Project Partners

LA³NET comprises eleven full beneficiary partners that host the researchers, twelve associated partners and a growing number of adjunct partners (currently seven). The beneficiary partners will all host between one and three early stage researchers (ESRs), each dedicated to a specific research project. Associated and adjunct partners will play a role in the network-wide training and some will provide secondment places for ESRs in relevant scientific or technological areas. Ten of the 30 partners currently engaged are from industry providing cross-sector opportunities for training and collaboration.

Beneficiary Partners

Associated and Adjunct Partners

Project Management

The Steering Committee is responsible for the overall network strategy and takes all decisions concerning the network. It presently consists of the following elected members:

Dr. Rob Ashworth, the project manager for LA³NET is a biochemist and a corporate member of CIWEM. He also coordinated the FP7 research support role of the Enterprise Europe Network in England's North West.

Dr. Arnd Baurichter, VP Sales and Marketing of Danfysik, Denmark, is representing industry in the Steering Committee and has worked at international research centres and universities before moving to the industry sector.

Andrii Borysenko is the researcher elected to represent the fellows. He will be working on measurements of the electron bunch shape with electro-optical sampling in an electron accelerator at the Karlsruhe Institute of Technology (KIT).

Dr. Enrique Conejero Jarque is working at the University of Salamanca and Centro de Láseres Pulsados Ultracortos Ultraintensos in Spain on laser-plasma interactions in the ultra-short ultra-intense regime.

Prof. Dr. Allan Gillespie has held the Chair of Photonics at the University of Dundee since December 2004. His research currently focuses on FELs and lights sources, mobile computing and nanomaterials.

Dr. Nathalie Lecesne is leader of the Resonant Ionization Laser Ion Source (RILIS) project at GANIL, France. She studied in Orsay and Caen and has also worked at TRIUMF, Canada.

Prof. Dr. Carsten P. Welsch, Cockcroft Institute and The University of Liverpool, UK, initiated the LA³NET project and is the scientific coordinator. His research is in accelerator R&D with a focus on low energy accelerators and beam instrumentation.

Contact

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http://www.la3net.eu

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LA³NET

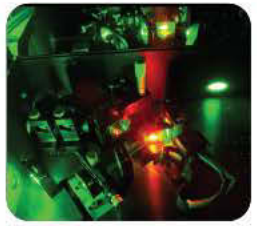
Project Overview

Within LA³NET, laser applications for particle accelerators are being developed within an international network.

LA³NET comprises a network of 30 organisations from academia and industry across Europe brought together for the advancement of LAsers for Applications at Accelerator facilities. Within the network 17 early stage researchers (ESRs) work on research projects at 11 of the partner sites with secondments between partner sites incorporated. The project also provides a wide ranging training programme comprising schools, workshops and an international conference. Most of these events will be open to external delegates and it will also be possible for additional 'adjunct' partners from around the world to join this initiative.

LA³NET is an FP7 Marie Curie Initial Training Network (ITN), funded by the European Commission with a project budget of 4.6 M€. Through this network, international research centres, universities and industry partners will develop beyond-state-of-the-art techniques and technologies through a joint cross sector training program within a unique European partnership.

You will find more information about LA³NET and all research projects at: **http://www.la3net.eu**



The time is right for LA³NET

Now is the perfect time for training motivated researchers in this field as lasers will play a crucial role in future development of accelerators. Laser-based particle sources are well suited for delivering the highest quality ion and electron beams. Laser acceleration has demonstrated unprecedented accelerating gradients and might be an alternative for conventional particle accelerators in the future. Without laser-based beam diagnostics it would not be possible to unravel the characteristics of many complex particle beams.

Training & Events

The fundamental core of the training is a dedicated cutting edge research project for each fellow. This will be complemented by a series of network-wide events that include external participation and be open to the wider scientific community.

Research Projects

Most fellows will work on their projects for 36 months and will be registered into a PhD program. The research projects are structured around the following topics:

Particle sources:

1. Development of a solid state laser system for Resonance Ionization Laser Ion Source (RILIS) of the ISOLDE on-line isotope separator
2. Research and development of photocathodes sensitive to visible laser beams for photoinjector applications
3. Development of a high brightness superconducting RF photo injector for electron-laser interaction experiments at the ELBE accelerator facility
4. Integration of a resonant ionization laser ion source system into the existing off line test bench of the SPIRAL2 TISS

Particle beam acceleration schemes:

5. Development of a compact, fibre optics-based electron accelerator
6. Investigations into particle acceleration for hadron therapy
7. Electron acceleration at the laser focus
8. Developing the current experimental research into laser acceleration to a pre-commercial level
9. Laser particle acceleration and laser driven Thomson x-ray backscattering on electron sources

Beam diagnostics:

10. Development of a laser velocimeter
11. Development of a laser emittance meter
12. Measurement of the bunch shape with electro-optical sampling in an electron accelerator
13. Precision determination of electron beam energy with Compton backscattered laser photons
14. An advanced electro-optic bunch time profile monitor for the CERN CLIC Project – development of novel materials and techniques

System integration:

15. Ultra-stable optical clocks and timing distribution for accelerator applications
16. Computer-based modelling and experimental optimization studies into novel high voltage supplies and generators

Laser and photon detector technology:

17. Development of a 3D neutron detector for complex geometries

Topical Workshops

1st LA³NET Topical Workshop
Laser particle sources: CERN, Switzerland.
20-22 February 2013.

2nd LA³NET Topical Workshop
Laser technology & optics design: ILT, Germany.
2nd half 2013 TBC.

3rd LA³NET Topical Workshop
Acceleration techniques: HZDR, Germany. 2nd half 2013 TBC.

4th LA³NET Topical Workshop
Knowledge transfer & spin-offs: RI, Germany. 2014 TBC.

5th LA³NET Topical Workshop
Beam diagnostics: STFC, UK. 2014 TBC.

International Schools

Participants at the Laser Applications School at GANIL, France.

1st LA³NET School
Laser applications (basic level): GANIL, France.
15-19 October 2012.

The School successfully brought together the laser and accelerator communities and the presentations given are available via the project web page.

2nd LA³NET School
Complementary skills: University of Liverpool, UK.
18-22 March 2013.

3rd LA³NET School
Laser applications (advanced level): CLPU, Salamanca, Spain. June 2014 TBC.

4th LA³NET School
Employability: University of Liverpool, UK. January 2015 TBC.

Conference & Symposium

International Conference on Laser Applications
University of Liverpool. December 2014 TBC.

Symposium Accelerators & Lasers for Science
and Society Cockcroft Institute, UK. June 2015 TBC.