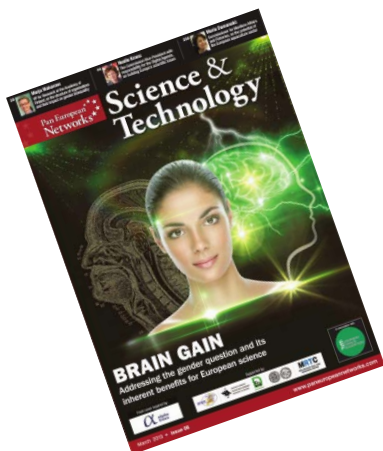


## Enhancing the training of the next generation of researchers

**Researcher training internationally has undergone considerable change over the past decade.** Whilst training through cutting edge research still forms the central element of any researcher training, many additional elements are nowadays included in the most advanced training schemes. oPAC aims at providing the best possible training to its fellows and this shall be realized through challenging R&D projects for each trainee, in combination with local and network-wide trainings.

The network benefits from the experience gained from previous national and international large scale training initiatives, in particular the [DITANET](#) project. Expert schools on most aspects of current accelerator R&D, focused Topical Workshops, as well as conferences, symposia and complementary skills trainings all form part of our holistic approach.

We continuously discuss our findings with the international community, in particular with our industry partners, and disseminate information about the *oPAC experience* internationally.



**Articles** in this month's [Pan European Networks](#): Science and Technology 6 (2013) about researcher training and accelerator optimization, in STFC's [UK news from CERN 17](#), as well as **oral contributions** to the Higher Education Academy's [Annual Learning and Teaching Conference](#) in Birmingham, UK are all examples of this ongoing dialogue.

I am delighted to announce that all invited speakers have now confirmed their attendance to the **oPAC International Workshop on the Grand Challenges in Accelerator Optimization**. This two day event will be held at the end of June at CERN. It will be open to participants from within and outside the oPAC consortium and will discuss the current and future R&D challenges in our field, ranging from beam physics and instrumentation development to simulation studies and light source design.

All participants will be given the opportunity to present posters about their work. Industry are particularly encouraged to participate and present their product lines to the accelerator community. There is no registration fee; coffee and biscuits will be on us !

**The number of places is limited and I would strongly recommend to register early – all details can be found [here](#). Be there or be square !**



Prof. Carsten P. Welsch, Coordinator

### Special Interest Articles

- Upcoming Events
- Partner News

### Individual Highlights

- Registration open: 1<sup>st</sup> Topical Workshop
- oPAC Fellows at JUAS 2013
- New to the Network

## Registration Open: 1<sup>st</sup> oPAC Topical Workshop on 'Grand Challenges in Accelerator Optimisation'

The 1<sup>st</sup> oPAC Topical Workshop 'Grand Challenges in Accelerator Optimisation' will be held on Wednesday 26<sup>th</sup> and Thursday 27<sup>th</sup> June 2013.



This two-day international event will provide an overview of the current state of the art in beam physics, numerical simulations and beam instrumentation and highlight existing limitations.

It will discuss research and development being undertaken around the world and ambitions to further improve the performance of existing and future facilities by joining research leaders with early stage researchers.

Plenary talks will be mixed with discussion and poster sessions and provide an ideal base for knowledge exchange and a discussion of current research, challenges and future development. Industry are particularly encouraged to participate and engage in cross-sector dialogues.



### Speakers include:

- *Dr. Bjarne Roger Nielsen, Danfysik*  
'Green and Compact Magnet Technology for Optimisation of Particle Accelerators'
- *Dr. Mats Lindroos, ESS*  
'Challenges of High Intensity Accelerators'
- *Dr. Daniel Ratner, SLAC*  
'Research on Ultra-short Timescales – FELs'
- *Prof. Luis Roso, CLPU*  
'Laser Acceleration – Towards Highest Gradients'
- *Dr. Richard Hawkings, CERN*  
'Unravelling the Secrets of the Universe'

In addition to invited talks, there will be industry displays and a special seminar covering recent LHC discoveries. All participants will have an opportunity to contribute a poster.

**Places are strictly limited so please register early to avoid disappointment.**

Registration and further information can be found here:

**This event is open to all and free of charge. Deadline for registration is 15<sup>th</sup> May 2013.**

[indico.cern.ch/...confId=243336](http://indico.cern.ch/...confId=243336)

## New to the Network

**The Network has now recruited 21 of the 22 Fellows advertised.** The latest to take up their contracts are Michele Carla at ALBA, Spain; Daria Astapovych and Miguel Fernandes both at CERN, Switzerland; Martina Sofranac at CST, Germany; Xiangcheng Chen at GSI, Germany and Xavier Nuel Gavaldà at Synchrotron SOLEIL, France.

**Michele Carla** is from Firenze, Italy where he studied Physics at the Università degli studi di Firenze.

As an undergraduate in Physics, he worked on the MU-RAY experiment. The MU-RAY project aims at the construction of muon telescopes and the development of new analysis tools for muon radiography. His work in this project consisted of building and characterising the resolution of a prototype of a scintillator odoscope. Michele obtained his Bachelor's degree in June of 2009.

Following this, Michele continued studying for a Master's in Physical Science with specialisation in High Energy Physics. This

**Daria Astapovych** was born in Sumy, Ukraine in May 1990 and gained her diploma in Physics at the Sumy State Pedagogical University. She obtained a Bachelor's degree in Physics as a teacher during which she undertook pedagogical practice in schools as a teacher of physics and mathematics within the course 'General Physics / Electromagnetism'.

In May 2012 Daria obtained a Master's degree in Physics as a Physicist-Researcher and Tutor. She decided to focus on a computer simulation for beam dynamics, specifically in the electron cooling process

time he worked in the SwissFEL experiment at the PSI. As part of this project he spent 6 months at PSI in 2012 to work on the development of his thesis. His work in this project consisted in a systematic study of the Echo Enabled Harmonic Generation seeding scheme for the Athos beam-line for the SwissFEL Free-Electron Laser.

Currently Michele is employed at ALBA where his research will focus on characterising the machine as well as study other possible upgrades to ALBA.



using BETACOOOL. During study for her Master's in High Energy Physics, Daria worked at the Institute of Applied Physics of the National Academy of Science of Ukraine.

Now Daria is a Marie Curie Fellow within the OPAC project. Her research will focus on coherent beam stability for the HL-LHC project at CERN, studying in particular the effect of the longitudinal degree of freedom on the transverse Landau damping.





**Miguel Fernandes** was born in Porto, Portugal and has lived in the region of Lisbon since a child. There, he obtained the diploma in Electrical Engineering and Computer Science from Instituto Superior Técnico at the Universidade Técnica de Lisboa, specialising in control and electronic systems. After obtaining his degree, Miguel joined the telecommunication industry reference company Nokia Siemens Networks, where he stayed for 3 years.

Miguel then went to continue his studies at Instituto Superior Técnico and enrolled in a Physics Master's degree. After finalising his Master's degree Miguel worked as a research fellow at LIP - Laboratório de Instrumentação e física experimental de Partículas, in Lisbon, under the CMS project which is one of the

two general purposes from the LHC experiments at CERN. There, he participated in a physics analysis for the search of beyond standard model super-symmetric stop particle.

From January 2013 Miguel is a Marie Curie Fellow under the oPAC project. His research will be conducted in the area of beam instrumentation, where he will be studying the application of hT-SQUID to superconductor beam current monitor. This work includes designing, implementing and measuring the performance of this system.



**Martina Sofranac** was born in Titograd, SFR Yugoslavia in 1984. In 2003 she obtained her Bachelor's at the Faculty of Electrical Engineering, University of Montenegro, graduating in 2007 as the student with the best average grade in her generation. Following this she was an intern at the Research Centre Dinamia which is part of ISCTE University in Lisbon.

From 2008-2010 she was the holder of an Erasmus Mundus Category A scholarship from the European Commission. As part of her Master's studies in 'Mathematical Modelling in Engineering: Theory, Numerics, and Applications' she studied at three Universities: University of L'Aquila in Italy, University of Nice-Sophia Antipolis in France and Gdansk University of Technology in Poland.

Martina took up an internship during 2009 at Orange R&D Lab for Antennas in La Turbie. The project was on Inverse Computational Electro-magnetics Problem.

The scope of her Master's thesis was

numerical solving of Coupled Nonlinear Schrödinger Equations with Periodic Boundary Condition. The goal was to simulate soliton collisions in Kerr medium. She defended her thesis in July 2010, at the Faculty of Applied Mathematics and Engineering Physics, Gdansk University of Technology.

After graduating Martina worked for two years as implementer and developer in a software company in Montenegro. Currently Martina is a Marie Curie Fellow at CST – Computer Simulation Technologies AG within the oPAC project. She is enrolled as a PhD student at the Technical University of Darmstadt. Her research will focus on the development of a GPU based Particle in Cell Solver.



**Xiangcheng Chen** was born in Chaohu, China in 1989. He lived in his hometown until 2006 when he attended the University of Science and Technology of China (USTC). In his 3<sup>rd</sup> year, Xiangcheng took High Energy Physics (HEP) as his specialty. He focused on analysing decay data of  $J/\psi$  produced in BESIII in Peking, and successfully defended his Bachelor's thesis in 2010.

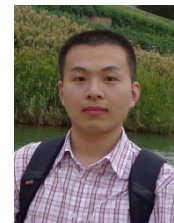
In 2010, Xiangcheng joined the Chinese Academy of Sciences (CAS) as a graduate student for a year after which he moved to Peking's Institute of Modern Physics (IMP), located in Lanzhou, to continue his PhD programme. Since IMP is the centre for heavy ion research in China, he chose lifetime measurements of exotic nuclides with a storage ring as his main study area.

**Xavier Nuel Gavaldà** has a degree in Physics from the University of Barcelona. In October 2011 Xavier started his Master's degree in Synchrotron Radiation and Particle Accelerator at the Autonomous University of Barcelona

In January of 2012 Xavier joined the ALBA Beam Dynamics section to work on the final thesis of his Master's organised by and the Autonomous University of Barcelona and laboratory CELLS. Xavier's thesis is dedicated to the linear and non-linear optics model of the ALBA gradient dipoles and consists of a comparison between the different dipole models based both on the magnetic measurements and on the orbit response matrix. For this thesis work Xavier used the accelerator codes Accelerator Toolbox (AT) for Matlab and MAD-X. The results of the beam dynamics calculations are compared

During 2011 to 2012, Xiangcheng participated in two experiments conducted with HIRFL-CSR complex in IMP. The first one was mass measurements of  $^{86}\text{Kr}$  fragments, which gave him basic training on experimental nuclear physics. By the time of the second experiment, he was already in charge of lifetime measurements of  $^{112}\text{Sn}$  fragments using Schottky pick-up.

Currently Xiangcheng is enrolled as a PhD candidate at GSI in the framework of the oPAC project. The main purpose of his research is the "design and development of resonant structures as Schottky noise detectors for various frequencies".



with data of the machine using a hard-edge model approach for the combined dipole. Xavier joined oPAC as a Marie Curie Fellow in December 2012 and is based at Soleil Synchrotron Light Source, France. The project is entitled "Improvement of the understanding of non-linear beam dynamics effects in light sources" and is based in optimising linear and non-linear beam dynamics of circular accelerators developing simulation codes based on genetic algorithms in order to explore all possible optical settings available for the current accelerator lattice. The second part of this work will explore new challenging optics for reducing the effective horizontal emittance of Soleil. Xavier's project is the object of a PhD thesis in Paris-Sud University, France.



## oPAC fellows at JUAS 2013

Several Marie Curie oPAC fellows attended a five week Joint Universities Accelerator School (JUAS) course 'Sciences and Physics of Particle Accelerators', in Archamps, France. JUAS is organised every year by European Scientific Institute with the support of CERN Accelerator School and 14 major European Universities. The structure and content of this intense training programme has been proposed and taught by Europe's accelerator

specialists as the programme is designed to meet the Europe-wide demand for a foundation course on accelerator physics and associated technologies. The training included 100 hours of lectures, tutorials seminars and workshops followed by the subsequent written test of the examination. The programme is completed by visits to several laboratories and a practical work day at CERN.



*Participants at JUAS 2013*

In addition all oPAC fellows attending took time off from their studies for a dinner in Geneva's Fondue Yurt. Taking advantage of the proximity of the JUAS site to CERN, the meeting allowed oPAC fellows to meet with other members of the network based at CERN, as well as to share the experience of former Marie Curie fellows.



*Left to right: Adam, Meghan, Martina, Sophie, Xavi, Miguel, Marcin, Emilia. Behind the lens: Sehar*

The fellows described this course as energising, enthralling, a gateway to new horizons and an effective blend of theory and practice. The training also provided an opportunity to interact with the young and budding scientists and researchers from

around the world and to discuss the cutting-edge developments and future trends in the field of accelerator sciences which in turn enriched their perspectives about the impending research and technology.

## Partner News

### Instrumentation Technologies Announce the 9<sup>th</sup> Libera Workshop 2013

The 9<sup>th</sup> Libera Workshop, will take place on 25 April 2013 in Šmartno, one of the best-preserved medieval villages in Slovenia. This Workshop is an opportunity to network with experts from the accelerator field and to explore how to optimise beam stability from injection to the end-station. Participants will learn about the use of Libera instruments at different accelerators around the world, and obtain practical experience as well as intensive training. The workshop will focus on applications that use the Libera family of instruments—state-of-the-art instrumentation systems used for diagnostics and beam stabilisation at particle accelerators.

This year, Instrumentation Technologies is celebrating two important milestones: the 15<sup>th</sup> anniversary of the company's founding and the 10<sup>th</sup> anniversary of the launch of Libera. This will add a very special spirit to the workshop, marking these significant events in our company's history. [Registration](#) is now open. For any further information, please contact [Ms. Breda Kolmanič](#).



**Libera**  
WORKSHOP 2013

### Adjunct Partners CMAM: Centro de Micro-Analisis de Materiales - Celebrates its 10<sup>th</sup> anniversary

To celebrate the tenth anniversary of the Centro de Micro-Analisis de Materiales (CMAM) inauguration, which took place on 23<sup>rd</sup> March 23 2003, the Universidad Autonoma de Madrid (UAM) and the Centre organized a two-day celebratory event on 11<sup>th</sup> and 12<sup>th</sup> March 2013. The Rector of the UAM, Prof. José Maria Sanz Martinez chaired the official celebration ceremony during which the first CMAM director, Prof.

Fernando Agulló López, the first CMAM director was a special guest. On 12<sup>th</sup> March the CMAM former director, Prof. Aurelio Climent Font chaired a scientific day where, together with the CMAM scientific advisory committee, the major achievements of the past ten years were reviewed by members and collaborators.





## University of Sussex joins the consortium

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

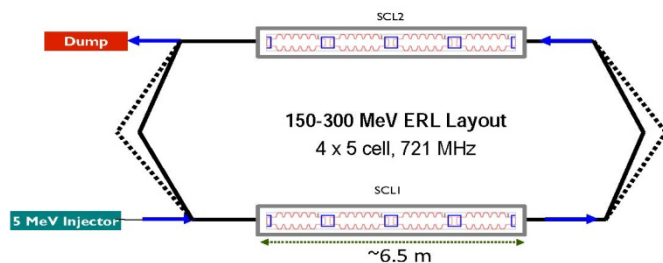
neutrino? Is there physics beyond the Standard Model? In attempting to answer these questions the EPP group has leading roles in a number of experiments: ATLAS at CERN's Large Hadron Collider; NOvA and MINOS+ that use the NuMI neutrino beam at Fermilab, USA; CryoEDM that is searching for the Electric 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.

## Daresbury meeting drafts roadmap for LHeC ERL test facility with support from oPAC – Frank Zimmermann, CERN



A few months ago, in 2012, the [conceptual design for a Large Hadron electron Collider \(LHeC\)](#) was published (in *J. Phys. G: Nucl. Part. Phys.* **39** 075001) after a careful review. The proposed LHeC consists of an energy-recovery linac (ERL) accelerating electrons to collide with the protons (or ions) circulating in

the LHC, with a luminosity of at least  $10^{33} \text{ cm}^{-2}\text{s}^{-1}$ , and possibly in excess of  $10^{34} \text{ cm}^{-2}\text{s}^{-1}$ . LHeC will not only be the world's cleanest microscope, but also a Higgs factory, allowing high-precision studies of critical Higgs properties.

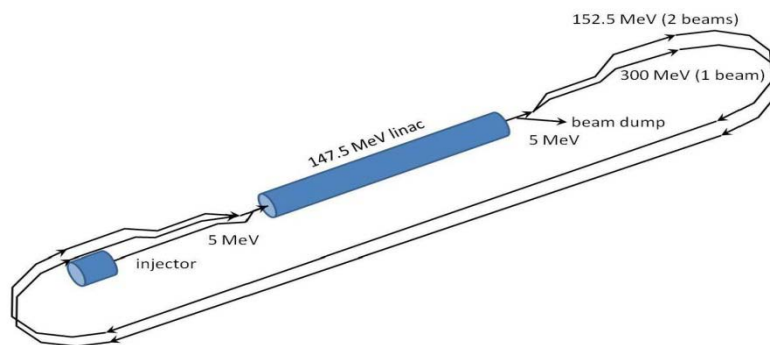


Original sketch of LHeC ERL test facility (Rama Calaga, CERN)

Plans for constructing an LHeC ERL test facility at the European Organization for Nuclear Research (CERN) have made a big step forward at a dedicated meeting of experts from Brookhaven National Laboratory (BNL), CERN, Thomas Jefferson National Accelerator Facility (TJNAF, or short JLAB), and Daresbury Lab (STFC), held at the UK's Cockcroft Institute on 22 and 23 January 2013, which was jointly organized by Max Klein (U. Liverpool), Oliver Brüning (CERN), Erk Jensen (CERN), and Deepa Angal-Kalinin (STFC & Cockcroft Institute). The JLAB team included

Alex Bogacz, David Douglas, Matt Poelker, and Robert Rimmer. BNL was represented by Ilan Ben-Zvi. The group from CERN comprised RF experts, accelerator physicists, and in particular oPAC fellow Alessandra Valloni, whose oPAC work will be devoted to the design of the test facility. The local Daresbury participants profited from their expertise with STFC's ALICE machine – the only operating ERL in Europe –, a tour of which, together with other STFC facilities, was the final high point of the workshop.





Alternative layout of LHeC ERL test facility (David Douglas/TJNAF)

The main goals of the Daresbury meeting were discussing the choice of the LHeC linac frequency – considering beam dynamics, performance, cost and risk – gathering pertinent experience from US and UK ERL facilities, and reinforcing future ERL collaborations. While a frequency choice of either 720 MHz or 1.3 GHz had been expected, at the start of the workshop CERN’s RF group leader Erk Jensen surprised his audience by proposing a third frequency, 800 MHz (!), which soon found an enthusiastic

reception. Among the advantages of 800 MHz are synergies with existing and planned CERN RF systems for the SPS and LHC at exactly the same frequency as well as the potential to operate with higher beam current than with a 1.3 GHz system. JLAB colleagues attested to the soundness of the LHeC ERL beam parameters, and reported from their substantial ERL experience, e.g. with longitudinal matching, space-charge effects, beam halo, and RF transients.



Participants at LHeC ERL test-facility meeting, Cockcroft Institute, Daresbury

Among the other important results of the workshop, oPAC fellow Alessandra Valloni arranged for future participation in commissioning and operation of the ERL facilities at JLAB, BNL and CI; and JLAB’s David Douglas proposed an alternative layout for the CERN facility.

The next major LHeC workshop, again with oPAC involvement, is planned for early October 2013



## Product announcement ViALUX

The DLP® V-Modules of [ViALUX](#) are based on the DLP® Discovery™4100 platform and represent the highest performance class of DLP® catalogue products available. DLP® V-Modules offer unique flexibility in mirror control enabling a wide variety of new emerging applications. Outstanding pattern frequencies of 22 727 global array updates per second are achieved taking advantage of the 50 Gbit/s bandwidth of the DLP® Discovery™ chipset. The usable spectral range covers all wavelengths from 350 nm UVA to 2 500 nm NIR. The „A-Type“ DMD package has efficient cooling options enabling up to 60 W sustained optical power transfer per DMD.

All DLP® V-Modules enable a rapid launch into DLP® application development. The DLP® controller boards come with completely configured high speed FPGA logic and USB controller firmware so that customers save time and costs for a dedicated hardware and firmware development. DLP® V-Modules are well suited for education, academic research, proof of concept, and also as OEM components for series production.

The high-performance Discovery™4100 chipset of the DLP® V-Modules is driven by the DLP® Controller Suite ALP-4. The ViALUX proprietary FPGA design is the core of the well proven ALP-4 firmware and software. The industrial grade USB 2.0 device driver for all current Microsoft® Windows® operating systems guarantees smooth integration with any type of PC. Multiple V-Modules can be controlled from one computer simultaneously. The USB 2.0 transfer is speeded up by lossless compression achieving effective PC transfer rates of up to 1.2 Gbit/s. The DLP® V-Module software API, a DLL library, fits seamlessly into standard programming platforms like C++, .NET, LabVIEW, MATLAB.

Three DLP® V-Modules are available and two windows can be selected for use with visible or ultra-violet light.

- V-7000** with 0.7“ XGA DMD for visible or ultra-violet light
- V-9500** with 0.95“ 1080p DMD for visible or ultra-violet light
- V-9600** with 0.96“ WUXGA DMD for visible light only

Two different PCBs are used covering the three DMD formats: V4100 and VX4100. The VX4100 Board supports the largest DMDs with 0.95“ and 0.96“ diagonal array size, re-spectively. The control and data lines for the 2xLVDS DMD are put into two flexible cables of 5“ or 12“ length giving a high degree of freedom for the optical arrangement.

### V-Module Specifications

DLP® Chipset Family	Discovery™ 4100	Discovery™ 4100
DMD Type	0.95“ 1080p 2xLVDS	0.96“ WUXGA 2xLVDS
Window Options	VIS, UV	VIS
DMD Micro Mirror Array	1920 x 1080	1920 x 1200
Micro Mirror Pitch	10.8 µm	10.8 µm
Active Mirror Array Area	20.7 x 11.7 mm²	20.7 x 13.0 mm²
DLP® Board Type	VX4100	VX4100
Control Board Dimensions	191 x 99 mm²	191 x 99 mm²
DMD Board Dimensions	102 x 83 mm²	102 x 83 mm²
Flexible Cable Length	127/305 mm	127/305 mm
RAM Capacity on Board	32 Gbit	32 Gbit
Binary Patterns on Board	15 534	13 981
Hardware Trigger	master / slave	master / slave
DLP® Controller Suite	ALP-4.1	ALP-4.1
Array Switching Rate 1bit B/W	10 752 Hz	9 708 Hz
Array Switching Rate 6bit Gray	848 Hz	826 Hz
Array Switching Rate 8bit Gray	254 Hz	252 Hz
PC Interface	USB2.0*	USB2.0*
PC Transfer Rate	130 ...510** fps	120 ...460** fps

## oPAC Fellow Sehar Naveed ties the knot

Recently appointed oPAC Marie Curie fellow Sehar Naveed tied the wedding knot at a grand wedding ceremony which was held in her home town Depalpur, Pakistan. The ceremony was well attended by a large number of guests including close relatives and friends.

The celebration started with the Henna Ceremony which took place two days prior to the main wedding day where the groom's

friends and family brought along sweets and applied henna on the bride's hands. The official ceremony began with the solemnisation of Nikkah (Islamic marriage contract) on March 2<sup>nd</sup> followed by the traditional Pakistani wedding customs. The reception, hosted by groom's parents, took place in a luxury marriage hall on the next day after the wedding.

**Congratulations !**



## oPAC Future Events

### Mid-Term Review Meeting: 14<sup>th</sup> October 2013, Barcelona

**The project is charged by the European Commission (EC) to hold a Mid-Term review meeting.** This meeting is attended by representatives from all Partner institutions (beneficiaries), appointed Fellows, and representatives from the Research Executive Agency (REA). In addition, our Associate and Adjunct Partners are encouraged to attend.

The coordinators of the project are required to submit a Progress Report in advance of this meeting and all appointed Fellows complete an on-line EC questionnaire.

The project's Mid-Term Review has now been set for Monday 14<sup>th</sup> October 2013 at Residence for Researchers, C/Hospital 64, 08001 Barcelona, Spain.

During the meeting the REA will meet all Partners and Fellows who will present a scientific overview of work to date, a 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.

Our partners ALBA have been very helpful in assisting with the organisation of this event and have kindly offered a tour of their facility on Tuesday 15<sup>th</sup> October which will be open to all attending the event. Full details of the arrangements will be circulated shortly but for those involved **please keep the dates clear in your diaries.**



### IBIC 2013



**The second International Beam Instrumentation Conference (IBIC) will be held in Oxford, United Kingdom between September 16<sup>th</sup>-19<sup>th</sup> 2013.** The programme of talks, tutorials and discussion groups will be designed to explore the physics and engineering developments and challenges of beam diagnostics and instrumentation for charged particle accelerators worldwide.

The program will consist of invited and contributed talks, poster sessions and industry displays throughout the week. A public lecture on the first day and a tour of Diamond Light Source, the neutron source ISIS and the Central Laser Facility will complement the program.

IBIC will take place at the University of Oxford's Saïd Business School.

There will be a dedicated EU projects stand, hosted by the EU T.E.A.M. from the Cockcroft Institute/University of Liverpool, which will summarize the achievements to date of the DITANET, LA<sup>3</sup>NET and oPAC Research and Training Networks. **We hope to see you on this occasion !**

Registration and further details can be found at: [ibic2013.org](http://ibic2013.org)

## Further upcoming Events

### DITANET Topical Workshop at CERN:

#### Non-Invasive Beam Size Measurement for High Brightness Proton and Heavy Ion Accelerator

CERN are to host a 3 day workshop on **Non-Invasive Beam Size Measurement for High Brightness Proton and Heavy Ion Accelerators on April 15<sup>th</sup>-18<sup>th</sup> 2013**. The workshop is sponsored by DITANET with the main aim to prepare non-invasive transverse beam size monitors in the LHC and its injector chain to fulfil the future emittance measurement requirements for LHC beams. This will be focused on improvements to existing systems for implementation during the long CERN shutdown in 2013-2014 and on concepts that could be foreseen for installation during the second long shutdown in 2018.

The 3 day workshop will be followed by a full day review of a new fast wire scanner in development at CERN. This will act as a final check on all aspects of the design prior to launching the production of a prototype unit for installation in the CERN-SPS in 2014. Participants are invited to stay on to attend this review if they so wish.

For more details and to register go to: [indico.cern.ch/...confId=229959](http://indico.cern.ch/...confId=229959)

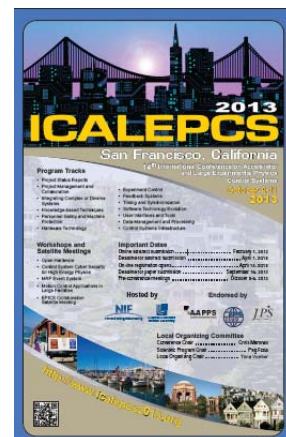


### ICALEPCS 2013

The 14<sup>th</sup> International Conference on Accelerator and Large Experimental Physics Control Systems (ICALEPCS 2013) is scheduled for October 6<sup>th</sup> - 11<sup>th</sup>, 2013 in San Francisco, California (USA) and is hosted by the National Ignition Facility at the [Lawrence Livermore National Laboratory](http://www.llnl.gov). Managers, scientists, engineers and decision makers of preeminent world-class science laboratories and facilities will discuss big-science control and information systems. Abstract submission is now open for ICALEPCS2013. Instructions on how to submit your abstract can be found on the conference website via [icalepcs2013.org](http://icalepcs2013.org). You are kindly invited to submit your abstract before 1<sup>st</sup> April 2013.

[ICALEPCS](http://www.icalepcs.org) is a series of biennial conferences that rotates between three major areas of the world: America (including North, Central and South America), Asia (including Oceania) and Europe (including Russia, the Near East and Africa) and is well established as the largest conference dedicated to control systems for accelerators and large experiments in physics.

The high standard that has been reached by the conference is widely recognized. The conference series is endorsed by the European Physics Society/Experimental Physics Control Systems (EPS/EPCS); the Physical Society of Japan (JPS); and the Association of Asia Pacific Physical Societies (AAPPS).



### Publications

A very interesting article, highlighted as 'editor's choice', has recently been published by former DITANET fellow Rahul Singh and colleagues in Phys. Rev. STAB:

**'Interpretation of transverse tune spectra in a heavy-ion synchrotron at high intensities'**,

R. Singh, et al., Phys. Rev. ST Accel. Beams 16, 034201 (2013)

<http://link.aps.org/doi/10.1103/PhysRevSTAB.16.034201>

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[www.opac-project.eu](http://www.opac-project.eu)

### oPAC Events

June 3 <sup>rd</sup> – 7 <sup>th</sup>	oPAC Researcher Skills School, Liverpool, UK
June 24 <sup>th</sup> – 25 <sup>th</sup>	oPAC Fellows - Expert training courses , CERN "Particle Studio" (CST) and "Beam Instrumentation " (Bergoz)
June 26 <sup>th</sup> – 27 <sup>th</sup>	oPAC Topical Workshop "Grand Challenges in Accelerator Optimization"
June 27 <sup>th</sup>	Meeting of the oPAC Steering Committee CERN, Switzerland
June 28 <sup>th</sup>	Meeting of the oPAC Supervisory Board, CERN, Switzerland
October 14 <sup>th</sup> –15 <sup>th</sup>	oPAC Mid-Term Review, Barcelona, Spain

### other Events

April 25 <sup>th</sup>	9 <sup>th</sup> Libera Workshop, Šmartno, Slovenia
May 13 <sup>th</sup> – 17 <sup>th</sup>	International Particle Accelerator Conference Shanghai, China
June 2 <sup>nd</sup> – 8 <sup>th</sup>	European Advanced Accelerator Concepts Workshop Elba, Italy
September 16 <sup>th</sup> -19 <sup>th</sup>	International Beam Instrumentation Conference Oxford, UK
October 6 <sup>th</sup> – 11 <sup>th</sup>	ICALEPCS 2013, San Francisco, USA

## About oPAC

The optimization of the performance of any Particle ACcelerator (oPAC) is the goal of this new network within the FP7 Marie Curie Initial Training Network (ITN) scheme. oPAC aims at developing long term collaboration and links between the involved teams across sectors and disciplinary boundaries and to thus help defining improved research and training standards.

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