipped with GC/MS, HPLC/MS, AAS, FTIR, UV/Vis, Karl Fischer titrator, polarimeter, conductometer, refractometer, pH-meter, automatic titrator, melting point analyzer etc.

Petnica Science Centre is fully covered with Wi-Fi signal, has access to scientific network and is also equipped with several IT-rooms. The library equipped with scientific literature is also at participants' disposal.

Time and date

Petnica Science Centre

20th of September until 25th of September 2015

Price

250 EUR per participant

There is a possibility of financial assistance towards fees with the 50 EUR per participant

Price covers accommodation, three meals per day and transportation Valjevo – Petnica – Valjevo

Application

CV and Cover Letter to be sent to hem@petnica.rs

Application deadline: 15.06.2015

List of participants will be posted on <http://hem.petnica.rs> no later than 25.06.2015

50 EUR deposit must be paid no later than 15. 07. 2015

The rest of the amount must be paid in before the beginning of the School