

**Helmholtz Association of  
National Research Centres**

Ahrstraße 45 - D-53175 Bonn  
Telephone: +49 (0)228 30818-0  
Telefax: +49 (0)228 30818-30  
E-Mail: [info@helmholtz.de](mailto:info@helmholtz.de)  
Internet: <http://www.helmholtz.de>

**Deutscher Akademischer  
Austausch Dienst  
German Academic Exchange Service**

Kennedyallee 50 – D-53175 Bonn  
Telephone: +49 (0)228 882-0  
Telefax: +49 (0)228 882 444  
E-mail: [postmaster@daad.de](mailto:postmaster@daad.de)  
Internet: <http://www.daad.de>

## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 1

**Research Field:** Earth and Environment

**Helmholtz Programme:** Marine, Coastal and Polar Systems

**Helmholtz Centre:**



Alfred Wegener Institut für Polar und Merresforschung,  
AWI (<http://www.awi-bremerhaven.de/index-e.html>)

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Biosciences

**Research Area:** Chemical interactions of marine protists - investigation of the regulation of processes and mechanisms between protistan grazers and bloom-forming dinoflagellates as mediated by allelochemicals. Grazer defense, as well as inter-specific competition and pathogenicity, are critical factors that affect the growth and survival of protists, and thus affect the initiation, development and senescence of algal blooms. In this study, toxic and non-toxic strains of protists will be tested for their behavioural responses and growth characteristics when exposed to different planktonic grazers. The responses of key grazers to different prey types will be investigated by combining ecological and molecular approaches, as a means of understanding protistan bloom dynamics.

**Specific Requirements:** The candidate should have profound knowledge of marine biology/ecology, and/or molecular biology. Experience in protist culturing, PCR and Real time PCR methodology, and/or DNA Microarray technology is helpful. Excellent English knowledge is required.

**Work Place:** Bremerhaven; Germany

**Earliest Start:** June 2007

**Language Course:** A German Language Course is possible

**Further Information:** <http://www.awi-bremerhaven.de/>

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

(The description was drawn up by the hosting Helmholtz - Centre)

**Fellowship - No. 2**

**Research Field:** Erde und Umwelt

**Helmholtz Programme:** Marine, Coastal and Polar Systems

**Helmholtz Centre:**



Alfred Wegener Institut für Polar und Merresforschung,  
AWI (<http://www.awi-bremerhaven.de/index-e.html>)

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Climate Sciences/ Paleoclimate Dynamics

**Research Area:** Silicate circulation during the last glacial maximum: The ocean plays an important role in the climate system, partly because of its ability to store large quantities of carbon and thus keeping the atmospheric CO<sub>2</sub> concentration at a relatively low level. We are quite interested in comparing size and distribution of diatom production in the present ocean with those in the glacial ocean.

**Specific Requirements:** To work on that theme, knowledge in physical oceanography is necessary. Experience with FORTRAN is advantageous. Biogeochemical knowledge is no precondition.

**Work Place:** Bremerhaven; Germany

**Earliest Start:** May 2007

**Language Course:** A German Language Course is possible

**Further Information:** <http://www.awi-bremerhaven.de/Modelling/Paleo>

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

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**Fellowship - No. 3 - 5**

**Research Field:** Health

**Helmholtz Programme:** Cancer Research

**Helmholtz Centre:** **dkfz.** German Cancer Research Center Heidelberg, DKFZ  
(<http://www.dkfz.de/en/index.html>)

**Position:** Doctoral Fellow

**Openings:** 3

**Research Areas:** Cell and Tumor Biology  
Functional and Structural Genomics  
Cancer Risk Factors and Prevention  
Tumor Immunology  
Innovative Cancer Diagnostics and Therapy  
Infection and Cancer  
Translational Oncology

**Specific Requirements:** The candidates should hold a Diploma / Master degree. We are looking for excellent and ambitious candidates with the ability to work in a team, good communication skills in English as well as flexibility and high motivation.

**Work Place:** German Cancer Research Center (DKFZ) Heidelberg; Germany

**Earliest Start:** August 2007

**Language Course:** Several German language courses at different levels are being offered for international students at DKFZ

**Further Information:** A list of available projects can be found at  
<http://www.dkfz.de/phd/projects.html>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

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### Fellowship - No. 6

- Research Field:** Earth and Environment / Energy
- Helmholtz Programme:** Biogeosystems / Nuclear safety research
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:**
- Department:** Dept for Safety and Radiation Protection; Radiochemical Laboratory
- Research Area:** Analysis of natural occurring radionuclides in environmental samples. Use of ICP-MS for the determination of radionuclides (U-238, U-235, U-234, Am-241, Th-232 and others) in environmental samples (soil, sediments, plants) collected in different areas. The aim of this work is to study the transport of nuclides in the environment and to assess the risk of natural radionuclides to the population living in areas contaminated. The department is involved in international cooperation projects in e.g. Kazakhstan (Semipalatinsk Test Site, Aktau/Caspian Sea). As part of these projects environmental samples have to be taken, prepared for shipment and later analysed in the lab for radionuclides.
- Specific Requirements:** The candidate should have a profound knowledge in the chemistry and behaviour of (radio)nuclides in the environment (water, soil, air, plants) and should preferably dispose of fundamental background knowledge in handling of environmental samples (sampling, sample preparation, separation techniques, data treatment) and of mass spectrometry (ICP-MS). Knowledge of Russian or Kazakh language is not required but would be preferable.
- Work Place:** Jülich; Germany (nearby Cologne)
- Earliest Start:** May 2007
- Language Course:** Parallel to the Ph.D.-project a German language course is possible
- Further Information:** [http://www.fz-juelich.de/portal/oea\\_gs\\_e](http://www.fz-juelich.de/portal/oea_gs_e)

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

(The description was drawn up by the hosting Helmholtz - Centre)

**Fellowship - No. 7**

- Research Field:** Health
- Helmholtz Programme:** Function and dysfunction of the nervous system
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute for Biological Information Processing, IBI 2 Structure Research
- Research Area:** Natively unfolded proteins are common in various proteomes (as many as 30% in eukaryotes) and occupy a unique area in protein world where function is directly linked to structural disorder. In several neurodegenerative diseases, natively unfolded proteins aggregate intracellularly and play a critical role in disease and pathogenesis. Specific objectives of the project are to identify and characterize natively unfolded proteins involved in signal transduction. We will elucidate the mode of action of individual proteins with a focus on their structure-function relationship. Methods applied include a wide variety of biophysical, biochemical methods in combination with bioinformatics tools. X-ray crystallography is a method of choice for structural investigations of the target proteins complexed to its ligand.
- Specific Requirements:** Candidates should have a strong biochemistry background with 6 months or more work experience in a protein chemistry lab, with a Masters degree (or equivalent) in biochemistry, chemistry, biophysics, biology or related fields, with an excellent study curriculum. Fluency in English language is required and knowledge of basic computer programs is a plus.
- Work Place:** Juelich, Germany (nearby Cologne)
- Earliest Start:** May, 2007
- Language Course:** Parallel to the Ph.D.-project a German language course is possible
- Further Information:** <http://www.fz-juelich.de/ibi/ibi-2/>

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

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**Fellowship - No. 8**

- Research Field:** Health
- Helmholtz Programme:** Function and dysfunction of the nervous system
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home> )
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute for Biological Information Processing, IBI 2 Structure Research
- Research Area:** Characterization of proteins and transcription factors involved in cell regulation (apoptosis, cancer, Alzheimer disease). In vitro studies and structure solution by X-ray crystallography.
- Specific Requirements:** Degree in biology or biochemistry. Fluent in English or German
- Work Place:** Jülich (larger Cologne area); Germany
- Earliest Start:** May 2007
- Language Course:** Parallel to work, it is possible for the candidate to participate in German Language Course offered by Research Centre Juelich
- Further Information:** <http://www.fz-juelich.de/ibi/ibi-2/index.php>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 9

- Research Field:** Health
- Helmholtz Programme:** Function and Dysfunction of the Nervous System
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute for Biological Information Processing, IBI 2 Structure Research
- Research Area:** We are interested in intracellular trafficking of neurotransmitter receptors and autophagy. In this biological context, we are investigating protein-ligand interactions using state-of-the-art biochemical and biophysical methods. Moreover, we are employing X-ray crystallography and NMR spectroscopy for 3D structure determination of protein-ligand complexes.
- Specific Requirements:** The candidate should be highly motivated and have a strong interest in biological sciences. He/she shall be open minded and work independently as well as integrated in a team. The successful candidate must possess a degree in biochemistry, biophysics or related areas. Previous practical experience in biochemistry, biophysics and NMR spectroscopy is desirable but not essential.
- Work Place:** Jülich (larger Cologne area), Germany
- Earliest Start:** May 2007
- Language Course:** Parallel to the Ph.D.-project a German language course is possible
- Further Information:** <http://www.biophys.uni-duesseldorf.de/research/nmr/index.html>  
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## Helmholtz – DAAD – Fellowships 2006 / 2007

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### Fellowship - No. 10

- Research Field:** Structure of Matter  
**Helmholtz Programme:** Physics of Hadrons and Nuclei
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute for Nuclear Physics  
**Research Area:** This position is for detector development and simulation of a future experiment with antiprotons. The student will design, simulate and construct charged particle tracking detectors for the PANDA detector at the future FAIR facility. The PANDA detector will investigate the annihilation of antiprotons on protons in the Charmonium mass region in order to provide high precision tests of the strong interaction. The main physics issues include precision measurements of the charmonium excitation spectrum to extract detailed information on the quark confining potential, firm establishment of gluonic excitations of hadrons (glueballs, hybrids), and hadronic mass generation in systems involving charm quarks. The innermost detector is a silicon based micro vertex detector to enable the measurement of D mesons, this is surrounded by a large tracking detector consisting of straw tube proportional chambers. The Ph.D. - project of the student is to perform Monte Carlo studies of the current detector design of these tracking detectors, then based upon these results optimize the corresponding design, and finally build a prototype of central components of one of these detectors.
- Specific Requirements:** The students must have a master degree (or equivalent) in the field of nuclear or particle physics. Significant experience should be available either with computer programming in C or C++ or FPGA programming in VHDL. Alternatively, significant experience should be available with the development of gas or silicon based detectors. Fluent English is required
- Work Place:** Jülich; Germany (nearby Cologne)
- Earliest Start:** May 2007
- Language Course:** Parallel to the Ph.D-project a German language course is possible
- Further Information:** <http://www.fz-juelich.de/ikp/en/index.shtml>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 11

- Research Field:** Structure of Matter  
**Helmholtz Programme:** Physics of Hadrons and Nuclei
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute for Nuclear Physics (IKP-1)  
**Research Area:** This position is to investigate the breaking of fundamental symmetries in the decay of eta and eta' mesons by performing measurements with the WASA detector at the COSY accelerator. Although Quantum Chromodynamics is generally accepted as the correct theory of the strong interaction, little is known about the solution of this non-linear quantum field theory in the regime of small and moderate energy scales relevant to the matter surrounding us, i.e. where quarks and gluons are confined to bound objects called hadrons. However, the underlying theory remains visible through its symmetries. Symmetry breaking patterns observed in precise measurements of hadronic decays give us access to fundamental properties such as light quark mass differences via isospin breaking, hadronic mass generation via chiral symmetry breaking, and combination of C, P, and T symmetries. Such high precision measurements require high count rates, as e.g. available from hadronic interactions at the COSY accelerator, and large acceptance detectors for charged and neutral reaction products such as the WASA detector. The project for this Ph.D. student is to prepare (and potentially modify) the WASA detector to measure a particular rare decay channel of either the eta or eta' meson, participate in the measurements, and analyze the collected data.
- Specific Requirements:** The students must have a master degree (or equivalent) in the field of nuclear or particle physics. Significant experience should be available either with computer programming in C or C++ or FPGA programming in VHDL. Alternatively, significant experience should be available with the development of gas or silicon based detectors. Fluent English is required
- Work Place:** Jülich; Germany (nearby Cologne)  
**Earliest Start:** May 2007  
**Language Course:** Parallel to the Ph.D-project a German language course is possible  
**Further Information:** <http://www.fz-juelich.de/ikp/en/index.shtml>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 12

- Research Field:** Structure of Matter
- Helmholtz Programme:** Condensed Matter Physics
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute of Solid State Research (IFF) / Neutronscattering (IFF-5)
- Research Area:** Investigation of the large scale dynamics of bio molecules in particular proteins. So far biological function has been mainly related to structure. Recently it has become possible, also to directly investigate the large scale motion of proteins in solution which may underpin their functional properties. It is planned to investigate the domain motion of alcohol-dehydrogenase with and without the binding of NHD as a cofactor in the gap between two domains. Using Neutron Spin Echo Spectroscopy, the dynamic structure fluctuation and their dependence on the cofactor binding is to be studied.
- Specific Requirements:** The applicant should have a solid education in physics, in particular in condensed matter physics with some interest for biophysical problems. Furthermore, knowledge in computing will be required which will be necessary to write the extended codes for data valuation and interpretation. The applicant should speak fluent English or German and should hold a masters degree compatible with German degrees.
- Work Place:** Jülich, Germany (nearby Cologne)
- Earliest Start:** May 2007
- Language Course:** Parallel to the Ph.D.-project a german language course is possible.
- Further Information:** [http://www.fz-juelich.de/iff/e\\_ins](http://www.fz-juelich.de/iff/e_ins)

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

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**Fellowship - No. 13**

- Research Field:** Earth and Environment  
**Helmholtz Programme:** Atmosphere and Climate
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Postdoctoral Fellow  
**Openings:** 1  
**Department:** Inst. for Chemistry and Dynamics of the Geosphere, Troposphere  
**Research Area:** Chemical transformation of multi-component aerosols and its effect on their interaction with water. Aerosol mass spectrometry and cloud activation measurements in order to quantitatively describe the long term chemical evolution of climate relevant properties of aerosols. The goal of the project is to relate hygroscopic and CCN properties of organic aerosols to particle composition and to chemical aging. Atmospheric aerosols are important players in the climate system and the hydrological cycle. Oxidation of plant emissions is the dominant source of secondary organic aerosol components in the atmosphere. Organic aerosol components are aging by liquid phase processes and by the exchange of organic vapours between gas- and particulate phase. These aging processes - oligomerization vs. oxidative degradation - will change the particle properties in time and are not well understood. How will this aging of particles during their lifetime of days in the atmosphere modify their hygroscopic and cloud condensation properties? Organic aerosols will be generated directly in a plant chamber by photo-oxidation of emissions of living plants (young particles). Transformation of particles at natural conditions for a day-night-day cycle will be studied in the large atmospheric simulation chamber SAPHIR (aged particles). The chemical composition of the aerosols will be measured by TOF Aerosol Mass Spectrometry, the interaction with water vapour with a Hygroscopicity Tandem DMA and a new CCN - Spectrometer (Droplet Measurement Technologies).
- Specific Requirements:** PhD in physics, chemistry or geosciences with an overall grade of at least good. Excellent experimental skills. Experience in mass spectrometry and computer programming are helpful. Ability to data interpretation and process modelling. Fast realization of results in publications. The ability to cooperate in an international team, thus good skills in the spoken and written English language.
- Work Place:** Jülich; Germany (nearby Cologne)  
**Earliest Start:** May 2007  
**Language Course:** After having arrived in Jülich a German language course is possible  
**Further Information:** <http://www.fz-juelich.de/icg/icg-ii/homepage>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

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### Fellowship - No. 14

- Research Field:** Health / Energy
- Helmholtz Programme:** Cancer Research / Nuclear safety research
- Helmholtz Centre:**  Forschungszentrum Jülich (<http://www.fz-juelich.de/portal/home>)
- Position:** Postdoctoral Fellow
- Openings:** 1
- Department:** Dept. for Safety and Radiation Protection; Radiobiological Laboratory
- Research Area:** The research area is comprised of the following main fields: clinical radiobiology, biodosimetry and applied radiation protection. The current research of the lab concentrates on the identification of sensitive proteins showing radiation-induced alterations either in their expression profile and/or their post-translational modifications. We want to identify candidate proteins revealing reproducible changes after irradiation in comparison to the controls, serving as biomarkers for individual radio sensitivity. Predictive assays are used to divide the normal population (voluntary healthy donors) and a prostate cancer patient collective into groups of radiosensitive and resistant individuals and in normal responders. After in vitro irradiation and further analysis of blood samples from both population groups, we compare the protein pattern of sensitive, resistant and normal individuals. We hope to identify suitable biomarkers for individual radio sensitivity allowing the prediction of side effects of cancer patients undergoing radiotherapy.
- Specific Requirements:** The candidate should have broad knowledge in radiobiology and have preferably practical experience in protein biochemistry. He /she should preferably dispose of fundamental background knowledge in protein analysis, quantitative PCR and mass spectrometry (ESI-MS).
- Work Place:** Jülich; Germany (nearby Cologne)
- Earliest Start:** Autumn 2007
- Language Course:** A German Language Course is possible at Research Centre Jülich
- Further Information:** <http://www.fz-juelich.de/gs/>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

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### Fellowship - No. 15

- Research Field:** Earth and Environment
- Helmholtz Programme:** Geosystem: The changing Earth
- Helmholtz Centre:**
- 
- GeoForschungsZentrum Potsdam GFZ (<http://www.gfz-potsdam.de/index-en.html>)
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Departments 1, 2 and/or 3: Geodesy and remote Sensing; Physics of the Earth; Geodynamics
- Research Area:** GFZ currently develops an integrated program aimed to investigate coupled processes at the South American convergent continental margin. Particular emphasis is on transient processes and the seismic cycle observed with seismological, geodetic, seismic, and neotectonic techniques.
- Specific Requirements:** She/he is expected to have a master's degree in geology, geodesy, or geophysics and She/He to have practical experience in several of the following research fields: quantitative methods of neotectonics, continuum mechanics, seismotectonics, reflection seismology, tectonic geomorphology, space geodetic data analysis (GPS), analogue or numerical modelling. The applicant should be familiar with UNIX systems and programming.
- Work Place:** Potsdam; Germany
- Earliest Start:** Spring 2007
- Language Course:** Internal German Language Course will be offered
- Further Information:** <http://www.gfz-potsdam.de/pb3/welcome.html> (Prof. Dr. O. Oncken)

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Telefax: +49 (0)228 30818-30  
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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 16

**Research Field:** Earth and Environment

**Helmholtz Programme:** Geosystem: The changing Earth

**Helmholtz Centre:**



GeoForschungsZentrum Potsdam GFZ (<http://www.gfz-potsdam.de/index-en.html>)

**Position:** Postdoctoral Fellow

**Openings:** 1

**Department:** Departments 1, 2 and/or 3: Geodesy and remote Sensing; Physics of the Earth; Geodynamics

**Research Area:** GFZ currently develops an integrated program aimed to investigate coupled processes at the South American convergent continental margin. Particular emphasis is on transient processes and the seismic cycle observed with seismological, geodetic, seismic, and neotectonic techniques.

**Specific Requirements:** She/he is expected to have a Phd in geology, geodesy, or geophysics and She/He to have practical experience in several of the following research fields: quantitative methods of neotectonics, continuum mechanics, seismotectonics, reflection seismology, tectonic geomorphology, space geodetic data analysis (GPS), analogue or numerical modelling. The applicant should be familiar with UNIX systems and programming.

**Work Place:** Potsdam; Germany

**Earliest Start:** Spring 2007

**Language Course:** Internal German Language Course will be offered

**Further Information:** <http://www.gfz-potsdam.de/pb3/welcome.html> (Prof. Dr. O. Oncken)

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**Helmholtz – DAAD – Fellowships 2005/2006**

(The description was drawn up by the hosting Helmholtz - Centre)

**Fellowship - No. 17**

- Research Field:** Key Technologies
- Helmholtz Programme:** Advanced Engineering Materials
- Helmholtz Centre:**  GKSS-Forschungszentrum Geesthacht GmbH  
([http://www.gkss.de/index\\_e\\_js.html](http://www.gkss.de/index_e_js.html))
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Institute of Polymer Research
- Research Area:** Development of polymer based membranes with stimuli sensitivity. The project will be carried out in collaboration with other research groups and includes synthesis, chemical and physical characterization of the polymers, as well as the investigation of membrane properties.
- Specific Requirements:** Knowledge in synthetic polymer chemistry and characterization is essential. Basic knowledge of polymer physics, processing and membrane technology is advantageous.
- Work Place:** Geesthacht; Germany
- Earliest Start:** April 2007
- German Language Course:** A German Language Course is possible.
- Further Information:** <http://www.tf.uni-kiel.de/matwis/abetz>

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## Helmholtz – DAAD – Fellowships 2005/2006

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 18

**Research Field:** Key Technologies

**Helmholtz Programme:** Advanced Engineering Materials

**Helmholtz Centre:**  GKSS-Forschungszentrum Geesthacht GmbH  
([http://www.gkss.de/index\\_e\\_js.html](http://www.gkss.de/index_e_js.html))

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Institute of Polymer Research

**Research Area:** Development of polymer based nanofibres by electrospinning. The project includes studying the parameters of the electrospinning process as well as the theoretical description (mechanical modelling) of the electrospinning process.

**Specific Requirements:** Knowledge in polymer physics and characterization is essential. Basic knowledge of polymer synthesis, processing and membrane technology is advantageous.

**Work Place:** Geesthacht; Germany

**Earliest Start:** April 2007

**German  
Language Course:** A German Language Course is possible.

**Further Information:** <http://www.tf.uni-kiel.de/matwis/abetz>

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## Helmholtz – DAAD – Fellowships 2005/2006

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 19

- Research Field:** Key Technologies
- Helmholtz Programme:** Advanced Engineering Materials
- Helmholtz Centre:**  GKSS-Forschungszentrum Geesthacht GmbH  
([http://www.gkss.de/index\\_e\\_js.html](http://www.gkss.de/index_e_js.html))
- Position:** Postdoctoral Fellow
- Openings:** 1
- Department:** Institute of Polymer Research
- Research Area:** Development of polymer based materials for anti-corrosion coating of light weight metals. The project will be carried out in collaboration with other research groups and includes synthesis, chemical and physical characterization of the polymers.
- Specific Requirements:** Knowledge in physics and chemistry of polymers and polymer composites, and morphological characterization is essential. Basic knowledge of polymer processing and the chemistry of metals is advantageous.
- Work Place:** Geesthacht; Germany
- Earliest Start:** April 2007
- German Language Course:** A German Language Course is possible.
- Further Information:** <http://www.tf.uni-kiel.de/matwis/abetz>

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## Helmholtz – DAAD – Fellowships 2005/2006

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 20

- Research Field:** Earth and Environment
- Helmholtz Programme:** Marine, coastal and polar systems
- Helmholtz Centre:**  GKSS-Forschungszentrum Geesthacht GmbH  
([http://www.gkss.de/index\\_e\\_js.html](http://www.gkss.de/index_e_js.html))
- Position:** Postdoctoral Fellow (3 years)
- Openings:** 1
- Department:** Institute of Coastal Research, Department KIZ (LOICZ Office)
- Research Area:** Further development of a coastal typology database and classification tool. Based on a multiplicity of global datasets the project focuses on up- and down-scaling local and regional scientific information and classifying coastal zones and their drivers of change. In coop. with US and other international partners.
- Specific Requirements:** Experiences in IT and Java development, GIS applications, relational database administration (Oracle/SQL); good organizational and communication skills (e.g. workshops, training), ideally in an international work surrounding; Experience or interest in global change and/or coastal (natural and/or social sciences); at least good working knowledge of English language; Flexibility and willingness to undertake overseas travel.
- Work Place:** Geesthacht; Germany
- Earliest Start:** April 2007
- German Language Course:** A German Language Course (2 hours, once a week) is possible. A block course at the beginning would be preferred. Willingness to learn German is required
- Further Information:** <http://www.loicz.org>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 21

**Research Field:** Structure of Matter

**Helmholtz Programme:** Large-scale Facilities for Research with Photons, Neutrons and Ions

**Helmholtz Centre:**



Hahn-Meitner-Institut Berlin  
([http://www.hmi.de/hmi/index\\_en.html](http://www.hmi.de/hmi/index_en.html))

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Department SF6-Trace elements

**Research Area:** Identification and localization of metals/metalloids in new biological active proteins in the brain of the rat and neuronal cell-lines by combination of neutron activation analysis (NAA), microprobe-synchrotron radiation X-ray fluorescence ( $\mu$ -SRXRF), laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS) and several biological methods.

**Specific Requirements:** The candidate should have basic knowledge in biophysics, chemistry/biochemistry; good English language skills are essential.

**Work Place:** Berlin; Germany

**Earliest Start:** April 2007

**Language Course:** A German Language Course is possible

**Further Information:** <http://www.hmi.de/bereiche/SF/SF6/index.html>

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
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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 22

- Research Field:** Structure of Matter
- Helmholtz Programme:** Large-scale Facilities for Research with Photons, Neutrons and Ions
- Helmholtz Centre:**  Hahn-Meitner-Institut Berlin  
([http://www.hmi.de/hmi/index\\_en.html](http://www.hmi.de/hmi/index_en.html))
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Materials - SF3
- Research Area:** Investigation of complex multi-component materials with anomalous small-angle X-ray scattering (ASAXS).
- Specific Requirements:** Interest in small-angle scattering methods and in synchrotron facilities and related equipment; interest in materials science or solid state physics; ability to work with and help visiting groups using our new ASAXS facility at the BESSY synchrotron in Berlin.
- Work Place:** Berlin, Germany
- Earliest Start:** May 2007
- Language Course:** A German Language Course is possible
- Further Information:** [http://www.hmi.de/bereiche/SF/SF3/index\\_en.html](http://www.hmi.de/bereiche/SF/SF3/index_en.html)

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**Helmholtz – DAAD – Fellowships 2006 / 2007**

(The description was drawn up by the hosting Helmholtz - Centre)

**Fellowship - No. 23**

**Research Field:** Structure of Matter

**Helmholtz Programme:** Large-scale Facilities for Research with Photons, Neutrons and Ions

**Helmholtz Centre:**  Hahn-Meitner-Institut Berlin  
([http://www.hmi.de/hmi/index\\_en.html](http://www.hmi.de/hmi/index_en.html))

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Materials - SF3

**Research Area:** Materials science with synchrotron X-ray tomography – investigation of semi-solid alloys, fibre-reinforced concrete or electrochemical power units

**Specific Requirements:** Interest in X-ray imaging methods and synchrotron radiation and related equipment; mathematical and computational skills; interest in engineering and materials science problems; ability to work with and help visiting groups using our facilities at the synchrotron BESSY.

**Work Place:** Berlin, Germany

**Earliest Start:** May 2007

**Language Course:** A German Language Course is possible

**Further Information:** [http://www.hmi.de/bereiche/SF/SF3/index\\_en.html](http://www.hmi.de/bereiche/SF/SF3/index_en.html)

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
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Telephone: +49 (0)228 882-0  
Telefax: +49 (0)228 882 444  
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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 24

- Research Field:** Structure of Matter
- Helmholtz Programme:** Large-scale Facilities for Research with Photons, Neutrons and Ions
- Helmholtz Centre:**  Hahn-Meitner-Institut Berlin  
([http://www.hmi.de/hmi/index\\_en.html](http://www.hmi.de/hmi/index_en.html))
- Position:** Postdoctoral Fellow
- Openings:** 1
- Department:** Materials - SF3
- Research Area:** Materials science with synchrotron X-ray tomography. Improvement and development of facilities and implementation of key experiments to test and exploit them.
- Specific Requirements:** Experience with X-ray imaging methods or with synchrotron radiation and equipment in general; mathematical and computational skills; interest in engineering and materials science problems; ability to work with and help visiting groups using our facilities at the synchrotron BESSY.
- Work Place:** Berlin, Germany
- Earliest Start:** May 2007
- Language Course:** A German Language Course is possible
- Further Information:** [http://www.hmi.de/bereiche/SF/SF3/index\\_en.html](http://www.hmi.de/bereiche/SF/SF3/index_en.html)

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 25

**Research Field:** Health

**Helmholtz Programme:** Infection and Immunity

**Helmholtz Centre:**



Helmholtz Centre for Infection Research, Braunschweig, Germany  
<http://www.helmholtz-hzi.de/en/>

**Position:** PhD student (Doctoral Fellow)

**Openings:** 1

**Department:** Research Group “Biological Systems Analysis”

**Research Area:** The project involves the attempt to understand the dynamics of host-pathogen interactions (viral, bacterial) using time series analysis of gene expression analysis and functional perturbation strategies. The goal is to develop tools that allow modelling and simulation of infectious disease processes.

**Specific Requirements:** Training in basics of systems control theory. Basic knowledge in biology. (Degree in engineering or biology/bioinformatics). Interest in analysing the dynamics of biological systems using both experimental as well as mathematical-engineering approaches.

**Work Place:** Braunschweig; Germany

**Earliest Start:** May 2007

**Language Course:** Participation at a German Language Course at the Helmholtz Centre for Infection Research is possible

**Further Information:** [http://www.helmholtz-hzi.de/en/research\\_groups/molecular\\_biotechnology/systems\\_biology/bba@helmholtz-hzi.de](http://www.helmholtz-hzi.de/en/research_groups/molecular_biotechnology/systems_biology/bba@helmholtz-hzi.de)

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 26

**Research Field:** Earth and Environment

**Helmholtz Programme:** Sustainable Use of Landscapes

**Helmholtz Centre:**  UFZ Centre for Environmental Research Leipzig-Halle  
<http://www.ufz.de/index.php?en=616>

**Position:** Doctoral Fellow

**Openings:** 1

**Department:** Department of Environmental Microbiology

**Research Area:** **KEYWORDS.** Metabolic networks, trophic interactions, resilience and redundancy, BTEX-degradation, microbial communities, calorimetry  
The project aims at investigating metabolic networks and trophic interactions in a BTEX-contaminated wetland. At the Department of Environmental Microbiology, an ongoing project deals with the effects of the transition of an anoxic contaminated aquifer system to a constructed wetland. Key issues to investigate include the functional role (BTEX degradation, grazing), diversity (community structure) and energy fluxes (calorimetry) of target microorganisms representing different trophic levels (bacteria, fungi, protists) in biogeochemical and spatial gradients. In particular the project will focus on the relevance of complex interactions and the redundancy of microbial functions for ecosystem performance and resilience. Experiments will include simple laboratory microcosms as well as a constructed wetland.

**Specific Requirements:** Highly motivated person with an advanced knowledge in microbiology, ecology and molecular biology. Additional experience with microcosm experiments would be appreciated. Methods employed are: microscopic techniques, microcalorimetry, rRNA-based methods, stable isotope probing (SIP), PLFA-analysis; cultivation, metabolites analysis

**Work Place:** Leipzig; Germany

**Earliest Start:** May 2007

**Language Course:** A German Language Course is possible

**Further Information:** <http://www.ufz.de/index.php?en=1443>

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## Helmholtz – DAAD – Fellowships 2006 / 2007

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 27

- Research Field:** Earth and Environment
- Helmholtz Programme:** Sustainable use of landscapes
- Helmholtz Centre:**  UFZ Centre for Environmental Research Leipzig-Halle  
<http://www.ufz.de/index.php?en=616>
- Position:** Doctoral Fellow
- Openings:** 1
- Department:** Ecological Modelling
- Research Area:** Ecological modelling with the aim to understand key mechanisms and processes of species coexistence to support sustainable management of biodiversity including ecosystem functions and services; combination of ecological models with concepts (e.g. recruitment limitation, intermediate disturbance hypothesis) and questions of experimental design in test systems
- Specific Requirements:** MSc in Mathematics, Physics, Biology or Applied Systems Science, interest in theoretical ecology, especially community ecology; knowledge in a modern computer language (e.g. C++, Delphi, Java); knowledge in ecological modelling; interest in interdisciplinary cooperation; knowledge in spatial statistics and microbiology is desirable; good command of English
- Work Place:** Leipzig, Germany
- Earliest Start:** May 2007
- Language Course:** A German Language Course is possible
- Further Information:** <http://www.ufz.de/index.php?de=1444>

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## Helmholtz – DAAD – Fellowships 2005/2006

(The description was drawn up by the hosting Helmholtz - Centre)

### Fellowship - No. 28

- Research Field:** Key Technologies
- Helmholtz Programme:** Advanced Engineering Materials
- Helmholtz Centre:**  GKSS-Forschungszentrum Geesthacht GmbH  
([http://www.gkss.de/index\\_e\\_js.html](http://www.gkss.de/index_e_js.html))
- Position:** Postdoctoral Fellow
- Openings:** 1
- Department:** Corrosion and Surface Treatment.
- Research Area:** Characterisation of corrosion properties and structural integrity of magnesium alloys and their weldments (stress corrosion cracking, hydrogen embrittlement, corrosion fatigue, wear); effect of corrosion protective coatings; development of biodegradable Mg-alloys.
- Specific Requirements:** The candidate should have a strong background in materials sciences and, preferably, experience in electrochemistry and corrosion of light metals. He/she should be able to design and perform experiments and to present results at international conferences and in scientific journals.
- Work Place:** Geesthacht; Germany
- Earliest Start:** April 2007
- German Language Course:** A German Language Course is possible.
- Further Information:** [http://www.gkss.de/pages.php?page=w\\_mg\\_technologie.html&language=e&version=g](http://www.gkss.de/pages.php?page=w_mg_technologie.html&language=e&version=g)