

Program
of the 4th Berichtskolloquium of the SPP 1236

**Structures and characteristics of crystals
at extremely high pressures and temperatures**

Place: Bonifatiuskloster, Hünfeld

Monday, 28th February

- 12:00 **Lunch**
- 13:30 *Björn Winkler*: Organizational
- 13:45 *Johannes Bauer, Lkhamsuren Bayarjargal, Björn Winkler*: Central laser heating facility for the SPP 1236 and fluorescence lifetime measurements at high P/T
- 14:10 *Lkhamsuren Bayarjargal*: High (p,T) properties of wide band-gap semiconductors from second harmonic generation measurements
- 14:35 *Boriana Mihailova*: Pressure-induced phase transitions in relaxor ferroelectrics up to 30 GPa
- 15:00 **Coffee break**
- 15:30 *Maged Bekheet*: Indium oxide under high pressure: rational design of new polymorphs and characterisation of their physico-chemical properties
- 15:55 *Thomas Locherer*: Evolution of Bismuth Oxide high pressure phases
- 16:20 *Carmen Elena Quiroga, Xiang Wu, Rossitza Pentcheva and Leonid Dubrovinsky*: High-pressure behavior of MnTiO₃: A combined density functional theory, X-Ray diffraction and Raman spectroscopy study
- 16:45 *Ivan Troyan*: Ionic und superionic ammonia

- 17:10 **Poster session**
- 18:30 **Dinner**
- 20:00 **Evening program (Klosterstube)**

Tuesday, 1st March

- 8:00 **Breakfast**
- 8:45 *Hanns-Peter Liermann*: Status of the Extreme Conditions Beamline (ECB) at PETRA III, DESY
- 9:10 *Hans J. Mueller, N. Stroncik, R. Naumann, C. Lathe, M. Spiwek, M. Wehber, F.R. Schilling, J. Lauterjung*: High-pressure falling sphere viscosimetry of basaltic and dacitic rocks in conjunction with synchrotron radiation
- 9:35 *Leonid Dubrovinsky*: Elasticity of iron and iron-based alloys at conditions of the Earth's and planetary cores
- 10:00 **Group photo and Coffee break**
- 10:40 *Catherine McCammon*: Mössbauer spectroscopy in a laser heated diamond anvil cell
- 11:05 **Invited lecture** *Yusheng Zhao*: High Pressure Neutron Diffraction Studies of Energy and Environmental Materials
- 12:00 **Lunch**
- 13:30 *Thomas Schlothauer, Annia Greif, Gerhard Heide*: The subterranean shock wave synthesis laboratory of the TU Bergakademie Freiberg
- 13:55 *Marcus Schwarz, Steve Schmerler*: Further Progress in the high pressure investigations of the Si-Al-O-N-System
- 14:30 *Sebastian Schneider*: HP/HT - synthesis of novel nitrogen-related materials
- 14:55 **Coffee break**
- 15:30 *Alexandra Friedrich*: High-(p,T) syntheses and characterisation of tantalum and rhenium nitrides

- 15:55 *Rainer Niewa, Ulrich Schwarz*: Nitride chemistry of geomaterials: Formation, quantum-chemical prediction and characterization, crystal structures and properties of multi-ary metal nitrides prepared at high pressures
- 16:30 *Miria Andrade, Dmytro Dziwenko and Ralf Riedel*: High-pressure synthesis of novel binary and ternary superhard phases in the Si-C-N system
- 16:55 *Gleb Parakhonskiy*: Phase relations in boron up to 11 GPa and 2000° C
- 17:20 **Poster session**
- 18:30 **Dinner**
- 20:00 **Klosterstube**

Wednesday, 2nd March

- 8:00 **Breakfast**
- 8:45 **Invited lecture** *Ross Angel*: Stress and Strain in the Diamond-Anvil Cell.
- 9:35 *Monika Koch Müller*: Effect of water in wadsleyite and ringwoodite on the P-T-x coordinates of the wadsleyite-ringwoodite phase transformation: an experimental and thermodynamic study
- 10:00 *Sergio Speziale*: Determination of single-crystal elastic properties of olivine and serpentine as a function of chemical composition at conditions of subduction zones up to 25 GPa, 1000° C
- 10:35 **Coffee Break**
- 11:00 *Nico de Koker*: Combining experimental and computational approaches to determine high P and T thermal conductivity of CaGeO₃ and MgSiO₃ perovskite
- 11:25 *Svyatoslav Shcheka*: Silicate perovskite and the terrestrial noble gas signature
- 11:50 **Closing remarks**
- 12:00 **Lunch**
- 13:00 **Departure**