

Application

Participants / Eligibility

We are seeking the participation of students from physics, chemistry, and materials science with experimental and theoretical interests on structure-forming processes

A minimum requirement is a bachelor degree.

A doctoral degree should not longer be back than 2 years.

Deadlines

- Application: 30 May 2009
- Notification of acceptance: 15 June 2009
- Notification on full scholarship: 15 June 2009

Participation fee / Scholarship

- Foreign participants: 300,- €

The fee covers all costs related to tuition, meals, accommodation, and cultural programme.

Foreign participants can apply for a **full scholarship** and get notified about its award till the mid of June. The exact amount of refunding, however, will not be apparent until the summer school has started.

Travel costs for foreign students are reimbursed according to the DAAD regulations but only for those with a full scholarship (www.tu-chemnitz.de/physik/PHDS/DAAD_2009/travel.pdf)

- German participants: 300,- €

The fee covers all costs related to tuition, meals, accommodation, and cultural programme.

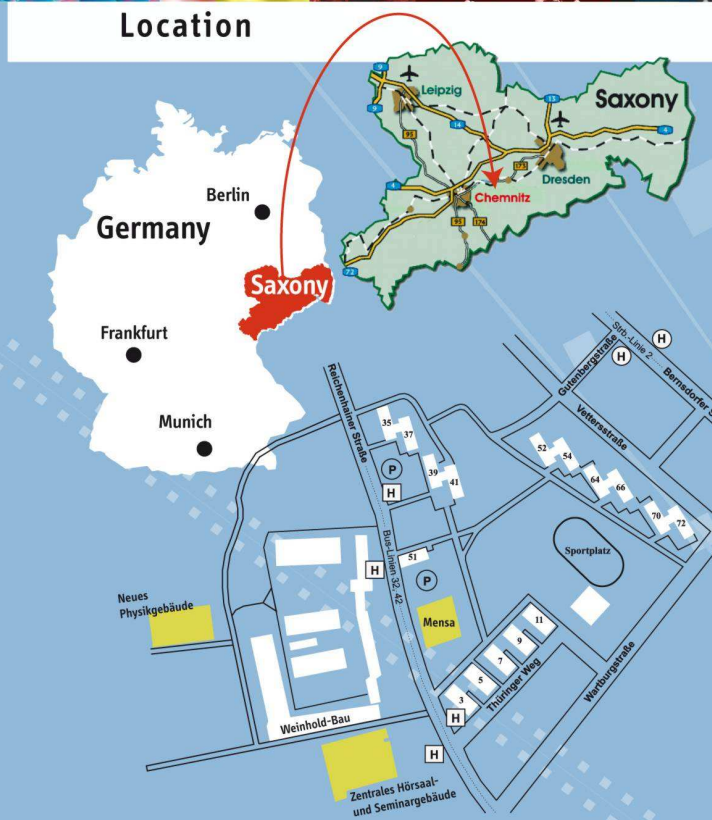
Depending on third-party sponsorships and on personal merit and need german participants will be awarded **partial scholarships**. German participants may apply during the summer school. They may also apply for a partial reimbursement of travel costs. There is no legitimate claim for a partial scholarship.

- Students from Chemnitz: 125,- €

The fee covers the tuition and cultural programme.

Depending on third-party sponsorships and on personal merit and need Students from Chemnitz University of Technology will be awarded **partial scholarships**. They may apply during the summer school. There is no legitimate claim for a partial scholarship.

Location



Contact

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please do not hesitate to contact us

DAAD

Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

1st International Summer Academy

Chemnitz University
of Technology
Faculty of Natural Science

Structure Formation - From a Cloud of Atoms to a Crystal -



13-26/9/2009



CHEMNITZ UNIVERSITY
OF TECHNOLOGY

www.tu-chemnitz.de/physik/PHDS/DAAD_2009

Objectives

Structure formation is currently one of the most interesting topics in many different disciplines. The selforganizing transition from a disordered cloud of 'particles' to an ordered system starts immediately with the big bang and is going on till today at lower temperatures. 'Particles' can be quarks, nuclei, electrons, atoms, molecules, all the electrons acting collectively as a Fermi gas, all the atoms located on mirror planes or other substructures, nano-systems, surfaces. With an increasing complexity new 'particles/systems' get formed at many different stages along many different length- and time scales. Systems may be anorganic or living, from quarks to large structures in the universe (like galaxies), may form within femtoseconds or all along the development of the universe.

It is in particular the step from a cloud of atoms to the ordered state of e.g. a crystal, dominating our surroundings with all the homogeneous and heterogeneous phases, which is still not well understood. In addition, physical and chemical properties of materials exclusively depend on their structure and hence on the final outcome of structure formation. Whereas the formation of small units as molecules is well understood, and the final products, the ordered e.g. crystalline state, can well be described, the formation of the intermediate range is already extremely difficult to handle, its complexity already huge.

The DAAD Summer-Academy will mainly focus on structure-forming processes in condensed matter and will attract the participants interest on a fascinating complex and upcoming field. It will present general principles and shows in addition relations to other disciplines like astro- and high-energy physics.

Structure of the Programme

Lectures in english on structure formation with related problems and new approaches will be presented. Scientists convey a dense overview on the theoretical background, the experimental methods and results, as well as the simulations of real structures. They present new results of structure formation from different disciplines as chemistry, physics, from different fields as amorphous and liquid systems, bulk and nanoscale systems, surfaces. They deal with a few ions in a trap via atoms to molecules and macromolecular systems. Particular emphasis is given to general principles of structure formation on different scales.

Please link to the individual talks via the homepage of the DAAD summer school and the time schedule there. Short descriptions are given with further links.

Cultural Programm

We spent quite some time outside the lecture hall. Scientific tours will guide the participants to a historical silver mine in Freiberg and to the **Geological and Mineralogical Collection** of the **Technical University Bergakademie Freiberg**.

The cultural programme contains a tour through the city, as well as a barbecue, and two evening lectures. A guided tour goes to the **Chemnitz Museum of Industry** and to Dresden the famous cultural city with many more things to see. For enthusiasts in music we arrange a visit to a public concert on classical music. Finally the programme is rounded off with welcome- and fare-well parties.

Speakers

The speakers are scientists (physicists and chemists) from our faculty (Faculty of Natural Science) and guest scientists from other universities or research centers.

There are two speakers giving public talks on structure formation in the universe and in quark-gluon plasmas widening our objectives far beyond condensed matter.

Certificate

A certificate of participation with 9 Credits is given. Its acceptance by your University is under its responsibility.

Accommodation

Participants get accommodated in student houses (single rooms, mainly double rooms)

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