UFLTA 2010

The Third International Workshop on Ultra Fast Laser Technology & Applications

NILES IC-SAS — Cairo University

Objectives of UFLTA-010

Cairo University is implementing an ambitious capacity building project "A Laboratory for Advanced High Density Physics" based on establishing an ultra fast laser producing peak focused intensities in the range of 1019 to 1021 W/cm2 (Tw – Petawatt peak powers of energy 3–30 J compressed at ≈ 30 fs)

The study of the interaction of such high density laser fields with matter is an important rapidly expanding branch of physics since the last five years. The potential applications of this research are numerous, not only in physics, but also in new energy resources, chemistry, biology, material science and in the fast ignition approach to fusion.

Also new interdisciplinary fields and applications are now a days emerging such as emission of nuclei and elementary particles, acceleration of electrons, ions and particles, generation of coherent X-rays…The results obtained now are unprecedented and could have significant impact on the long-term future of the well – established fields such as nuclear, high energy physics and new energy sources.

The contribution of the Invited International Experts To this meeting in the form of Keynote, Plenary or Invited Talks would be highly valuable to furnish grounds for the collaboration and support of the International Scientific Community to the project. It will also enlighten the importance of these kinds of research areas. It will help in planning the training programs to be followed locally or internationally in order to attract young scientists to join such important fields of research. Then once the infrastructure is finished one can fill up the positions for immediate execution of real studies.

A policy for deciding future R&D projects is urgently needed. Local & International researchers are providing their point of view of how to implement points of research to be immediately started and other simulation calculations to help foreseeing the future as a backbone research activity at Cairo University. Proposal programs from International Centers & Universities are needed to benefit from mutual research in the fields of basic research and applications for industrial innovation and in particular laser fusion for new energy resources as well as for X-ray lasers, astrophysical plasmas , chemistry, biology, medicine and communication security aspects.

www.eun.eg/UFLTA-010/Home.htm

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INVITED SPEAKERS & TITELS OF TALKS

- **Annie Klisnick**,Directrice de Recherches , (LIXAM), Univ. Paris-Sud FRANCE
  Keynote Talk: Ultra Fast Laser Produced XUV & X-Ray LASER. Experimental Recent Results
- **Christopher Keane** Director of the NIF User Office at Lawrence Livermore National Laboratory (LLNL), USA
  Keynote Talk "The National Ignition Facility: New Frontiers in High Energy Density Science.
- **David Ros**, Director of the LASERIX facility,LPGP,Orsay University, FRANCE
  Keynote Talk "LASERIX Facility"
- **Enam A. Chowdhury** ,Senior Research Associate, SCARLET HEDP Laboratory, The Ohio State University, Columbus OH, USA
  Keynote Talk: "How to achieve &measure highest intensities in the World"
  Plenary TALK : "Key experiments in amo at these intensities".
- **Fazal-e-Aleem**, CHEP, University of the Punjab, Lahore-54590, PAKISTAN
  Keynote Talk: "Ultrafast Laser Technology - New Prospects of Up To Date Achievements to attain GeV e- beams
- **Gui Lu Long**, Prof. CPhys, P Department of Physics,Tsinghua Univ.,Beijing, CHINA
  Plenary talk: Quantum Secret Sharing Based On Grover Algorithm and Its Experimental Realization
- **Hem.C.PANT** Hon. Professor , Jadavpur University, Kolkata, INDIA
  Plenary Talk LASER INDUCED SHOCK COMPRESSION OF SOLID TARGETS USING MULTI LAYERS
- **Jai Pal Mittal**, Bhabha Atomic Research Centre,Trombay, Mumbai 400 085, INDIA
  Plenary Talk A New type of Sub-picosecond Pulse radiolysis facility based on femtosecond Laser Photo-Cathode – Some recent results
- **Ken Ledingham**,Professor of Physics& William Penney Prof. of Laser Nuclear Physics Dep. of Physics,Univ. of Strathclyde, Glasgow , Scotland,UK
  Keynote Talk on High Intensity Lasers in Nuclear Physics
- **Michael Downer** College of Natural Science Distinguished Professor, Physics Dep, Univ. of Texas at Austin, Austin,TX 78712108, USA
  Keynote Talk "Holographic visualization of laser wakefields
- **Panagioti A. Loukakos**, FOundation for Research and Technology-Hellas (FORTH) Institute of Electronic Structure and Laser (IESL)N., GREECE
  Plenary Talk :Studies of ultrafast processes in condensed matter with ultrashort laser
- **Ping Xue**, Professor of Physics, Dep. of Physics, Tsinghua Univ., Beijing CHINA
  Invited Talk"Ultra High Resolution Optical Coherence Tomography and Nonlinear Confocal Microscopy Using Ultra Fast Laser"
- **Sultana N. Nahar** Dep. of Astronomy, The Ohio State University 140 West 18th Avenue, McPherson Laboratory Columbus, OH 43210, USA
  Keynote Talk "High Energy Density Astrophysics - Photoionized Plasma
- **Thomas Kühl**, GSI und Johannes Gutenberg Universität Mainz GSI Helmholtzzentrum für Schwerionenforschung GmbH, Planckstraße 1 Darmstadt, GERMANY
  Keynote Talk: "Diagnostics developments at PHELIX, a petawatt-class high-energy laser for laser and heavy-ion plasma experiments

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Sponsors

Project on "Plasma Based x-ray Laser"
PBXL IC- SAS,NILES
Cairo University
Academy Of Scientific Research
Arab International Optronics
Topical Society Of Laser Sciences

PP XL — ASRT — TSLS

Please consult the website for more details
The Program and cultural
activities will be announced Later on
the 2nd Announcement
On
The website

www.eun.eg/UFLTA-010/Home.htm