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managed by Brookhaven Science Associates
for the U.S. Department of Energy

Dear Colleague,

This is a call for proposals, and a warm invitation to participate in our next *Accelerator Test Facility (ATF) User Meeting and ATF II Upgrade Workshop* to be held at Brookhaven National Laboratory, correspondingly, on October 14-15 and October 16-17, 2014.

A short synopsis of the facility's capabilities, beam parameters and equipment is attached to this letter. For additional information about our user program, together with guidance on submitting and performing your experiment at the ATF, please visit the ATF website at www.bnl.gov/atf. Interested researchers should submit their proposals by **September 15th** to atf@bnl.gov. Please include a completed proposal submission form (www.bnl.gov/atf/access.php) along with a detailed scientific case for your research. Proposals shall be presented in person to the ATF's Program Advisory Committee at the User Meeting in October.

Immediately following the ATF User Meeting, we will host the *ATF II Upgrade Workshop* on October 16-17, 2014. The purpose of the workshop is to inform the user community about upcoming new unique research opportunities at the ATF and, then, through active interactions, get the community's feedback so that we can better accommodate users' needs. I encourage you to attend both events.

Registration for the User Meeting and Upgrade Workshop is open now, at www.bnl.gov/atfusersmeeting/. A limited number of rooms in BNL's Guest House have been reserved for participants. Information about our Guest House and other lodging options are listed on the meeting website.

I look forward to seeing you at the ATF in October.

Sincerely,

A handwritten signature in black ink, appearing to read "Igor Pogorelsky". The signature is fluid and cursive, with a large, sweeping initial "I".

Igor Pogorelsky
Interim Director
Accelerator Test Facility

(see attached)



Facilities and equipment available at the ATF:

An **Electron Beam** deliverable to two experimental beam lines that can be tailored as follows:

- Energy: 30 – 80 MeV (Tunable)
- Charge: 10 – 1000 pC / bunch (Tunable)
- Bunch length: 0.1 – 6 ps (Tunable)
- Typical normalized emittance: 1 – 2 μm
- Minimum energy spread: 0.1%
- Minimum transverse size: 5 μm
- Repetition rate: 1.5 Hz
- Microsecond pulse trains
- Bunch trains with tunable spacing are available using the mask technique

Three different **Lasers** are available for laser-based experiments; they also can be brought into synchronized collisions with the electron beam. The parameters of the ATF's laser are as follows:

- **TW CO₂**
 - Peak power: up to 2 TW
 - Pulse length: 3 ps
 - Wavelength: 9-10 μm
- **Nd:Yag**
 - Pulse energy: IR = 10 mJ, UV = 0-30 μJ
 - Pulse length: IR = 14 ps, UV = 8ps
 - Wavelength: IR = 1.06 μm UV = 0.353 μm
- **Ti:Sapphire**
 - Pulse energy: 3 mJ
 - Pulse length: 180 fs
 - Wavelength: 785 nm

Experimental Chambers with the following multiple built-in features are available to experimenters.

- Laser – electron-beam interaction points with provisions for tightly focusing both beams,
- Provisions for synchronizing and co-aligning the laser and electron beam,
- Plasma source, and,
- Multiple viewing ports and motorized in-vacuum translations.

Beam Diagnostics at the ATF allow users to retrieve data on both the condition of the electron beam and laser, such as energy, bunch length, spot size, and emittance. A list of the diagnostics equipment that is available to users includes

- Beam Profile Monitors
- Gigabit Cameras with Frame Grabbers
- Bolometers
- Electron and Optical Spectrometers
- Faraday Cups
- Photodiodes
- Laser Joule Meters
- Streak Camera
- Frequency-Resolved Optical Gating (FROG)
- Thomson Parabola Ion Spectrometer
- IR Cameras
- EMCCD Cameras
- Oscilloscopes

The ATF also offers **scientific- and technical-expertise** and support in experiment safety, laser, e-beam, vacuum, mechanical- and electrical-engineering, computer-controls and data acquisition.

Use of the ATF is free for non-proprietary work (cost recovery is in effect for raw materials, manufacturing, and proprietary work).



Proposal Submission Form



PRINCIPAL INVESTIGATOR

Last Name	First Name	Date
Institution	Street Address	
City	State	ZIP
Phone	E-mail Address	

SECONDARY INVESTIGATORS

Last Name	First Name	E-mail Address

EXPERIMENT DETAILS

Title				
Type	<input type="radio"/> Re-Submission	<input type="radio"/> New Proposal	<input type="radio"/> Continuation	Funding Source
Research	<input type="radio"/> Proprietary	<input type="radio"/> Non-proprietary (publication in open source or peer review journal expected)		

Objectives:

Abstract:

SCHEDULING

Expected start date for experiment setup ____ / ____ / ____	Expected installation time: ____ hours
Expected start date for beam time ____ / ____ / ____	Beam time requested: ____ hours
Expected completion date ____ / ____ / ____	Expected take-down time: ____ hours

Please coordinate with Mikhail Fedurin (fedurin@bnl.gov) to determine the best way to schedule your experiment.

SPECIAL REQUIREMENTS

Equipment:

Scientific Involvement:

Technical Support for Installation:

General Lab Services (rigging, etc.):

Other:

Please coordinate with Karl Kusche (kusche@bnl.gov) to identify necessary equipment and services.

HAZARDS

Potential Hazards (Inc. lasers, cryogenics, magnetic fields, etc.):

Please coordinate with Karl Kusche (kusche@bnl.gov) to identify possible hazards.

JUSTIFICATION

Benefit to DOE or other stakeholder (please list stakeholders):

Please attach a detailed scientific case (including references) and send to: atf@bnl.gov, using "New Proposal" as the subject line.