

# Symposium Precision Physics with highly Charged Ions (SYHC)

jointly organised by  
the Mass Spectrometry Division (MS),  
the Atomic Physics Division (A), and  
the Molecular Physics Division (MO)

Klaus Blaum  
Max-Planck-Institut für Kernphysik  
Saupfercheckweg 1  
69117 Heidelberg  
klaus.blaum@mpi-hd.mpg.de

Yury A Litvinov  
GSI Helmholtzzentrum für  
Schwerionenforschung GmbH  
Planckstraße 1  
64291 Darmstadt  
y.litvinov@gsi.de

Thomas Stöhlker  
Helmholtz-Institut Jena  
Fröbelstieg 3  
07743 Jena  
t.stoehlker@hi-jena.gsi.de

Precision studies with highly charged ions are in the focus of several research fields as they provide conditions inaccessible in neutral atoms. For example, enormous electromagnetic field strengths, which a bound electron experiences in a heavy ion, allow for precision tests of quantum electrodynamics. In the absence of bound electrons, nuclear decay modes can significantly differ from the ones known in neutral atoms. In astrophysical plasmas, atoms are as a rule highly ionized. This symposium aims at discussing the most recent advances in experimental and theoretical investigations with highly charged ions in the realm of the atomic physics, nuclear structure, astrophysics and applications.

## Overview of Invited Talks and Sessions

(Lecture hall E415)

### Invited Talks

SYHC 1.1	Mon	11:00–11:30	E415	<b>First experiments at CRYRING@ESR</b> — •ESTHER BABETTE MENZ, MICHAEL LESTINSKY, HÅKAN DANARED, CLAUDE KRANTZ, ZORAN ANDELKOVIC, CARSTEN BRANDAU, ANGELA BRÄUNING-DEMIAN, SVETLANA FEDOTOVA, WOLFGANG GEITHNER, FRANK HERFURTH, ANTON KALININ, INGRID KRAUS, UWE SPILLMANN, GLEB VOROBYEV, THOMAS STÖHLKER
SYHC 1.2	Mon	11:30–12:00	E415	<b>Testing quantum electrodynamics in the simplest and heaviest multi-electronic atoms</b> — •MARTINO TRASSINELLI
SYHC 1.3	Mon	12:00–12:30	E415	<b>Indirect measurements of neutron-induced reaction cross-sections at heavy-ion storage rings</b> — •BEATRIZ JURADO
SYHC 1.4	Mon	12:30–13:00	E415	<b>Laboratory X-ray Astrophysics with Trapped Highly Charged Ions at Synchrotron Light Sources</b> — •SONJA BERNITT
SYHC 2.1	Mon	17:00–17:30	E415	<b>Observation of metastable electronic states in highly charged ions by Penning-trap mass spectrometry</b> — •KATHRIN KROMER, MENNO DOOR, PAVEL FILIANIN, ZOLTÁN HARMAN, JOST HERKENHOFF, PAUL INDELICATO, CHRISTOPH H. KEITEL, DANIEL LANGE, CHUNHAI LYU, YURI N. NOVIKOV, CHRISTOPH SCHWEIGER, SERGEY ELISEEV, KLAUS BLAUM
SYHC 2.2	Mon	17:30–18:00	E415	<b>Towards extreme-ultraviolet optical clocks</b> — •JOSÉ R. CRESPO LÓPEZ-URRUTIA
SYHC 2.3	Mon	18:00–18:30	E415	<b>Coupling atomic and nuclear degrees of freedom in highly charged ions</b> — •ADRIANA PÁLFFY
SYHC 2.4	Mon	18:30–19:00	E415	<b>Laser Spectroscopy at the Storage Rings of GSI/FAIR</b> — •WILFRIED NÖRTERSCHÄUSER

### Sessions

SYHC 1.1–1.4	Mon	11:00–13:00	E415	<b>Highly Charged Ions for Atomic, Nuclear and Astrophysics</b>
SYHC 2.1–2.4	Mon	17:00–19:00	E415	<b>Intersection of the Electron-Shell and Nuclear Degrees of Freedom</b>