



UK and EU Access to the Central Laser Facility - Artemis

Beam-time application for the period Dec 2011 – May 2012

Applications are now invited for access to beam-time at the Artemis laser facility at the Central Laser Facility, STFC Rutherford Appleton Laboratory during the period Dec 2011 – May 2012. A total of twelve weeks is available for access. Up to four of these weeks are available for EU access, provided through Laserlab Europe. The **deadline for applications is 4th Sept 2011**. All applications will be peer-reviewed by the Artemis Facility Access Panel.

Please read the information and instructions in the following document before applying.

Regards

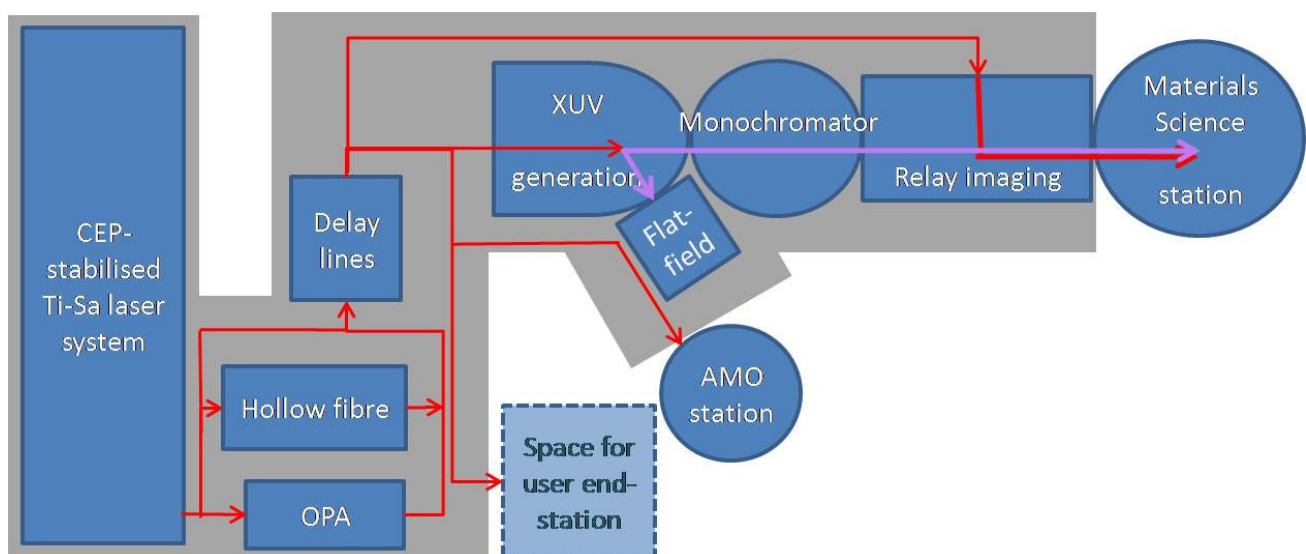
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Artemis Group Leader

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Facilities available

In this period, Artemis will offer laser and XUV beamlines for pump-probe experiments and end stations for Materials Science and Atomic and Molecular Physics.



The laser and XUV pulses are generated from a carrier-envelope phase-stabilised laser system producing 30 fs, 780 nm pulses with up to 12 mJ/pulse at 1 kHz. The carrier-envelope phase can be

stabilised to 325 mrad rms for periods of up to one hour at full power and five hours at the 2 mJ level.

The output energy of the laser can be split into the following beam-lines:

- 1 mJ can be further compressed to 7 fs, with 0.5mJ/pulse, and
- 8 mJ can be used to pump an IR OPA system providing tuneable ~40 fs pulses in the spectral range of 235 nm - 15 μ m with an output of up to 1 mJ/pulse at 1300 nm, and
- The remaining energy can be used as synchronized pump/probe pulses.

Any of the Artemis laser beamlines can be used to generate XUV pulses through high harmonic generation. The following XUV beamline equipment will be available:

- High harmonic generation chamber with kHz gas-jet or cw nozzle and an XUV flat-field spectrometer (10-45 nm spectral region).
- Monochromator to select a single XUV harmonic in the spectral range 12 eV-100 eV while preserving the pulse-length to within 10 fs.
- Absolutely calibrated channel electron multiplier to measure the XUV flux.
- Relay imaging chamber containing a toroidal mirror and optics to enable laser and XUV pulses to be recombined for pump-probe experiments.

These laser and XUV beamlines can then be focused into:

- A Materials Science end-station for time- and angle-resolved photoemission spectroscopy with hemispherical photo-electron analyser and 14 K five-axis cryo-manipulator, or
- An Atomic and Molecular Physics (AMO) end-station with velocity-map imaging detector and molecular beam, or
- Space provided for users to bring their own end-stations, which must conform to CLF safety standards.

Further details and contacts

More technical specifications can be found at www.clf.stfc.ac.uk/Facilities/Artemis/12270.aspx.

We urge you to contact an appropriate Artemis staff member to discuss your requirements (laser wavelengths, beamline configuration etc.) prior to submission.

Artemis staff will make a technical assessment of the feasibility of your proposal and identify any potential safety issues arising from your proposed experiment. This report is passed to the Access Panel. Please make sure there are enough experimental details in your proposal to enable us to do this. In particular, please provide details of any samples and gases to be used. We will contact you before the panel meet if we identify any serious problems.

For more detailed information please contact:

- Emma Springate (<mailto:emma.springate@stfc.ac.uk>) (Artemis group leader; AMO station)
- Edmond Turcu (<mailto:edmond.turcu@stfc.ac.uk>) (Laser beamlines)
- Cephise Cacho (<mailto:cephise.cacho@stfc.ac.uk>) (Materials Science; XUV beamline)

Submitting a proposal

Use the CLF online proposal system (<http://proposal.isis.rl.ac.uk/home/>) to submit an electronic application. To do this:

- If this is your first proposal, register with the online proposals system by clicking on the New Facility User button and then using your e-mail address as the Login Identifier. It is

important that you provide full and accurate address details so that we can communicate with you and your co-investigators.

- If you have already registered then please check and update your information as necessary.
- On the home page enter the relevant facility and then create your new proposal following the on-line instructions. For enquiries with regard to proposal submission please contact the CLF user office <mailto:clf@stfc.ac.uk>.
- Upload your **science case of up to 3 pages**.

UK applicants

We now need to collect information about how this proposal relates to your funding. In step 3 of the form, please indicate whether this proposal is part of a work-package of an existing funded grant or whether it is in support of a future grant proposal.

EU applicants

EU access is provided through Laserlab Europe (<http://www.laserlab-europe.net/>). Please check your eligibility at <http://www.laserlab-europe.eu/transnational-access/how-to-apply-for-access-1/criteria-of-eligibility-for-transnational-access>. You will need to submit your proposal both through us and Laserlab Europe. To do this:

- On the CLF proposal form, flag the ‘Laserlab’ option in ‘proposed access route’ and ‘yes’ for EU access at Step #3 (Facility Access and Funding).
- Download a .pdf copy of your application and use the Laserlab online proposal system at <https://laserlab.mbi-berlin.de/access/> to submit it.
- Note that the Laserlab site asks for detailed information about your co-applicants, including their year of birth.
- At the last step, attach the .pdf copy of your proposal produced by the CLF proposal system. The Laserlab site requires that your .pdf be **less than 1 MB** in size.

Review criteria

Applications for time on Artemis are assessed by the Facility Access Panel within the following criteria:

- Absolute pre-requisite, without which an application will not be recommended for funding:
 - Scientific excellence: specific objectives of the project.
 - International competitiveness.
 - Strategic value within the STFC/Artemis programme.
- Supporting evidence which increases the confidence in a successful outcome:
 - Productivity of Investigator.
 - Productivity of grant supported staff (where relevant).
 - Quality of leadership/management.
 - Suitability of Institution/Group.
- Additional criteria that may be considered include: potential for economic impact, training, strategic alignment to RCUK areas, facility development, impact plan.