OeAW - Discovering the future

As a central non-university institution for science and research, the **Austrian Academy of Sciences - OeAW** has the task of **"promoting science in every respect"**. Founded in 1847 as a learned society, it now has over 760 members and around 1,800 employees dedicated to innovative basic research, interdisciplinary knowledge exchange and the dissemination of new insights. The OeAW initiates and maintains partnerships worldwide and represents Austria in international scientific organizations; it cooperates with numerous institutions in the scientific field in order to actively **shape the research landscape**.

Postdoc (f/m/x) in experimental exotic atom research

Job ID: MBI167PD125

The Marietta Blau Institute for Particle Physics (MBI) of the Austrian Academy of Sciences (OeAW) is seeking applications for a

Postdoc (f/m/x) in experimental exotic atom research

(Full-time employee)

(Office)

for an initial period of **2-3 years**

A Postdoc position is available from **September 2026** in the MBI Exotic Atoms group. The successful candidate will work on two projects. Firstly, positronium & positronium chemistry experiments at MBI Vienna which contribute to several fields such as PET scans and materials analysis, antihydrogen chemistry, and astrophysics. Secondly, development of the ASACUSA collaboration's antihydrogen beam at the CERN Antiproton Decelerator facility which is intended to perform spectroscopy on the antihydrogen ground-state hyperfine structure.

Your Tasks

- Positronium chemistry studies
  - Simulate, construct & perform novel experiments to measure the propeties of positronium compounds, such as positronium hydride.
  - Develop new experiments with positronium and positronium compounds.
  - Upgrade and maintain the Vienna positron beamline used for these experiments.
- ASACUSA antihydrogen experiment
  - Participate in antiproton beamtime at CERN to improve the ASACUSA collaboration's antihydrogen beam. This involves optimisation of cold antimatter plasmas and the interactions of the produced antihydrogen within the plasma and subsequent spectroscopy apparatus.
  - Upgrade and maintain the CERN positron beamline to ensure a constant supply of positrons to the experiment.
- Publish results in high-impact journals and present results at international conferences.
- Teach PhD and Masters students within the group.

Your Profile

- Ph.D. in experimental physics (e.g. atomic physics or antimatter physics).
- Knowledge of atomic/molecular physics (scattering, spectroscopy, beams etc.).
- Experience designing, running and analysing experiments to produce high impact publications.

- Knowledge & experience of common experimental techniques such as:
  - UHV and cryogenics
  - Advanced electronics
- Charged particle, radiation and photon detectors (e.g. MCPs and scintillators)
- Software skills for experiment control (LabView, Python), simulation (SIMION, Comsol/CST, Geant4) and data analysis (Python, C++).

Desirable Skills:

- Knowledge of the following topics:
  - Trapped charged particles (single particle and non-neutral plasma regimes).
  - Positron and positronium physics (positron beams, detection etc.).
  - Ion physics (production, mass spectrometry).
- Proven track-record of both independent and collaborative working to manage projects within a multidisciplinary international scientific environment.
- Experience teaching research students.
- Fluency in Englisch, both written and spoken. German skills beneficial.

Our Offer

- Full time contract for 40 hours per week with paid lunch break
- Two-year initial contract with the possibility of extending by a year.
- Office & lab location in the city centre of Vienna - consistently ranked as one of the most liveable cities in the world https://www.eiu.com/n/campaigns/global-liveability-index-2024/

The minimum annual gross salary for this position is EUR 70.167,44 (full-time based), in accordance with the collective agreement of the Austrian Academy of Sciences (ÖAW). For part-time employment, the salary will be adjusted on a pro rata basis in line with the agreed working hours.

APPLY NOW

Application Process

- Upload your CV, cover letter and list of publications to the application portal linked below.
- Provide contact details of at least two references.
- Provide your availability for a start date.
- Please apply until August 14th.

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.

Contact

Eberhard Widmann | Eberhard.Widmann@oeaw.ac.at
MBI | 1010 Vienna, Austria
Österreichische Akademie der Wissenschaften | Austrian Academy of Sciences | https://www.oeaw.ac.at/