

## Accelerator Proposal Form: Guidance Notes

The boxes provided are expandable; however please do not exceed 2 pages of A4 for your proposal. Minimum font size of 10pt to be used. 11pt is preferable.

It is recommended that you discuss your proposal with a relevant member of the DCF Experimental Team before completing and submitting this form.

When completed, email the form to [dcf.experiments@manchester.ac.uk](mailto:dcf.experiments@manchester.ac.uk)

**DCF Proposal Number:** Do NOT fill this in. This is an identification number which will be generated by DCF on receipt of your proposal.

**Project Title:** A brief title for the proposal.

**UKNIBC Funding:** If you are applying for access via the UK National Ion Beam Centre you will need to obtain validation (through DCF) before applying for actual beamtime. You will then be allocated a reference number which is used here so that we can correctly account for UKNIBC funded access. Please also check which category out of the four listed is appropriate for the UKNIBC validation.

**Principal Investigator:** This should be the scientific leader of the proposal and should be a university academic or equivalent. It is not essential that the PI attends DCF for the experiment, in which case they should identify (see below) who will be the Team Leader in their absence.

**Secondary Investigators:** Other people on the team who are expected to attend DCF.

Please identify the Team Leader (e.g. by underlining). This is the person who will be the on-site experimental lead. It is useful to provide the Team Leader's mobile phone number as it may be necessary to contact them whilst they are off site during their DCF visit.

**Experimental Details:** Please provide as much information as you can on required irradiation and sample parameters (dose per sample, dose rate etc.). As some information will be more relevant to the irradiator (e.g. dose and dose rate) than to the accelerator (where radiation type and ion beam energy needs specifying), not all boxes will need to be filled in. If in doubt, consult with a relevant member of the DCF Experimental Team before submitting the form.

**Objectives:** Please include the following

- Aim of the proposed experiment and description of the scientific background,
- Results of any previous own work relating to this proposal,
- Explain what results are expected and how they will help solve the scientific question posed,

**Experimental Description:** Please include the following

- Experimental details:
- Experimental method
- Samples, including type and number
- Specific technical requirements (e.g. electrical connections, heating/cooling)
- Planned collaborations
- Explain why this experiment requires access to DCF facilities
- Confirm that this proposal has been discussed with a member of the experimental team at DCF

- Access to any specialist analytical equipment at DCF - <http://www.dalton.manchester.ac.uk/discover/daltoncumbrianfacility/discover/facilities/> This should also be ticked in the relevant checkbox under OTHER DCF EQUIPMENT REQUIRED
- For ion beam irradiation requirements: Outline the proposed irradiation, specifying as much as possible the ion type (proton, alpha, etc.), ion energy and current. Alternatively provide dose and dose rate, or material damage required, however we will need comprehensive information about your sample to allow for SRIM calculations to be made to determine the beam current and energy. Give a brief description of the sample(s), including material and size. Please be specific and not just state (e.g.) 'a number of polymer samples will be irradiated' – rather you should specify the type of polymer, giving some indication of the variety and scientific justification. You will need to justify the time requested based on length of irradiation, number of samples and any additional time needed for setting up.

**References:** Any recent own publications relating to your work in this area, or by others that are relevant to the proposed study.

**Scheduling Constraints:** We will make every effort to arrange facility scheduling for your convenience. However if there is excessive demand, this may not always be possible. Please provide as much information on constraints you already know about, such as how soon your experiment can be ready, or deadlines by which the irradiation needs to be completed by. Include any specific dates which you already know will not be possible.

If you need the requested time split into blocks – for example to allow time for analysis between irradiation runs, please indicate how the time should be split and what interval is needed between blocks.

**Safety:** Please include the following

- Hazards: Chemical, abnormal pressures, temperatures (cryogenic, hot etc.), electrical, radiological (for proton ion beams, sample activation can be expected – the extent of this can limit our ability to handle the irradiated sample and return it to you) etc.

**Consumables & Equipment:** Please include any materials or equipment consumables that will be required and whether they will be supplied by you or need to be made available. Please note that DCF will not normally be able to provide consumables for your experiment. Also specify any equipment you plan to bring to DCF.

**Other DCF Equipment Required:** We have a selection of analytical equipment available. These need to be booked in advance, so if you wish to use any of these during the course of your irradiation please highlight your requirement here. Include any specific details in your experimental description.. Equipment currently available includes :

- SEM (FEI Quanta 250, also indicating whether you want to do Imaging, EDS, EBSD or WDS)
- XRD (Empyrean, Panalytical)
- IR-Raman
- Optical microscope (with DIC, Olympus)
- Sample preparation (cutting, grinding, polishing, Struers)

**Outputs:** Please include any publications, conference presentations etc. you hope the experiment will contribute to.