

## Guidelines for BESSY II beamtime application

A clearly written proposal for an experiment at HZB can greatly increase the chances that the Scientific Selection Panel will recommend your application for beamtime allocation. In the following you will find hints and tips on writing the perfect proposal.

In general, one scientific proposal might request the use of several beamlines at BESSY. Before you write your proposal, we advise you to contact HZB beamline scientists/station managers to talk about your experiments. They can help you to decide on the most suitable instruments, additional equipment and the amount of time you will need to complete your experiments. It might be helpful to include the beamline scientists/station managers as co-proposer (please discuss this in advance with the respective scientist). Thus, they would be able to read the proposal online and check if the technical requirements of the experiments can be fulfilled before the final submission of your proposal.

All proposals should be accompanied by reports on former HZB experiments.

The HZB offers a range of ways to request beamtime at HZB facilities:

### Regular Access

Regular access is the standard route to apply for beamtime at HZB. There are two calls for proposals each year with deadlines on the 1st of March and on the 1st of September. All regular access proposals are reviewed by the HZB Scientific Selection Panel (SSP). Beamtime under regular access at HZB is free of charge for national and international academic users, provided that the results from experiments at HZB will be published in the public domain.

External users (non-HZB affiliated users) may choose one of the following options:

- Standard (default for new proposals)
- CRG (for groups with an existing cooperation contract with HZB)
- BAG (only MX)

In cases of urgent experiments (hot topic research, samples with finite lifetimes) please contact the HZB Beamtime Coordination to discuss which possibilities might be available.

### Commercial Access

Private sector researchers can use the HZB facilities provided that the research is in collaboration with an academic partner from a university or research organization. Standard review of the proposals applies and results must be published in the public domain.

Industry users and users who do not wish to publish their results of HZB experiments in the public domain can arrange to purchase beamtime. Please contact the HZB Beamtime Coordination to discuss the details.

### Access for testing (MX only)

For MX there is the possibility to apply for testing time on a short-term basis. Maximum amount of testing time is one shift. Please contact the [MX lab](#) in advance to discuss the details.

## Long term proposals (LTP)

For dedicated instruments it is possible to apply for beamtime over the period of two years (4 proposal rounds). The option is available in the technical part section of the proposal application.

## Submitting proposals

Proposals must be submitted using the online proposal system [GATE](#).

All intended co-proposers must be registered in GATE. A proposal can be entered over several sessions and you can save partially completed proposals. Editing your proposal is possible until the deadline for submissions.

New users must register their details in the online proposal system to receive an account before being able to submit a proposal. You can view and modify your personal details at any time. If you have any questions about the online proposal system, please contact the Beamtime Coordinators.

## Scientific part

The heart of your proposal is the science case. This must be written in English and must be no longer than two A4 pages. The font size shall not be smaller than 12pt (written text and figure captions). In the scientific part you should address the following topics:

### **Scientific context**

You should give a clear account of the aims of the experiment and set it within the broader scientific context. Keep in mind that not all review panel members are experts in the field. List the 5 most important publications in this field of science in order to show that you are aware of the work of others.

### **Choice of specific beamline or station**

Give reasons for your choice of instrument. Justify why you need to use this particular instrument and why HZB is important.

### **Preliminary work**

If possible, give results of preliminary work carried out (for example, NMR or light scattering experiments) in support of your proposed experiment and to demonstrate sample quality.

### **Necessity of synchrotron radiation**

In a separate textbox you will be asked later on to state the necessity of synchrotron radiation use. Please explain why synchrotron radiation is needed.

## Technical part

In the technical part you will need to define the experimental parameters of your proposed experiment. You should choose the appropriate instrument and the desired sample environment or experimental station. Please note that not all sample environment equipment or experimental stations are available for all instruments. It is advisable to check your requirements with the sample environment team or instrument scientists/station managers in advance. If you want to apply for more than one instrument you must submit a separate technical requirement for each instrument.

### **Bringing your own equipment**

To comply with the general safety rules of a large laboratory, potential users must ensure that the measuring equipment also fulfils certain requirements which partially depend on the beamline being used. Most importantly, measuring stations at BESSY II have to be operated under such conditions that an impairment of the beamline and storage ring vacuum is prevented. In general, this means the station itself runs under ultra-high vacuum conditions. If you intend to bring your own equipment to HZB, please contact the instrument scientist in advance and provide a risk assessment.

## Experimental plan

You must give a detailed description of the experiment, including sample and parameter changes. You should also justify the amount of beamtime you asked for in the technical part.

List the number of samples and sample environment conditions (for example, temperatures, pressures, magnetic fields...) and estimate the measuring time for each sample, or sample condition, to show how you calculated the overall beamtime requirements. For a complex series of experiments, please show a breakdown of how you arrived at your final beamtime request. Also include any time needed for equipment set-up and sample equilibration. Ask the sample environment group or the instrument scientist/station manager for help if needed.

Example: 2 samples at 3 pressures and 4 temperatures for 5 hours each =  $2 \times 3 \times 4 \times 5 = 120$  hours of beamtime

### **Samples**

Describe the samples you intend to measure and address any relevant safety issues.

### **Previous results**

Supply a list of recent publications from work at HZB as well as Experimental Reports related to experiments which are connected to the new beamtime application. As well as giving supporting information for your proposal, a good track record of publications following HZB experiments can increase the chances of your proposal being accepted. The Experimental Reports must be submitted via GATE before they can be attached to the beamtime application.

## You will need a 24-hour team

If your proposal is successful, you will be responsible for arranging a competent research team to be at HZB on a 24-hour basis for the duration of your beamtime. The Beamline Scientists will not act as experimentalists for your beamtime campaign. Please note that for safety reasons we have to cancel your experiment if the number of present experimentalists is insufficient.

## Safety

It is important that you give accurate information about the safety of the samples and the safety of the proposed experiment. Failure to give correct information could delay the start of your experiment. The safety declaration must be confirmed and a detailed description of all chemicals (also gases and samples) brought to BESSY II must be uploaded via GATE at least 3 weeks before the scheduled beamtime! Please go [here](#) for more information on the safety and chemicals declaration.

## For your information

The following information on successful proposals will appear on the HZB webpages:

- proposal number
- group affiliation
- instrument
- days allocated