

HEPM 2010



2nd Workshop on High Energy Proton Microscopy Chernogolovka, Russia, June 2 – 4, 2010 *First Announcement*

Dear Colleagues,

We are pleased to invite you to participate in the 2nd Workshop on High Energy Proton Microscopy to be hosted by the Institute of Problems of Chemical Physics RAS in Chernogolovka, Russia, on June 2–4, 2010.

High energy proton microscopy (HEPM) is a novel technique for high-resolution radiographic imaging of the interior of thick and dense objects in dynamic experiments by mono-energetic beams of GeV-energy protons. Using this diagnostic technique, one can measure density of a thick sample with sub-percent accuracy. The spatial resolution is a few micrometers over a centimeter-wide field of view and the time resolution is on the nanosecond scale.

Presently, HEPM accelerator user facilities are available at Los Alamos National Laboratory (LANL) in United States and at the Institute for Theoretical and Experimental Physics (ITEP) in Russia, both using 800 MeV protons. Proton microscopy is the key diagnostics for the HEDP/WDM experiments with intense heavy ion beams planned at the Facility for Anti-proton and Ion Research (FAIR) in Darmstadt, Germany. Recently, a new project called PRIOR has been started for developing a unique proton microscopy facility at GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt, Germany. The PRIOR facility will provide a significant step forward to advance heterogeneous material and warm dense matter studies in both spatial and temporal resolution (sub-10 μm @ 20 ns) by using 4.5 GeV protons from the SIS-18 synchrotron of GSI. This worldwide unique facility may provide a capability for unparalleled high-precision experiments with great discovery potential for many fields of basic and applied research.

The first workshop on High Energy Proton Microscopy (HEPM) met in August 2009 at GSI (<http://www-aix.gsi.de/conferences/HEPM2009>). The purpose of the workshop was to explore present and future fundamental research in the fields of plasma physics, material sciences, biology, high energy density physics (HEDP) and warm-dense-matter (WDM) studies, and to apply the novel diagnostic tool – high spatial and temporal resolution proton microscopy for solving basic problems in these areas. 65 scientists attended the workshop from China, Germany, Italy, Russia, Spain, and the United States. There was broad agreement at the workshop that developing a detailed knowledge and understanding of dynamic material properties at extremes will require probes with unprecedented spatial, temporal and density resolution, such as provided by high energy proton microscopy.

The second HEPM workshop will provide an opportunity to continue and enhance these discussions, making an emphasis on the new scientific proposals for the existing and planned HEPM facilities, and especially – for PRIOR. We rely on active participation of members of our developing international proton microscopy collaboration, and are pleased to welcome participants from a broader scientific community for educating on HEPM capabilities and discussing its potential applications in their fields of research.

The further information about the workshop is posted on the workshop web site: <http://www.ficp.ac.ru/hepm2010/>

On behalf of the Organizing Committee,
With the best regards,
Victor Mintsev

Workshop Topics

- present and future applications of high spatial and temporal resolution proton microscopy for materials research, plasma physics, biophysics, HEDP / WDM studies and other basic and applied sciences;
- parameters and requirements for the existing and future accelerator proton microscopy facilities;
- discussion on scientific program for the PRIOR facility.

Organizing Committee

- Nikolay Andreev, JIHT, Moscow
- Cris Barnes, LANL, Los Alamos
- Vladimir Fortov, JIHT, Moscow
- Alexander Golubev, ITEP, Moscow
- Dieter Hoffmann, TUD, Darmstadt
- Frank Merrill, LANL, Los Alamos
- Victor Mintsev, IPCP, Chernogolovka
- Kurt Schoenberg, LANL, Los Alamos
- Thomas Stölker, GSI, Darmstadt
- Vladimir Turtikov, ITEP, Moscow
- Dmitry Varentsov, GSI, Darmstadt

Local Organizing Committee

- Victor Mintsev (Chairman)
- Sergey Kolesnikov (Secretary)
- Valery Sultanov
- Nikolay Shilkin
- Alexey Matveichev
- Oksana Ivanova
- Vasily Sosikov
- Nina Kochetkova

Workshop Website

<http://www.ficp.ac.ru/hepm2010/>

Registration

Registration is now opened [at the workshop website](http://www.ficp.ac.ru/hepm2010/).

Registration deadline: May 4, 2010

Workshop Fee

100 EUR. This fee will include local transportation, coffee breaks, workshop dinner.

Visa Support

LOC will carry out an official procedure to allow all the participants requiring a visa to enter Russia to get it in time. The Organizing Committee strongly recommends to prepare all necessary information for visa obtaining (<http://www.ficp.ac.ru/hepm2010/visa.php>) **before April 15, 2010**. Contact LOC for more details using hepm10@ficp.ac.ru e-mail address.

Workshop Venue and Accommodation

The Workshop will be held at Usadba Country Club near Chernogolovka (<http://www.club-usadba.ru/>, in Russian). It is situated in a pleasing countryside 35 km away from Moscow. LOC will reserve for the workshop 24 single and double rooms (approx. 40–75 euro per person per night, depending on the room). Breakfasts and lunches are included.

Contact Information

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