

<< novel <u>DI</u>agnostic <u>T</u>echniques for future particle <u>A</u>ccelerators: A Marie Curie Initial Training <u>NET</u>work >>

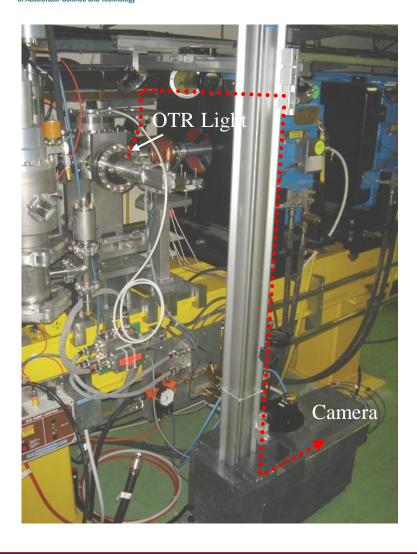
Carsten P. Welsch Coordinator, U Liverpool







A "typical" Accelerator Diagnostics



- Material sciences
- Thermodynamics
- Electro-Magnetism
- Optics
- Mechanics
- Electronics
- Nuclear Physics

Multi-disciplinary field !



The Cockcroft Institute





What is DITANET ?

- Largest-ever EU funded training network in beam instrumentation and diagnostics;
- Aim: Training of early stage researchers (18 ESRs, 3 ERs)
- Gives industry an important role;
- Presently 31 partners (and growing...)
- Recognized importance of beam diagnostics at European level !

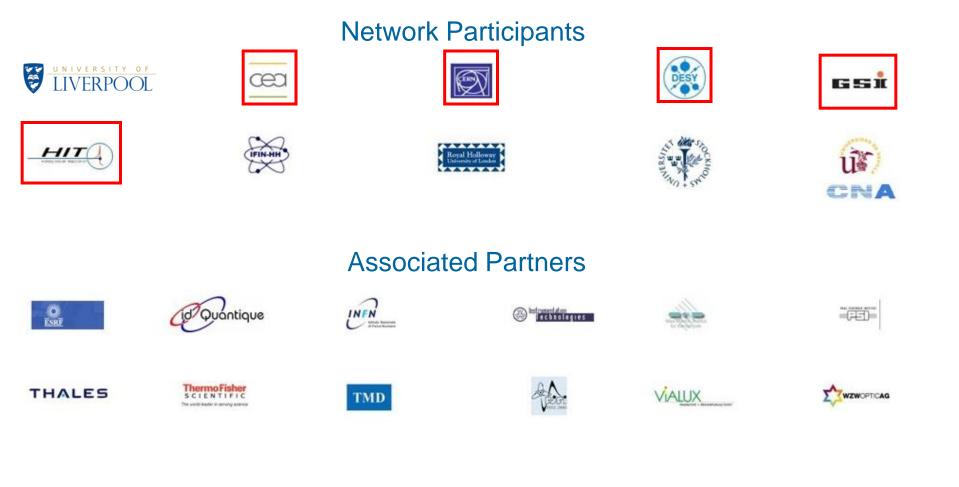
(only 68 from 905 selected - with 11 in physics)

C.P. Welsch, Proc. BIW 2010, IPAC 2011





The DITANET Consortium









NIVERSITY OF

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Adjunct Partners

Part of a long term strategy – DITANET is growing







Dissemination: DITANET Website

UNIVERSITY OF LIVERPOOL

DITANET

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DITANET home

Network structure Projects Vacancies Documents News Events Beam Instrumentation Booklet Administration Downloads Links

DITANET

The development of novel Diagnostic Techniques for future particle Accelerators is the goal of a new European Network (DITANET) that was installed within the Marie Curie ITN scheme.



University: Home | A-Z Index | Staff | Students

Website Courses

Without an adequate set of beam instrumentation,

SEARCH

it is impossible to operate
 a particle accelerator - let
 alone optimize its
 performance.

News

The DITANET School on complementary skills took place at the University of Liverpool (UK) 15th-19th March 2010. Further information.

DITANET Prize - Winner 2010

Partners Area and DITANET Blog: Login to VOCAL In this frame, several major research centers, leading Universities, and partners from industry will develop beyond-state-of-the-art diagnostic techniques for future accelerator facilities and jointly train students and young researchers within a unique European structure.





www.liv.ac.uk/ditanet







Quarterly Newsletter

- Part of the dissemination strategy
- Contribution from all network partners
- Announcement and review of activities
- > 600 recipients, growing
 - Registration by Email.

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NEWSLETTER October 2009 Issue 1	ÐI	'TANE'	T to the second		
Special Interest News: - Announcement - Announcement DTANET Price - Recent Publications	DITANETI Beam diagnostics terms are assential source of any pro- the properties of a 1 and how it behaves machine. Without an propriate set of diagn elements, it would s be impossible to op any accelerator cor let alone optimise its formance. Beam	in a The Marie Curie Initial nap Training Network toostic DITANET – "Disgnostic imply Iechniques for particle erate Accelerators - a european mplex NETwork' is the largest- per - ever EU funded education diag- action for PhD students	ised international meet- ings and schools. The network aims at strength- ening the existing links in sommunity and at building up new long-term partner- ships. With this newsletter, the network would ask yothing and share with you cur		
Individual Highlights Recent Events 2 Forthcorring Events 3 New to the Network 4 Publications & Notice Board 7	in which a great varie physical effects are in use of, and conseque provides a wide and base for the trainin young researchers. I over, the principles are used in any the monitor or detector readily into industria plications or the me sector, which guarant	field and young Postboos in rev made accelerators with a project accelerators with a project socient of the socient of the socient socient of the socient of the socient socient of the socient of the socient of the socient of the socient of the socient of the socient of the so	DITANET gives us a unique chance to further improve the performance of our research infrastruc- tures: to push instaumen-	FANE	₽ ^{×**} *
	agnostic Techniques. It will award a 1,0 cash prize for an standing contributio	nces mentation for particle ac- m Di- celerators by a researcher in the first five years of 00 € his/her pmfressional ca-	and full information on show by apply can be found on the DITANET website:	ment of the longitudinal beam profile. For an in- strumentation expert it is always a reward to meas- ure beam properties for the first time with a new	the world in its first topics workshop on low energy low intensity beam diag nostics, DITANET follow its goal of encouragin knowledge exchange be tween partners and drivin new developments. 2010 promises to be an
		Individual Highlights Forthcoming Senth 3 Nenro the Network 6 Publications & Netice Board 8	developments in beam in- strumentation. This re- quires close collaboration between partners, the ex- ploitation of synergies	Besides its contributions to optimizing existing par- ticle accelerators, the network is also involved in central developments for future facilities, such as the Facility for Antiproton and Ion Research (FAIR) in Germany. By bringing together early	our community with man interesting events such a the BIW and IPAC in May DITANET will organize number of training event and I would like to use thi opportunity to encourag you checking our we page on a regular basis.
			Applications are still open for the Network's first Prize in Beam Diagnostic Techniques. A 1,000 euros cash prize is awarded for an out-	09: Applications si the field of beam instru- mentation for particle ac- oeterators by a researcher in the first five years of his/her professional ca- reer. The deadline for applica-	till open tions is 31 st January 201 and full information of how to apply can be four on the DTANET website www.liv.ac.uk/ditanet





Community Events 2011



Diagnostics **School** Stockholm, Sweden – March Indico: 112220 > 80 participants and lecturers



Topical Workshops *CI, France, Slovenia, Seville, Hamburg Indico: 145063, 145066, 145070, 135829, 154172* ~ 40 participants each



NIVERSITY

Diagnostics **Conference** Seville, Spain – CNA Indico: 135831 Proceedings + PRST-AB special edition







DITANET Topical Workshops

- Low energy, low intensity beam diagnostics (GSI, HIT)
- Longitudinal beam profile measurements (CI)
- Ultra cold electron beam diagnostics (CI)
- High intensity proton beam diagnostics (CEA)
- Technology transfer (i-tech)
- Detector technology (CNA)
- Beam loss monitoring (DESY)
- Beam position monitoring (CERN)

Full information: Homepage and CERN indico.

Symposium on beam diagnostics: May 16th @ CI.





Carsten P. Welsch – 8th DITANET Topical Workshop, CERN, Jan 2012



The Cockcroft Institute

- Laser Applications for Accelerators – A Marie Curie Network
 - 17 ESRs
 - 23 Partner
 Institutions

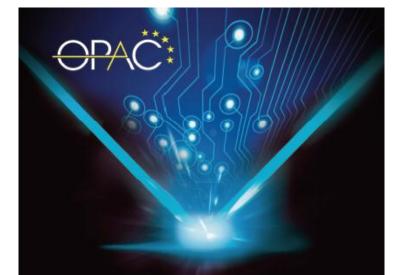
– 4.6 M€ L & NET

www.liv.ac.uk/la3net





And oPAC - 1.12.2011



OPEN POSITIONS WITHIN THE OPAC PROJECT

The optimization of the performance of any particle accelerator or thirsolity depends on an in-depth understanding of the beam dynamics in the maximum and the availability of atmulation tools to study and confinuously improve all accelerator components. It also requires a compaise set of beam diagonotibs methods to monitor all important monitors and beam parameters with high presision and a powerful control and data acquisition system. Within the OPAC project these sepects will be closely linked with the elin to optimize the performance of present and future accelerators that lie at the heast of many research infrastructures.

The network is currently siming to recruit a pool of biented, seergetic, strongly modivalised, early alogs researchers with a degree in physics, electrical engineering or a closely related field. Prossibilities for enrolling into a PhD program ediat. Women are especially encouraged

Deadline for application

Such researcher will benefit from a vice rearing training program that vill take advantage of both local and network-wick activities, as well as of exhools, conferences, and vorisihops. Eccellent salaries will e offered. Most positions are for harding in surrener 2012.

You will find more information about oPAC, all research projects and the application details at

Contact and further detail:

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Optimization of Particle <u>Ac</u>celerators

- 22 ESRs
- 22 Partner Institutions

- 6 M€



www.liv.ac.uk/opac





VIVERPOOL



- Employed ~20 DITANET Fellows
- Many events for the whole community
- Aim: Improved training standards
- New initiatives based on DITANET experience







