LASERLAB-EUROPE: Integrated European Laser Laboratories

Lasers are a key element of research across various disciplines, from life science to material research. Europe has a leading role in laser research and the LASERLAB-EUROPE project is working to strengthen this position through increased cooperation between laser laboratories. Building on the previous LASERLAB-EUROPE project, the project aims to integrate more laser centres and further improve access to these facilities across Europe.

LIGHTING UP THE WORLD OF LASER RESEARCH

Lasers crop up, it seems, practically everywhere in the modern world. From supermarket barcode scanners to communication highways, from mapmaking to missile guidance, from minimum invasive surgery to automobile production – the special properties of laser light are invaluable.

To make sure that European laser research and technology continues to develop on course, the project has brought together 24 leading research organisations from 16 countries, including the national laboratories of many European countries. The project includes networking activities and joint research. It also provides transnational access to top-quality laser research facilities for scientists all over Europe.

LASERLAB-EUROPE is working to continue the success of the first project by integrating even more laser facilities and creating more and better opportunities for collaboration and networking. Having an affordable and widely available table-top laser system is a key part of broad, interdisciplinary and innovative academic research and allows more researchers to have access to laser technologies. Meanwhile, large lasers are paving the way towards new discoveries and applications of light-matter interaction and are often combined with a concentration of smaller, highly innovative prototype systems. These systems are most frequently housed in laboratories and research infrastructures which provide access to researchers from across Europe.

In addition, LASERLAB-EUROPE's unique consortium of laser facilities has forged an effective infrastructure between them which greatly facilitates coordination between all project

partners. In terms of networking, this means that there is a great deal of cross-fertilisation with the user community which will lead to specialised instrumentation and methods of mutual benefit for both users and hosts. Moreover, the new project takes into greater consideration user feedback so that there is a higher and more constant level of quality control of access and improvement of laser facilities.

One of the main goals of the new LASERLAB-EUROPE is to expand the partner base, particularly to the new EU Member States. These new partners will actively work with the existing infrastructure and use the knowledge and experience of existing partners to improve labs in their countries as well as train and recruit new users and strengthen the culture of transnational cooperation.

SEVENTH FRAMEWORK PROGRAMME

EUROPEAN COMMISSION

RAISING THE PROFILE OF LASERS

Overall, LASERLAB-EUROPE is working to build a world-class virtual laser research infrastructure of European dimension that will last beyond the life of the project. It is hoped that this infrastructure will lead to a unified pan-European one that will effectively work within a large network. Such an infrastructure will allow a great deal of flexibility within the system with regard to adapting to developments in research as well as stimulating resource pooling.

The results of LASERLAB EUROPE are expected to include: higher profiles for the participating organisations and the consortium as a whole; new discoveries that will fill gaps in existing laser technology; and a more integrated approach to laser research in Europe. Through its virtual infrastructure, the project will lay the foundations for lasting and sustainable networking.

Project acronym: LASERLAB-EUROPE

Funding scheme (FP7): Integrating Activities (IA)

EU financial contribution: €10 million
EU project officer: Hugues Crutzen

Duration: 36 months
Start date: 1 March 2009
Completion date: 28 February 2012

Partners:
Forschungsverbund Berlin (DE)
Association pour la Recherche et le Développement des Méthodes et Processus Industriels, ARMINES (FR)
Commissariat à l'Energie Atomique (FR)
Centro de Laseres Pulsados Ultracortos Ultraintensos (ES)
Centre National de la Recherche Scientifique (FR)
Foundation for Research and Technology-Hellas (EL)
Friedrich-Schiller-Universität Jena (DE)
Helmholtzzentrum für Schwerionenforschung GmbH, GSI (DE)
Institut de Ciencies Fotoniques (ES)
International Laser Centre (Medzinárodné laserové centrum) (SK)
National Institute for Laser, Plasma and Radiation Physics (Institutul National de Cercetare-Dezvoltare Pentru Fizica Laserilor, Plasmei si Radiatiei) (RO)
Instituto Superior Técnico (PT)
Vrije Universiteit Amsterdam (NL)
Laboratorio Europeo di Spettroscopie Non Lineari (IT)
Lunds Universitet (SE)
Max-Planck-Gesellschaft zur Förderung der Wissenschaften (DE)
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