LISA Specialized Training 1 - Nuclear chemical techniques and laser resonance Ionization laboratory training (LISA specialized training)

Report of Contributions

Contribution ID: **1** Type: **not specified**

Safety Training

Monday 7 June 2021 16:00 (30 minutes)

Presenter: GORGES, Christian (University of Mainz)

Contribution ID: **2** Type: **not specified**

Science communication

Thursday 10 June 2021 16:00 (1h 30m)

This short session is part of a soft-skills training which will equip you with the tools and experience necessary to maximize both your employability and your ability to transfer your acquired knowhow in your future endeavours.
To do so, we would like to address and work on in our seminar about “Science Communication and
Networking”the following issues:
- How to present your own research or business profile concisely, generating interest
- How to present your ideas in a nutshell? Training of the method “Elevator pitch”or “elevator speech”.
- Writing effective and exciting e-mails in the science context: Do’s and Dont’s.
After a short introduction we will work in groups and train some methods presented.
A short discussion, a wrap up and a feedback loop will close the seminar.

Presenter: HOERR, Beate

Contribution ID: **3** Type: **not specified**

Investigation of atomic properties using ion mobility spectrometry

Thursday 10 June 2021 14:00 (1h 45m)

"Gas chromatographs and ion mobility spectrometers are as ubiquitous in industrial plants as they are in homeland security at airports for detecting dangerous gases, explosives and drugs. They are also used in fundamental research such as in analytics and biochemistry. Less well known is the application of ion mobility spectrometry in atomic physics.
The goal of this lecture is to introduce students to ion mobility spectrometry as a method for studying the atomic properties of the heaviest elements, with a view to its use as a tool for isobaric separation and laser spectroscopy of the transactinides."

Presenter: LAATIAOUI, Mustapha (GSI/HIM)

Contribution ID: **4** Type: **not specified**

PhD to Sciencepreneur

Tuesday 8 June 2021 19:00 (2h 30m)

Explore your entrepreneurial strengths and meet our role models, who share the challenges and opportunities of becoming an entrepreneur or intrapreneur. Role Models: Christian Els, CEO and Co-Founder Sentin, https://sentin.ai/ and Juris Ulmanis (Quantum physicist Entrepreneur, Innovator).

Please register here for this event : https://falling-walls.com/yes/webinar/from-phd-to-sciencepreneur-uni-mainz-08-06-2021/apply/. Then you will receive the zoom link in advance from Falling walls.

Contribution ID: **5** Type: **not specified**

Actinides - The Basics

Monday 7 June 2021 09:30 (1h 15m)

Christoph E. Düllmann1,2,3
1 Johannes Gutenberg University Mainz, Germany
2 GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany
3 Helmholtz Institute Mainz, Germany

The elements with atomic numbers 89-103 form the actinide series –central to the LISA innovative training network. In this lecture I will discuss basics aspects of the actinides, using their discoveries as the basic theme for introducing each of these elements individually. I will also discuss their current availability, as well as their production in research reactors, at accelerators and in cosmological processes.

Presenter: DÜLLMANN, Christoph

Contribution ID: **6** Type: **not specified**

Actinides - The Basics

Monday 7 June 2021 11:00 (1h 30m)

Presenter: DÜLLMANN, Christoph

Contribution ID: **7** Type: **not specified**

Ultra Trace Determination of Minor Actinides by Laser Mass Spectrometry

Monday 7 June 2021 14:00 (1h 45m)

Klaus Wendt
Institute of Physics, Johannes Gutenberg-University Mainz, D-55099 Mainz, Germany
E-mail: Klaus.Wendt@uni-mainz.de

Plutonium and the so-called minor actinides Neptunium, Americium, Curium, Berkelium and Californium are considered to be within the most dangerous radiotoxic elements on earth. They are produced in rather large quantities in nuclear reators, during nuclear explosions and in accidents and their unambigious and sensitive radiometric detection is often hampered by backgrorund or interferences in their ⍰ ddecay spectra. Apart of their radiotoxicity in the environment they also serve as highly sensitive tracers for dedicated geological, astrophysical and increasingly also biomedical studies.
To form a very sensitive and highly selective technique, multi-step resonant laser ionization using tunable lasers is coupled to well adapted mass spectrometric devices. Full suppression of isobaric interferences, resolution of isotopic composition and the high ionization efficiency of these resonance ionization mass spectrometers (RIMS) ensures lowest detection limits and significance of the results. E.g. for Pu, isotope content and composition in environmental samples with LODs as low as 105 atoms, corresponding to activity levels in the µBq range, are reported.
K. Wendt, N. Trautmann, Int. J. Mass Spectrom. 242, 161 (2005)

Presenters: WENDT, Klaus (University of Mainz); RAEDER, Sebastian (GSI)

Contribution ID: **8** Type: **not specified**

Supervisory Board

Tuesday 8 June 2021 14:00 (1h 30m)

https://cern.zoom.us/j/5912925154?pwd=TEVwOWNuNnIrOHEvYmxkU1FZK0Rxdz09