# Training Office update

## Academic Day

17 June 2022, CERN

LISA
LASER IONISATION AND SPECTROSCOPY OF ACTINIDES

This Marie Sklodowska-Curie Action (MSCA) Innovative Training Networks (ITN) receives funding from the European Union's H2020 Framework Programme under grant agreement no. 861198

# The Training Office, at your service!

Thomas E Cocolios
Training Officer
KU Leuven

Bruce A Marsh
Network Coordinator
CERN

Isabelle M Fontaine
Replaced by
Sonia Allegretti
CERN

James Bain
Industrial Rep
Msquared

- Define the training objectives of the LISA programme
- Coordinate the continued education aspects of LISA
- Supervise the organization of the LISA training events
- Be there to support the ESRs from start to finish

Changing every year
1. IREPA Laser
2. Hübner Photonics
3. Pantechnik

# Training events

Follow-up on the planning

# Where we stand in the training program...

1. Training kick-off at KU Leuven = Nov 2020
   - *Combined with the MidTerm Review*
2. General Training 1 at IREPA Laser = Dec 2020
   - *Safety, ethics, and society*
3. Specialized Training 3 at Mainz = Jun 2021
   - *Nuclear chemical techniques and laser resonance ionization laboratory training*
4. Specialized Training 2 at Jyvaskyla = Oct 2021
   - *Advanced techniques for the production and study of actinides*
5. **Summer Schools 1&2 by GANIL & Groningen = 28 Aug-9 Sept 2022**
   - ***From the nucleons to the stars 28 Aug – 2 Sep1 2022***
   - ***Structure of complex atoms 4 – 9 Sept 2022***
6. Specialized Training 4 at Jena = ~~Jun~~ Nov 2022
   - *Advanced computational techniques*

# Summer schools

Register now!!

*From nucleons to the stars*

*Structure of complex atoms*

- Planning and programmes have gone through many iterations because of the pandemic
- Major delays to start the logistic planning until we were out of the pandemic resulted in limited options and locations → 2 separate locations (one by the beach, one in land)
- Proximity to GANIL and its scientific for an on-site visit of many facilities
- Exciting academic lectures, testimonies, panels…
- And your contributions at the poster sessions!!

# Continued education

ICDP & training opportunities

# ICDP review

- Individual Career Development Plans are up for review!
- They should be checked with the supervisor every 6 months or so to see whether the ESR is on track with their initial guess.
- An update based on the **template on Sharepoint** should be sent to the Training Office once a year.
  - Next review by the Jena Training

**LISA CAREER DEVELOPMENT PLAN**

| ESR | | | |
|---|---|---|---|
| ESR# | Last Name | First Name | Title |
| Employer | | Academic institution (if different) | |

| SUPERVISOR | | | |
|---|---|---|---|
| Main promotor | Last Name | First Name | Title |
| Academic promotor | Last Name | First Name | Title |

| PROJECT BREAKDOWN [100%;180ECTS] | | | |
|---|---|---|---|
| Main research | Secondment | Training & Mentoring | Dissemination & Outreach |
| Project title | | | WP# |
| Project milestones (e.g. simulations, experiments, publication, conferences, defense, ...) | | | Progress % |

| SECONDMENT (if achieved) | | | |
|---|---|---|---|
| Institution | Supervisor | Start date | Duration |
| Project title | | | WP# |
| Achievements (e.g. simulations, experiments, publication, ...) | | | Progress % |

| RAINING & DEVELOPMENT PLAN | | | |
|---|---|---|---|
| OBJECTIVES | Progress % | Adjustments | TIMELINE |
| RESEARCH SKILLS | | | |
| LANGUAGE, WRITING & COMMUNICATION | | | |
| MANAGEMENT & FUNDING | | | |
| NETWORKING | | | |

| OUTREACH ACTIVITIES | | |
|---|---|---|
| Activity | Audience Reached | Comm & Outreach |

# PhD Label

Our first graduate!

# Advances in laser spectroscopy of superheavy elements: Resonance ionization spectroscopy on $^{253,254,255}$Es and a new gas-jet based high-resolution spectroscopy setup (JetRIS)

**Steven Nothhelfer**

**PhD thesis, successfully defended may 06, 2022**

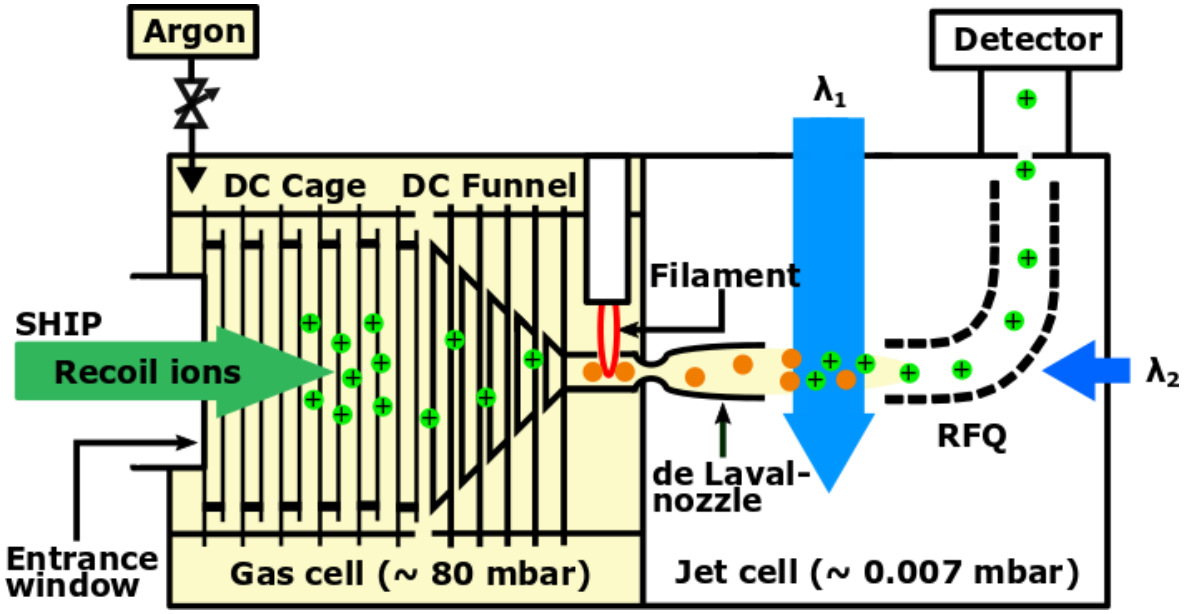
This research was supported by the U.S. DOE, Office of Science, BES Heavy Element Chemistry program. The isotopes used in this research were supplied by the U.S. DOE Isotope Program, managed by the Office of Science for Nuclear Physics.

GSI Helmholtzzentrum für Schwerionenforschung GmbH

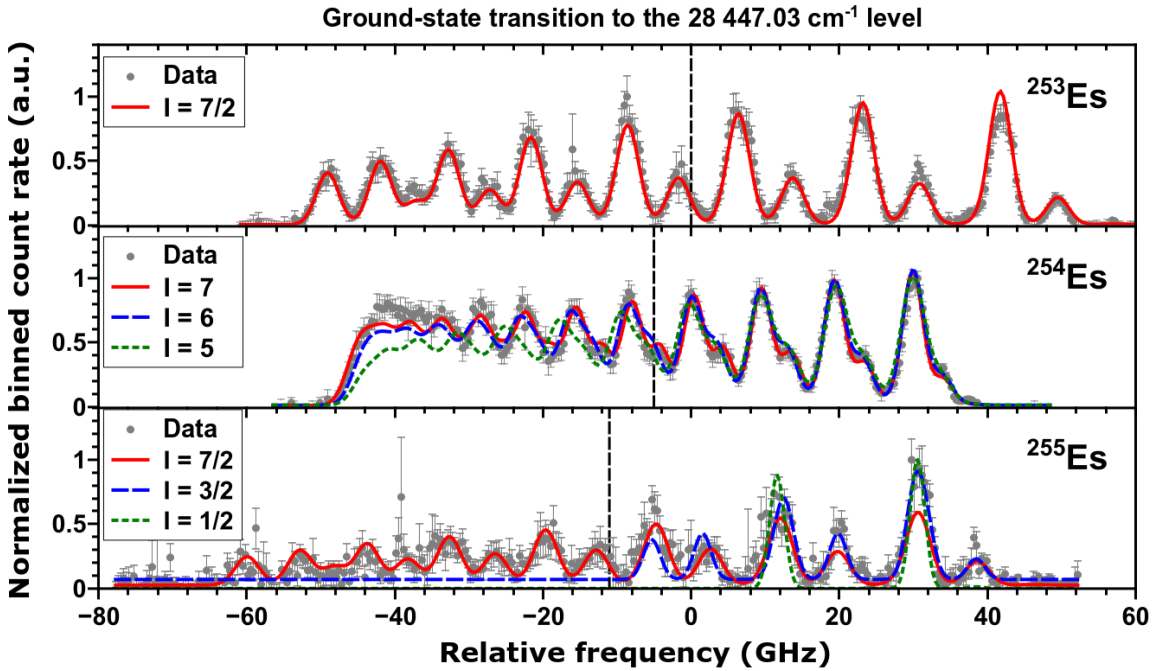
HIM HELMHOLTZ Helmholtz-Institut Mainz

JOHANNES GUTENBERG UNIVERSITÄT MAINZ JG|U

# JetRIS




# RIS on $^{253,254,255}$Es @ RISIKO




- Advantages compared to RADRIS (state-of-the-art)
  - Faster extraction times → Access to shorter $t_{1/2}$
  - Higher spectral resolution → ~ 215(35) MHz

S. Raeder et al., Nucl. Instrum. Methods Phys. Res. B, 463, 2020, 272-276.

- HFS in 5 ground-state transitions, 4 solely in $^{254}$Es
  - Nuclear spins and electromagnetic moments ($\mu$, $Q_s$)
  - Single particle configuration and Nilsson orbitals

S. Nothhelfer et al., Phys. Rev. C, 105, 2022, L021302.

# Milestones & deliverables

| Ref | Timeline | Description | Progress |
|---|---|---|---|
| D6.1 | M10 – Aug 2020 | Individual Career Development Plans | 28/12/20 |
| D6.2 | M14 – Dec 2020 | Enrolment in PhD programs | 16/03/21 |
| MS28 | M16 – Feb 2021 | Compatibility of training program with the different doctoral schools | 16/03/21 |
| MS29 | M26 – Dec 2021 | Midterm review of progress of ICDP | pending |
| D6.3 | M38 – Dec 2022 | Open training events | ongoing |
| D6.4 | M48 – Oct 2022 | PhD award | - |

For more information, don't hesitate to contact us!

lisa.itn@cern.ch