

WELCOME !

Prof. Carsten P. Welsch



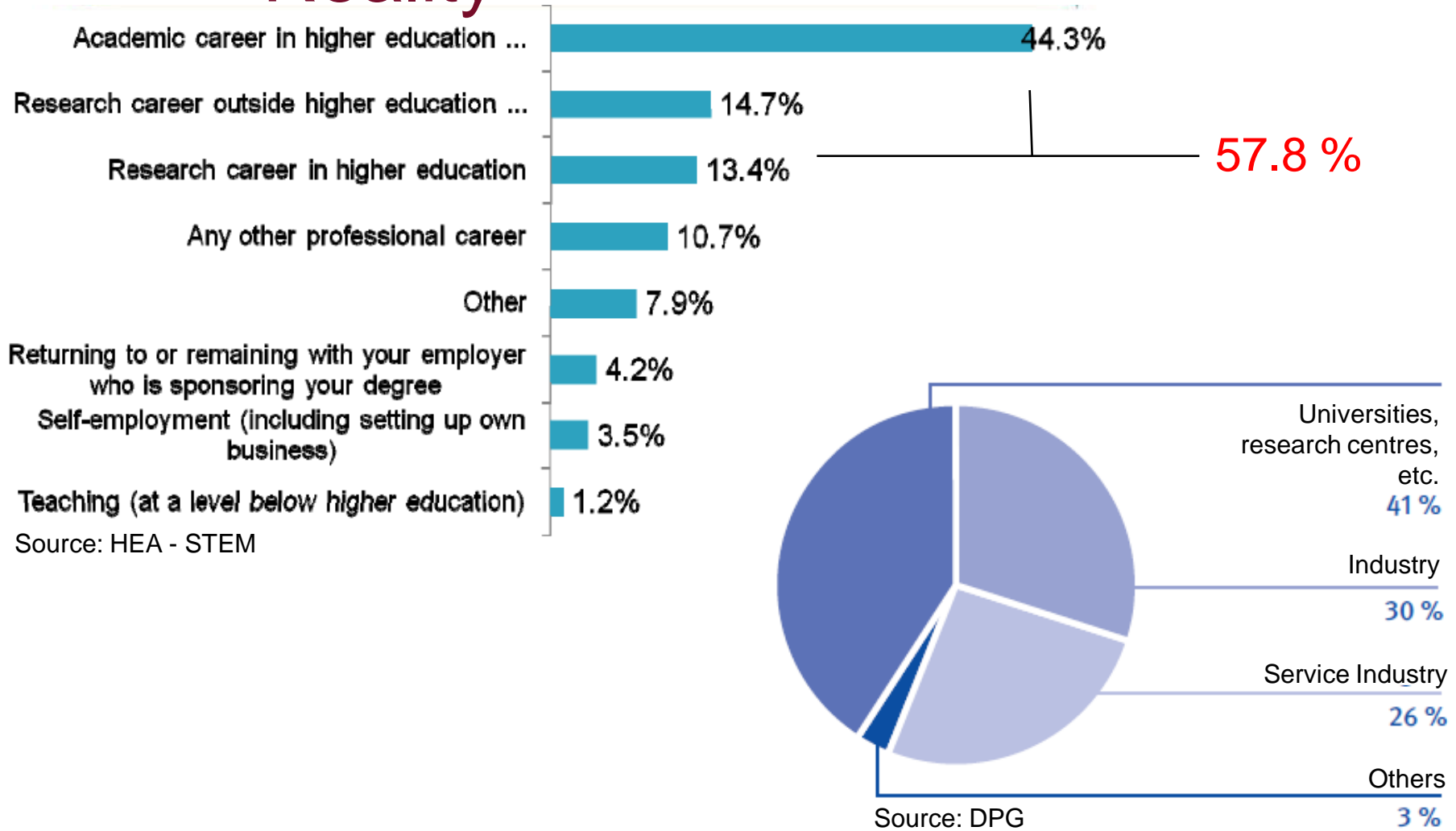
- What is LA³NET ?
 - Motivation
 - The consortium
 - The network's research and training program

- This school
 - What we will cover this week
 - Practical information

- MSc standard;
- PhD part of training in most countries;
- Broad skills;
- Blue sky research vs. applied physics.



Career – Aspirations and Reality



‘Classic’ PhD training in Europe

- Focus on academic career path;
- Scientific papers as key quality indicator;
- Training through (often blue sky) research;
- Very little training in complementary skills – researchers often need to be (re)trained on the job;
- Students or researchers ?

Evolution: Initial training networks (ITNs)

- Introduced in EU Framework Program 7 – 4.8 B€ !
- 1996 – 2010: 50,000 Marie Curie researchers;
- Provides support for early career and experienced researchers (young Postdocs);

Goals

- Improve employability of researchers;
- Better training through demonstrated international mobility;
- Maintain Europe's leadership position in R&D.

DITANET

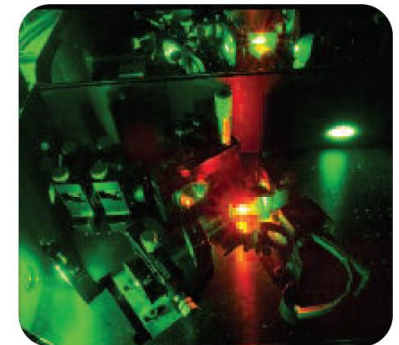
« novel Dagnostic Techniques for future particle Accelerators:
A Marie Curie Initial Training NETwork »




- Largest-ever EU funded training network in beam instrumentation and diagnostics (4.2 M€);
- Training of researchers (18 ESRs, 3 ERs)
- Gives industry an important role;
- Presently 32 partners (*and still growing...*)
- Recognized importance of beam diagnostics at European level !
(only 68 from 905 selected - with 11 in physics)

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

- More than 20,000 accelerators in the world;
- Lasers are becoming increasingly important
 - Beam generation;
 - Acceleration;
 - Characterization.
- Few experts trained in both fields;
- Large scale facilities: International collaboration is key !



 Multi-disciplinary field !

- One of the most competitive (EU) funding schemes.
 - A total of 1022 ‘Outline’ Proposals were received
 - Proposals were evaluated within 8 “Panels”
 - CHE: 108 proposals
 - LIFE: 285 proposals
 - ENV: 121 proposals
 - ECO: 15 proposals
 - SSH: 72 proposals
 - ENG: 204 proposals
 - MAT: 15 proposals
 - PHY: 99 proposals
- Only 84 selected;
-  ~8 %

What does this mean ?

- Funding for **17 fellows** (*15 @ this school*)
- One of the **very large Marie Curie networks** with a budget of 4.6 M€
- Gives **industry an important role** in training the next generation of scientists !
- Allows for organizing a (large) number of **events**.
- **Recognized importance** of laser applications for accelerators at European level !

Beneficiary Partners



Associated Partners



+ new partners joined in...more later this week !

Industry Commitments



GIGAOPTICS GmbH
Blarerstraße 56
79482 Konstanz
Germany



To:
Carsten Welsch
University of Liverpool
Department of Physics
Liverpool, L69 7ZE
UK

Dear Prof. Welsch,

Cobolt develops, manufactures and supplies diode-pumped solid-state lasers (DPSSLs) in the visible and near infrared spectral ranges. The company provides a broad range of market-adapted laser products built on a wavelength flexible, power-scalable and robust technology platform. The lasers are particularly suitable for OEM integration, but do also comply with applicable standards and directives for use as stand-alone devices in laboratory environment.

Cobolt is committed to supplying innovative laser products that meet or exceed the market's expectations concerning quality, reliability and performance. The lasers are designed and manufactured to ensure a high level of reliability, and operation of the company using qualified and established processes assures the quality of the company's products.

We maintain world-leading design expertise and proprietary technology in lasers as well as in nonlinear materials. This combination of know-how and IPR allows us to provide outstanding laser modules enabling entirely new customer applications.

Cobolt is much in favour of the LA³-NET initiative and pleased to actively contribute to this European Training Network by accepting a trainee from Karlsruhe, Germany for a total of two (2) weeks during a mutually acceptable period over the next forty-eight (48) months. This ambitious researcher will be given insight into our innovative laser products. We hope to thus enrich his or her education and to provide broader technology expertise for their future career.

Sincerely,

Håkan Karlsson, Ph.D.
CEO, Cobolt AB

Sebastian Marsching
Managing Director
Tel: +49 7221 991510
+49 7221 991511
Fax: +49 172 7159420
E-Mail: sebastian.marsching@aquenos.com

Date:
20.12.2010

LA³-NET project and would like to experience in collaborating with strongly encourage that industry-

er-based systems with very broad s for numerous industry projects. tion, control and IT systems will

g of one ESR from KIT by hosting of the LA³-NET project. We are developments and carry out case

EdgeWave GmbH | Schulzeallee 19 B | D-52148 Wipperfurth

Prof. Dr. Carsten Welsch
University of Liverpool
Department of Physics
Liverpool, L69 7ZE
UK

Ihre Zeichen
Prof. Welsch

Ihre Nachricht vom
18.01.2010

Betr.: Letter of intent

Dear Prof. Welsch,

EdgeWave is a highly innovative provider company was one of the pioneers in the of the international field in this new area of te most efficient production tools, with a uniq frequencies, beam quality and scalability manufacturing processes and introduces ne within large international collaborations. Co be achieved through the integrating of sili

We are ready to actively contribute to the NET* will offer by hosting a trainee from C time frame of the network. The early stage R&D program and will be familiarized with We hope to thus provide him with importa the training within LA³-NET and to help pro

We look forward to our partnership within t

Yours sincerely,


Dr. Kerling Du

Carsten P. Welsch
University of Liverpool
Department of Physics
Liverpool, L69 7ZE
UK

Dear Prof. Welsch,

High Q Laser is a supplier of picosecond lasers for scient

Based on the technologies (SESAMs), our solutions are shortest pulses with picos High Q Laser continuously technologies allow for hig sophisticated customers n ultrafast laser systems.

We are well aware of the n received an Inter-sectorial Initial Training Network in the needs of a broad indus

We have been collaborati offering to welcome one c receiving more informati High Q Laser is looking for

Yours sincerely,

High Q Laser Innovation Gm
VAT No.

Dr. Heit
Sales &
High Q

RI Research Instruments GmbH
Carsten Welsch
University of Liverpool
Department of Physics
Liverpool, L69 7ZE
UK

Dear Prof. Welsch,

RI Research Instrume sources and particl our company history o the Bruker Energy ar accelerator systems, were carried out in par

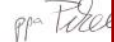
We welcome the oppo the forces of industry a young researcher, who to meet future challeng

We are already in c (HZDR) and it is our in injector. Moreover, we (ESR) to be employe weeks throughout the

We are pleased to be
- Linear accelera superior quality
- Particle source and are confident that

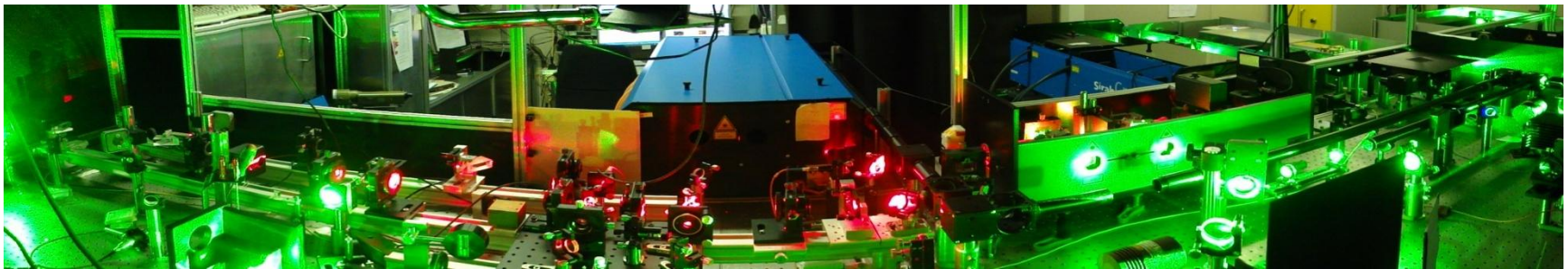
Moreover, we are plea for industry and will be and development of sp

Yours faithfully
RI Research Instrume



RI Research Instrume GmbH
Carsten Welsch
D-52148 Wipperfurth

- Main areas:
 - Particle Sources;
 - Particle Beam Acceleration Schemes;
 - Beam Diagnostics;
 - System Integration;
 - Laser and Photon Detector Technology.



- Local training by host;
- Network-wide schools on diagnostic techniques;
- Intra-network exchange of researchers;
- Secondments to partners from industry;
- Training in complementary skills

➔ Motivation: *Ideal* Training.

Overview of this week

First LA ³ NET school. Laser applications: GANIL, France						Monday 15 to Friday 19 October 2012	
	Monday	Tuesday	Wednesday	Thursday	Friday		
8:30 9:30	Welcome / Introduction Marek Lewitowicz, GANIL Admin/logistics Nathalie Levesne, GANIL LA ³ NET Carsten Welsch, ULIV	Characterisation of the laser output David Walsh, UDUN	Beam Diagnostics using lasers I: Laura Corner, John Adams Institute, Oxford	Laser optical clocks and accelerator timing systems: Trina Thakker, STFC	Supervisory Board (SB) Annual Meeting – joint session with introduction to fellows		
9:30 10:30	Introduction to Lasers I: Luis Roso, CLPU	Laser Ion Sources I: Bruce Marsh, CERN	Beam Diagnostics using lasers II: Allan Gillespie, UDUN	Optical laser requirements, developments and simulations at the European XFEL: Max Lederer, European XFEL	Q&A Guided by senior scientist for non-SB	SB Annual Meeting	
11:00 12:00	Introduction to Lasers II: Jonathan Billowes, U. Manchester	Laser Ion Sources II: Bruce Marsh, CERN	Seminar on X-ray FEL sources Luc Patthey, PSI	Ultrashort pulsed lasers Thomas Pfeifer, MPINR	What's in it and how do we get there - industrial applications of laser acceleration Arnd Baurichter, Danfysik		
12:00 13:00	Beam Shaping: Marta Divall, PSI	Laser Acceleration I: Arie Irman, HZDR	Laser materials: Hervé Gilles and Mathieu Laroche, CIMAP	Study Session <i>split in 3 groups</i> Steering committee members	Solutions to the photonics industry: from a customer's idea to an off-the-shelf product Julien Vigroux, Thorlabs Challenges in industry Jonas Hellström, Cobolt SCHOOL CONCLUSION		
LUNCH							
14:30 15:30	Introduction to accelerators: Carsten Welsch, ULIV	Laser Acceleration II: Arie Irman, HZDR	Visit GANIL 2 h 00 m 4 groups of up to 25	Poster session and industry table-top display		DEPARTURE	
15:30 16:30	Applications of accelerators – Principles of Free Electron Lasers: Allan Gillespie, UDUN	Study Session <i>split in 3 groups</i> Steering committee members		Poster session and industry display	SC meet		
17:00 18:00	Q&A Guided by Luis Roso, CLPU	Non-linear optics for accelerator diagnostics: David Walsh, UDUN		Seminar ELI installation: Taking European research to the next level Ken Ledingham, U. Strathclyde	SC meet		
Eve	Reception in GANIL guest hall. 18:30 Cocktail <i>dinatoire</i>		From 21:30 guided tour of Caen, approx. 2hr	Dinner at Le Domaine de la Baronnies including ESR Prize 2012 presentation			

- Internet available throughout week;
- All meals at GANIL;
- Posters can be setup from today;
- SC/SB meetings run in parallel to main sessions;
- Tonight @ 18:30: Cocktail dinner;
- All information will be kept in CERN's indico, search for LA³NET (or via www.la3net.eu)

- In case of problems: emergency phone numbers !

Most lecturers stay during the week: Don't be shy !

Network. Discuss with other participants !

Enjoy your week !