

The Helmholtz Centre Potsdam GFZ, is the national Research Center for Geosciences in Germany and a member of the Helmholtz Association. The Department 3 “Geodynamics and Geomaterials”, Section 3.3 “Chemistry and Physics of Earth Materials” invites applications within the DFG funded Special Priority Program 1236 “Synthesis, in situ characterization and quantum mechanical modelling of Earth materials, oxides, carbides and nitrides at extremely high pressures and temperatures” (<http://www.kristall.uni-frankfurt.de/spp1236>) for a position as

Postdoctoral Research Fellow in High Pressure Mineral Physics

Project Goals:

We plan to determine the elastic properties of single-crystal olivine with different Fe contents and with different OH contents at conditions relevant for the subducted oceanic lithosphere up to 600 km depth along various pressure-temperature profiles corresponding to different subduction geometries. In addition, we also plan to measure the sound velocity of serpentine aggregates within the antigorite stability field, at pressures and temperatures relevant for subduction regimes. In parallel to the experimental study, we will perform first principles simulations of the same materials with special interest in the elastic properties in order to predict the elastic behavior at conditions outside the accessible experimental range.

Tasks:

- Brillouin scattering from single-crystals and polycrystals at simultaneous high pressure and temperature in externally heated diamond-anvil cell.
- Improvement and development of the experimental setup for simultaneous Brillouin and Raman scattering at high pressure and temperature.
- Synthesis, structural and compositional characterization of olivine samples. This implies the use of synchrotron sources also for in-situ high-pressure high-temperature x-ray diffraction and x-ray spectroscopies.
- Participation to the numerical simulation studies of the materials subject of experimental research.

Qualifications:

- PhD in mineralogy, condensed matter physics, mineral physics, or closely related fields.
- Strong experience in experimental research, ideally strong background in optic spectroscopy.
- Experience in ab initio DFT computational methods will be considered in the evaluation.
- Scientific independence and communication skills.
- Very good knowledge of the English language.
- Ability and willingness to work in a team.

Start: As soon as possible

Duration: 3 years

Employment Location: GFZ (Potsdam)
Salary: TVöD EG13 100%
Contacts: Dr. Sergio Speziale (speziale@gfz-potsdam.de Tel.: +49-(0)331-288-1848)
Dr. Sandro Jahn (jahn@gfz-potsdam.de Tel: +49-(0)331-288-1483)
P.D. Dr. Max Wilke (max@gfz-potsdam.de Tel.: +49-(0)331-288-1415)

Equal opportunity is part of our personnel policy. The GFZ Potsdam encourages applications from qualified female candidates. Applicants with physical disabilities will receive preferential consideration if their qualifications and experience are equal to those of other applicants.

Applications should include curriculum vitae, a list of publications, a statement of research interests and a list of addresses of two (or more) potential referees.

Applications should be submitted to:

Helmholtz-Zentrum Potsdam
Deutsches GeoForschungsZentrum
Personal- und Sozialwesen
Telegrafenberg
14473 Potsdam

Application material can also be INFORMALLY submitted electronically to the contacts email addresses.

Evaluation of the applications will begin two weeks after the announcement of the position and continue until position is filled.

Potsdam, September 17th, 2009