Newsletter
February 2013
Issue 4

Special Interest Articles

Individual Highlights

LA³NET workshop series saw excellent start

LA³NET's training concept is based on 'local' training of our fellows through cutting edge research, provided by each host institution, in combination with a rather large number of 'network-wide' events that bring our trainees together with the wider research community. This includes international Schools, such as the one organized last October in GANIL, Workshops on selected topics, as well as a Conference and Symposium that will be organized as the project progresses. We are confident that this unique combination of events will provide our fellows with an excellent basis for their future careers and at the same time support knowledge transfer, networking across institutions and sectors, and regular discussion of the state-of-the-art.

The network's Topical Workshop series started this month with a thee day **workshop on laser-based particle sources**, including photo injectors and laser ion sources, at CERN. Around 50 researchers joined us on this occasion, ranging from early stage researchers to research leaders from all over the world. In more than 30 oral presentations the current state-of-the-art was presented and present challenges discussed. Needs for collaborative research were identified and future funding opportunities discussed.

LA³NET fellows Irene Martini, Tom Day Goodacre and Jose Luis Henares all contributed talks and took an active part in the discussions. Our CERN trainees were also very actively involved in the overall planning and organization of the workshop.

This first workshop was considered as extremely valuable by all participants. On behalf of all partners I would like to thank all who made this event possible for their hard work. We look forward to the many events yet to come !

The next highlight is approaching very quickly: Mid March all fellows will gather in Liverpool for a week-long **school on complementary skills**. Presentation skills training, an introduction to project management, overview of career options and work on scientific outreach will all form part of this week. It will be the second time that all trainees get together and will give them an opportunity to talk about their experiences within the network and research to date.

With the project's mid term review meeting in June and more workshops later in 2013, very interesting times lie ahead of us !

Enjoy this newsletter edition.

Prof. Carsten P. Welsch, Coordinator

First LA³NET Topical Workshop on Laser Particle Sources 20th – 22nd February 2013

The first LA³NET Topical Workshop on laser based particle sources was held at CERN attracting nearly 50 researchers from Europe and beyond. CERN provided the ideal location for the workshop being a centre of expertise on the production of electron beams with photoinjectors and resonance laser ionization of radioactive isotopes. This expertise was complemented by the invitation of 10 international renowned speakers to give 40-minute talks on their current research in this area. This included LA³NET scientists Jochen Teichert from HZDR who spoke on the "Generation of electron beams with superconductive photoinjectors" and Keming Du from EdgeWave GmbH on "Applications of INNOSLAB lasers in science and industry".
An additional 22 delegates delivered oral presentations providing the perfect balance of talks on the generation of electron and ion beams using laser methods. Among these speakers were LA³NET fellows Jose Luis Henares from GANIL and from CERN Irene Martini and Thomas Day Goodacre who also both helped in the organisation of the event. LA³NET fellows Pengnan Lu from HZDR and Kamil Nowacki from Foton also attended the workshop. In addition Professor Carsten P. Welsch from the University of Liverpool gave a presentation on laser research and development and researcher training through LA³NET for the benefit of external participants. The programme content is summarised in a book of abstracts submitted by the speakers that is available via the event website.

The first day featured 13 talks on topics such as RF photo injectors and photocathodes, the resonance ionization laser ion sources (RILIS) at ISOLDE/CERN and ISAC/TRIUMF facilities. These were complemented by laboratory visits in the late afternoon.

Day two focussed on gas jet and gas cell laser ion sources and laser drivers for photo injectors. The 13 formal sessions were rounded off with a dedicated discussion on preparations for future research projects and potential collaborations. The day was completed with a workshop dinner for all participants.

The final day comprised 6 talks with topics ranging from superconducting photoinjectors to spectroscopy.

A special thanks for ensuring the smooth running and success of the event goes to the local organising team led by Valentin Fedosseev with the assistance of Geraldine Jean, Bruce Marsh and Christoph Hessler from CERN and Nathalie Lecesne from GANIL.

You will find full information about the workshop and access the book of abstract via the LA³NET project web site: **www.liv.ac.uk/la3net/events/workshops/...**

Profiles of the latest 6 fellows recruited for LA³NET

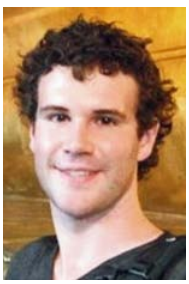
The latest fellows working on LA³NET projects are Tom Day Goodacre at CERN, Switzerland; Mateusz Tyrk at Dundee University, Amir Aimidula at Liverpool University, both in the UK; Jose Luis Henares at GANIL in France and Jakob Krämer at Danfysik in Denmark. In addition, the start of the new year saw Andreas Döpp taking up position at CLPU in Salamanca to replace Mireille Coury who resigned from this post towards the end of 2012.

Tom Day Goodacre studied a BSc in mathematics at the University of Leeds, graduating in 2010. The course involved a broad range of modules from Electromagnetism and Cosmology to Group Theory and Analysis.

Following his BSc, Tom took a year out to travel: backpacking around South East Asia and volunteering with Raleigh International to work on ecological and sanitation projects in Malaysian Borneo.

Upon returning he studied an MSc in Photon Science at the University of Manchester. This included courses considering both the theoretical underpinnings of laser physics and some of the cutting edge laser based systems in use today. His dissertation focussed on the effects of implanting Aperiodic Distributed Feedback (ADFB) gratings into THz Quantum Cascade Lasers (QCLs).

Following the end of his MSc in September2012, Tom joined the LA³NET project working at CERN on the Resonant Ionisation Laser Ion Source (RILIS) which is part of ISOLDE, a radioactive ion beam facility. The core of his project will be based around developing new ionisation schemes to complement the recent addition of 3 Ti:Sa lasers to the original dye laser setup. During his time at CERN he will also work towards a PhD in Nuclear Physics with the University of Manchester.



Mateusz Tyrk was born in Gdańsk in Poland in 1987. He studied applied physics in the faculty of applied physics and mathematics at the Gdańsk University of Technology (Politechnika Gdańska) in Poland. He graduated in 2011 defending his master's thesis on the subject of 'The DtN and NtD methods for the interior Helmholtz problem'. He gained there a great experience from the interfaces of applied physics, mathematics and numerical analysis. He has gained an expertise in a number of laboratory techniques that he used during his studies, as well as the ability to plan and organize a complex piece of work, solve problems in an effective manner and write a detailed analytical report.

After moving to Scotland in 2012 he started working as a laser systems engineer in Coherent Glasgow- the Scottish branch of one of the biggest laser manufacturers in the world. In September 2012 he joined the LA³NET consortium in a research project based at the University of Dundee in the UK. Within this project he will help develop novel electro-optic (EO) materials in the form of thin-film 2D birefringent 'metamaterials' artificially produced to yield a high EO coefficient. These materials will be structured via laser processing of a suitable nanocomposite substrate doped with a noble metal. Project activities will include development and testing of the metamaterials at Dundee and the STFC Daresbury Laboratory (Warrington, UK), incorporation into EO beam profile monitors at Daresbury, and implementation of these techniques at the CTF3 facility at CERN, PSI Villigen (Switzerland), and other laboratories.

Amir Aimidula was born in the Xinjiang Uighur Autonomic Region of China. He studied material physics as an undergraduate and focused on laser particle accelerations for his master's, both at Xinjiang University.
His master's thesis concerned numeric investigation of positron acceleration in the plasma wakefield driven by an asymmetric intense laser pulse. He also studied at Tokyo University and the Accelerator Research Organization of Japan (KEK) for one and half years as a research student. During this time, he worked on a fiber laser development laboratory project and computer simulation to design compact laser accelerators.
In the LA³NET project he will investigate fiber optics based electron accelerators. In this project he will optimize structures by simulation, demonstrate results by experiment and find new applications.

UNIVERSITY OF LIVERPOOL

Jose Luis Henares was born in Palencia (Spain). He studied Materials Science Engineering in the University of Salamanca (Spain) and attained his master´s degree in June 2011. His master´s thesis concerned the study of the tribological properties of metallic surfaces structured with a femtosecond laser. The objective was to improve the life of mechanical parts subjected to wear strains.
Jose Luis worked 18 months for the University of Salamanca in a project of aluminium sinterization from workshop debris, and also he spent 10 months at the CLPU (Salamanca, Spain) employed for the study of radiation generation by femtosecond laser sources. He also received training on Industrial Design and Art History.
In the LA³NET project he will develop the new laser ion source for the SPIRAL2 facility, the upgrade of GANIL ion accelerator (Caen, France). He will be enrolled in the PhD program of the University of Caen. In his project, he will optimize the resonant laser ionization of selected elements of interest for SPIRAL 2 while reducing, if possible, the contamination by unwanted species. For that purpose, he will develop resonant laser ionization schemes and study the properties of different hot cavities. The results of these studies will allow him to take part in the SPIRAL 2 ion source prototype conception and development and participate in the off-line experiments for complete characterization of the system regarding ionization efficiency, selectivity, ion beam emittance and long term operation.

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Jakob Krämer studied physics at the University of Duisburg-Essen, Germany obtaining his master's degree in September 2012. During his master thesis studies he finished the commissioning of an irradiation facility for highly charged ions and investigated the defect creation in graphene on calcium fluoride. For his studies Jakob was awarded a scholarship by the Cusanuswerk, the scholarship body of the Catholic Church in Germany, which offers a comprehensive interdisciplinary education program. For two years he was a delegate of a regional group of scholars and since June 2012 he has been a member of their board.

In October 2012 Jakob took up his position at Danfysik in the LA³NET project and will also be enrolled as a PhD student at the Technical University in Dresden. He is going to develop an achromatic final focusing lens system for the ELBE electron beam in Dresden-Rossendorf. This new focusing system shall increase the yield of X-rays generated by Thomson scattering at the interaction point with the 150TW Draco-Laser.

DANFYSIK

Andreas Döpp studied physics at RWTH Aachen University, the Swiss Institute of Technology in Lausanne (EPFL), University of Paris 11 and Imperial College London.
He started to work on laser-plasma interactions during his bachelor's project on finite difference schemes for laser-pulse propagation in plasmas at RWTH Aachen. Thereafter he went to Lausanne where he specialized on high energy particle physics, while continuing to work on numerical schemes for plasma simulations at the Plasma Physics Research Center (CRPP). For his master's project he first joined the Plasma Physics Laboratory (LPGP) at Paris 11 and later the Plasma Physics Group at Imperial College London. His training also comprised participation in experiments at the Lund Laser Centre in Sweden and the Central Laser Facility at Rutherford Appleton Laboratory. In early 2012 he graduated at RWTH Aachen with an MSc on betatron radiation in laser-driven electron accelerators.
At CLPU Andreas is supervised by Camilo Ruiz and he will be responsible for research on electron acceleration. He will also continue to investigate femtosecond x-rays from laser-plasma accelerators and their applications, in which context he will be co-mentored by Kim Ta Phuoc from the Applied Optics Laboratory (LOA) in Paris. Beside these main objectives Andreas is interested in radiation physics for life sciences and as science ambassador he shares his passion for physics with the general public.

Researcher Prize 2013

The Researcher Prize is an annual award by LA³NET of €1,000 for the researcher judged to have made an important contribution to the field of laser application at accelerator facilities. The competition is open to all researchers in the first five years of their research careers both from within or outside of the network. For consideration, applicants should submit their entries for the 2013 prize before the 30th June 2013 deadline.

www.liv.ac.uk/la3net/news/...competition/

Innovation in Researcher Training: the Complementary Skills School

Ahead of the LA³NET Complementary Skills School coming up in March, an article has been published in the February edition of Liverpool University's Learning & Teaching newsletter. This describes the development of this training out of the DITANET project and subsequent wider adoption in the UK.
The success of the complementary skills workshop was shown by the positive feedback received from those undertaking the training. As a direct outcome of this, and the importance the University of Liverpool places on the development of complementary skills in postgraduate research training, the School of Physical Sciences adopted the format of this training to deliver to their postgraduate students. Now other UK universities are showing an interest in providing this method of training to their research students.
As LA³NET progresses other successful aspects of the DITANET project will be emulated such as the international conference organised towards the end of the project which gave all fellows the opportunity to present their research projects in oral contributions. The fellows were also invited to publish a summary of their research results within the project in a leading peer reviewed journal to disseminate their findings internationally and give them the best possible grounding for their follow-on careers.

educationaldevelopment.liverpool.ac.uk

Partner News

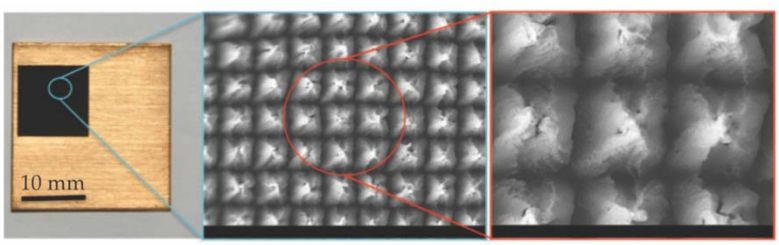
The new ELBE at HZDR: Quanta, Antiparticles, Neutrons, and more

The new ELBE (Electron Linac for beams with high Brilliance and low Emittance) at HZDR is to be inaugurated on 28th February 2013. ELBE is a center of high-power radiation sources with a superconducting electron linear accelerator as the heart of the modern research facility. This highly versatile research facility will enable scientists from around the world to carry out experiments using electrons, neutrons, positrons, or ultra-short light pulses in the invisible infrared as probes to explore matter or innovative materials. High-power lasers intended for particle wake field acceleration complement the unique facility. A further research project is focused on the development of compact accelerators based on high-power lasers for future application in cancer therapy.
www.hzdr.de/db/...

PhD student Michel Kuntzsch investigating the new terahertz source at ELBE, the high-power radiation facility of the HZDR (Photo HZDR/Frank Bierstedt)

UNIVERSITY OF DUNDEE - Improving the properties of copper

Professor Abdolvand and his colleagues from the University of Dundee have found that the properties of copper can be improved using lasers to blacken the surface. Intense nanosecond pulses of laser light were used to transform copper's characteristically lustrous surface to a deep, absorbent black. This allowed it to absorb more light and heat, increasing the range of uses for the metal.
Using industry-standard lasers, the pulses modified the surface's vertical structure through laser-induced melting and ablation. Achieving the effect depends on how the pulses are delivered. The researchers used a neodymium–doped yttrium orthovanadate laser, which emitted 12-ns pulses at a repetition rate of 30 kHz. When focused on the Cu surface, each pulse delivered 2.6 J/cm2 to a spot about 60 µm wide. Stepping the beam over the surface ensured that the modification took the form of discrete patches arranged in a closely spaced grid.



The treated copper surface

Under a microscope the modified surface resembles an upturned egg carton whose individual dimples have been pushed in. Of the various firing patterns tested, a square grid with a spatial period of 70 µm yielded the biggest change: reflectivity from the UV through to the red was reduced from 90% to 3% and in the near-IR from 80% to 30%. Several mechanisms can account for the absorption boost, including light-trapping in the microcavities between the pyramids. Adding strong thermal absorbance to Cu's already strong thermal conductance could find uses in devices that carry away radiant heat.

Previously it was thought that only much more expensive lasers (ultra-short pulsed lasers) could be used to make metals appear black, thereby making the process impractical for industrial use. Prof. Abdolvand said: "By making copper so much more light and heat-absorbent it means we can do so much more with it. Because copper is normally shiny it reflects most of the light back. Blackening it allows it to absorb light throughout a broad spectrum, making it far more effective. This technique for fabrication of black copper could find applications in broadband thermal radiation sources, solar energy absorbers, irradiative heat transfer devices, and thermophotovoltaics."

(G. Tang, A. C. Hourd, A. Abdolvand, *Appl. Phys. Lett.* 101, 231902, 2012.)

www.physicstoday.org

www.bbc.co.uk

Laser processing equipment at Dundee

CLPU – recent publication in Physical Review Letters

The researcher José Antonio Pérez-Hernández and CLPU's director, Luis Roso have published a paper in Physical Review Letters describing an alternative way of generating coherent x rays through the generation of harmonics which complements existing methods. This theoretical work could form the basis for future technological applications for creating compact sources of coherent radiation useful in biology and studying molecular-level activity.

The process is based on the effect of laser pulses on the electrons in atoms. When a laser pulse interacts with an atom it extracts some of its electrons and drags them over a short period of time. In this journey the electrons gain energy as they couple with the laser field. In this way, when the electrons recombine with the atom they emit the acquired energy as electromagnetic radiation (photons). By repeating this process twice in each period of laser oscillation (2.6 femtoseconds), the radiation is emitted at different frequencies compared to that of the original pulse. These are the harmonics.

CLPU CENTRO DE LÁSERES PULSADOS

Until recently it was thought that these recombined electrons could only emit energy up to the limit determined by the average energy acquired by coupling with the laser. This limit indicated what energies could be reached in vacuum-ultraviolet radiation or in soft x-rays. However, this theoretical work shows that with appropriate modification of the initial pulse before the interaction it may be possible that the electrons will recombine much more effectively. Consequently, the energy of the generated photons would be much higher (three or four times more) than that that would be obtained using an ordinary pulse and may reach energies greater than one keV. This would allow coherent X-rays to be generated using conventional lasers that emit pulses in the infrared range of wavelength 800 nm. This is the range of operation of the majority of the Ti:S laser systems and that are used at CLPU.
Although engineering this type of pulse is still a challenge, the first experimental results have already been achieved interacting beams on nanostructures or confining laser pulses in hollow metal fibres of internal radius in the region of hundreds of nm.
In summary, a laser field synthesized both spatially and temporally has been proven capable of generating coherent extreme ultraviolet photons beyond the carbon K edge. This is an energy region of high interest as it can be used to initiate inner-shell dynamics and study time-resolved intramolecular attosecond spectroscopy. In other words, this research opens up the possibility of producing extremely short pulses of high energy photos in the time range of the duration of oscillation of electrons, atoms and molecules. This will enable exploration at a sub-atomic level and the visualisation of both the structure of these particles and the dynamics of certain chemical reactions. To view the article go to the Physical Review Letters website:

prl.aps.org/abstract/PRL/v110/i5/e053001

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GANIL are one of the main organisers of the 16th International Conference on RF Superconductivity, SRF 2013, to take place on September 22-27, 2013 in Cité Internationale Universitaire, downtown Paris, France. GANIL are holding special tutorials in the run-up to the conference on September 19-21 in Caen. These are designed to provide an in-depth overview of SRF related subjects for scientists and engineers new to the field. It will also give the attendees a unique opportunity of visiting the GANIL accelerator facilities, especially the Spiral2 linac which will be under assembly at this time. For more details visit the conference website: http://www.srf2013.fr/

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Around this time the XVIIIth "Colloque GANIL" will also take place (September 23-27, 2013) in Port-en-Bessin (Normandy - France). Invited talks, oral and poster contributions will cover the following topics:

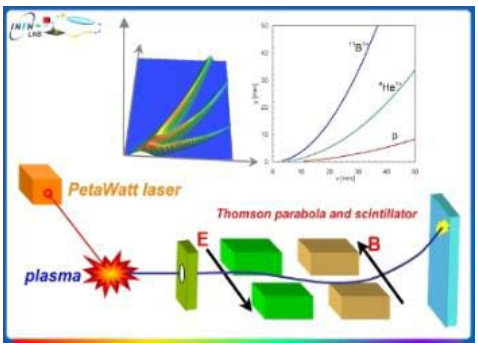
- Nuclear structure
- Reaction mechanism
- Nuclear astrophysics
- Weak interactions
- Interdisciplinary research

http://pro.ganil-spiral2.eu/events

LA³NET: the network continues to grow

New adjunct partners INFN LNS, Uppsala, PSI….and just in, the University of Sussex

Laboratori Nazionali del Sud (LNS) is one of the four national laboratories of the Instituto Nazionale di Fisica Nucleare (INFN) in Italy. Founded in 1976 it currently employs around 150 people (researchers, technicians, PhD and Diploma students) and represents an advanced development center for technology and instrumentation. The research activity is mainly devoted to the study of the structure and properties of atomic nuclei in collaboration with researchers coming from several countries.

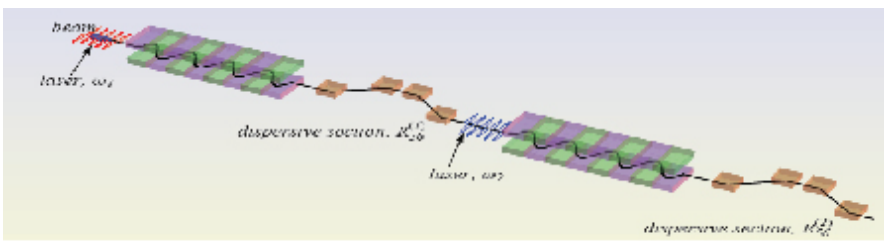


At LNS two particle accelerators are available: a 15MV Tandem Van De Graaff that started to be used for the first experiments in the early '80s, and a K800 Superconducting Cyclotron in full operation since 1996. The EXCYT facility for the production of exotic beams based on the coupled operation of these two accelerators is already running. Research and development of new apparatuses and technologies is typically applied in the fields of biophysics, photonics, plasma science, radioactive waste monitoring.

LNS also operates the CATANA center for the proton therapy of the eye-melanoma and a laboratory for the analysis of historical and archaeological heritage by means of non-destructive techniques. It is also worth mentioning a submarine laboratory installed at 2000m depth offshore from Catania, to be used for R&D related to the NEutrino Mediterranean Observatory project. At the moment LNS is also involved in research and development of particle accelerators and beam diagnostics as well as new acceleration techniques using high power lasers.

Uppsala University is the oldest university in the Nordic countries, with a living cultural environment and 40,000 students. World-class research and high quality education pursued here benefit society and business on a global level. The University is characterized by diversity and breadth, with international frontline research at nine faculties and limitless educational offerings at undergraduate and master levels.

The members of the Accelerator Physics Group participate in the realization of several large international projects ranging from the X-ray free electron laser X-FEL at DESY in Hamburg, seeding experiments at FLASH, various activities at CERN in Geneva such as the design and construction of the Two-beam Test-stand at CLIC test facility CTF3 and work at the European Spallation Source ESS in Lund, Sweden.



The Paul Scherrer Institute is the largest research centre for natural and engineering sciences in Switzerland with its research activities concentrated on three main subject areas: Matter and Material; Energy and the Environment and Health. The PSI develops, constructs and operates complex large-scale research facilities, such as the SINQ neutron source, the Swiss Light Source (SLS) and the SμS muon source. A hard x-ray free electron laser, named SwissFEL, is currently under construction and will go on-line in 2017. The SwissFEL laser group covers the competence in operating the different gun laser systems and develops advanced laser beam shaping schemes in the deep UV for the production of low-emittance electron beams. PSI furthermore develop laser-based sources providing intense radiation in the THz (0.1-10 THz) and soft x-ray spectral region (up to several hundred eV) and explore novel types of laser-driven electron sources based on multi-filamentary cathodes.

The University of Sussex is a leading research university with over 90 per cent of Sussex research activity rated as world leading, internationally excellent or internationally recognised. This places the University among the leading 30 research universities in the UK.
The Experimental Particle Physics (EPP) Research Group aims to answer some of the fundamental questions posed by modern physics, such as: What is the origin of mass? Why is there more matter than anti-matter in the Universe? What is the nature of the neutrino? Is there physics beyond the Standard Model? In attempting to answer these questions the EPP group has leading roles in a number of experiments: ATLAS at CERN's Large Hadron Collider; NOvA and MINOS+ that use the NuMI neutrino beam at Fermilab, USA; CryoEDM that is searching for the Electric Dipole Moment (EDM) of the neutron at ILL, Grenoble; SNO+ and DEAP that are located at SNOLAB, Canada. They also host a Grid Computing site.

Vacancies in the network

Two posts remain open in LA³NET hosted by STFC in the UK and IFIN-HH in Romania and applicants can apply via the web site:

http://www.liv.ac.uk/la3net/vacancies .

If you are able to publicise these vacancies at your organisation to generate the non-UK or non-Romanian candidates required by the Marie-Curie rules then please get in touch for more details. Successful applicants will work on one of the following projects:

Accelerator Timing Monitor with Femtosecond Precision.

STFC Daresbury National Laboratory and University of Manchester Photon Science Institute, UK
For further details or a flyer to advertise the position contact: steven.jamison@stfc.ac.uk

Development of a 3D neutron detector for complex geometries.

Institutul National pentru Fizica si Inginerie Nucleara Horia Hulubei, Romania
For further details please contact Florin Negoita: negoita@nipne.ro

UPCOMING LA^{3}NET EVENTS

Mid-Term Review meeting

The European Commission require that the project undergoes a Mid-Term Review involving the coordinator, the scientists in charge, the appointed fellows and the Research Executive Agency (REA) representative(s). At least one month in advance of the Mid-Term Review meeting the Coordinator will submit a progress report and at least two weeks before the fellows are required to complete a questionnaire.

The LA^{3}NET Mid-Term Review is scheduled for Monday 17th June 2013 in Copenhagen. This is the main point where the EC assess the progress of our network and very important for the project. The REA is in charge of setting the meeting agenda on behalf of the EC, and it is anticipated that they will meet all partners and fellows; a scientific overview of work to date will be presented together with a detailed plan for the remainder of the contract and an outline of all teaching and training activities. Management of the contract, financial and administrative issues and career plans for researchers will also be covered during the meeting. Finally, all fellows will have an opportunity to meet on their own with the REA. All reasonable costs will be covered (EU travel up to 300 € p.p.) for the fellows and one representative from each partner. Accommodation for the duration of the meeting will be booked for all participants.

The meeting will also be an excellent opportunity to see friends and collaboration partners from across the consortium again. It is planned that a formal dinner will be arranged for the evening of Sunday 16th June for all attendees. The Mid-Term Review will take place at the Teknologisk Institutt (TI) Danfysik site starting with a welcome from the CEO of TI on the Monday morning 17th June. Once the formal requirements of the MTR have been completed with the REA there will be a Supervisory Board meeting to address any remaining aspects of the project's progress.

Partner representatives will be free to leave from Monday evening. However, there will be a tour of the Danfysik facilities on the Tuesday morning 18th June for the fellows and all others will also be welcome to attend. This will be followed by an excursion to the Carlsberg brewery prior to departure later on in the afternoon and evening.

Joke Box

While crossing the road a snail was run over by a turtle.

On regaining consciousness he was asked what caused the accident.

'I really can't remember,' the snail replied. 'You see, it all happened so fast.'

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LA³NET Events	
March 18th-22nd	Complementary skills school, Liverpool, UK
Later in 2013 TBC	Laser technology & optics design training event , ILT, Germany
June 17th	Mid -term review meeting
Other Events	
April 15th-18th	9th DITANET Topical Workshop, CERN, Switzerland
April 15th-18th	SPIE Optics + Electronics Symposium, Prague, Czech Republic
May 12th-17th	IPAC 13, Shanghai, China
Sept 6th-19th	IBIC, Oxford, UK
Sept 23rd-27th	SRF2013, Paris, France
Sept 23rd-28th	18th Colloque GANIL, Port-en-Bessin, France

NOTICE BOARD

We are keen to publicise project activity and would like to hear of any dissemination carried out by partners. For instance, LA³NET feature in the latest edition of the 'UK news from CERN' bulletin. This publication highlights top research activity at CERN with UK links and the article 'Focusing lasers on a new generation of ideas' describes the project at a level that the general public and policy makers would understand. The article contains quotes from two fellows, Tom Day Goodacre and Alexandra Alexandrova, describing their experiences in the network. To view the article please follow the link to the latest issue of **UK news from CERN**.

www.stfc.ac.uk/resources

DEADLINE FOR THE NEXT NEWSLETTER
30th April 2013

About LA³NET

The exploitation of Lasers for Applications at Accelerator facilities for ion beam generation, acceleration and diagnostics is the goal of this new Network within the FP7 Marie Curie Initial Training Network (ITN) scheme. In this frame, research centres, universities and industry partners from across Europe will develop beyond-state-of-the-art techniques and technologies through a joint inter-sectorial training program for early stage researchers within a unique European partnership.

LA³NET is funded by the European Comission under
Grant Agreement Number 289191