LASERLAB-EUROPE

The Integrated Initiative of European Laser Research Infrastructures IV

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Laserlab-Europe Conference

Lead Beneficiary: 1 – LU

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Deliverable Type	
R = Report DEM = Demonstrator, pilot, prototype, plan designs DEC = Websites, patents filing, press & media actions, videos, etc. OTHER = Software, technical diagram, etc.	OTHER
Dissemination Level	
PU = Public, fully open, e.g. web CO = Confidential, restricted under conditions set out in Model Grant Agreement CI = Classified, information as referred to in Commission Decision 2001/844/EC	PU

1 Introduction

Work package 3 – "Publicity and Dissemination" deals with all aspects of external communication of the Laserlab-Europe consortium. The overall objectives are (i) to promote the recognition of Laserlab-Europe and its achievements and to increase the general awareness of the opportunities offered by the Consortium, and to communicate these to a very broad audience, from the general public, to fellow scientists, potential users of laser-based tools in very diverse scientific fields, and to regional, national and European public organisations; and (ii) to enhance the dissemination of project results and to promote their exploitation wherever possible.

Lead beneficiary: 1 LU

2 Objectives of the task "Laserlab-Europe Conference"

A conference was planned towards the end of the project, in order to highlight scientific achievements and societal impacts of the network's activities to members and external partners from the laser community, the industrial and health care sectors and from the user community. The conference was intended to help promoting Laserlab-Europe to external collaboration partners.

The General Assembly of Laserlab-Europe had decided to organise the Laserlab Conference back to back with the second Joint JRA Meeting, which included sessions open to external participants. This colocation made the conference attractive for industrial participants. In addition, companies were invited to present themselves for collaboration in an exhibition space.

3 Conference report

Laserlab-Europe Conference, Florence, Italy, 9-11 October 2019

The Laserlab-Europe partners and external collaborators gathered on 9-11 October 2019 in Florence, Italy, for a Joint Research Activities (JRA) Meeting and a Laserlab-Europe Conference, hosted by LENS, the European Laboratory for Non-linear Spectroscopy.

The first two days focused on exchange about the progress and achievements within and across the JRA's that have been performed by subgroups of project members collaborating on a set of research projects. Highlights from the research carried out during the previous four years were presented covering a huge variety of subjects from laser 3D printing of biomaterials to hyperspectral SRS for the detection of microplastic particles or methods of controlling the dose of laser-accelerated proton beams.

The JRA meeting was followed by a one-day Laserlab-Europe Conference where, for example, highlights of external users performing research projects at Laserlab facilities were presented to a broad audience. Topics ranged from photo-acoustic imaging of art works to methods of manipulating DNA and fundamental physics with attosecond pulses. In addition, there was a panel discussion on industrial relations and collaboration options, examples of successful start-up companies related to research in Laserlab-Europe and an introduction to related international laser consortia, e.g. LaserNetUS, the Asian Intense Laser Net and the ELI delivery consortium. Efforts were made to achieve a good geographical representation and gender balance in the programme of the conference.

About 90 participants attended the conference, including 30 participants that do not belong to the Laserlab-Europe consortium, such as users, external collaboration partners and representatives of companies. Ten participants represented companies such as Rigaku Innovative Technologies Europe, Dynamic Optics srl, FEMTO EASY, NIREOS and Femtika. The participants very much appreciated the opportunity to learn and exchange about achievements in different areas and opportunities for future involvement in the activities of Laserlab-Europe.

Laserlab-Europe Conference participants

4 Laserlab-Europe Panel Discussion on Industry Engagement

4.1 Description of session

The session was held to discuss the experience of the engagement with industry, an activity of increasing interest to tackle the problem of scientific translation to the benefit of society beyond scientific knowledge advancement and training. The secondary purpose of the meeting was to obtain an insight into types of engagement and experiences within the Laserlab-Europe community.

The panel composition was diverse in experience and representation. It was made up of Laserlab-Europe members and partners with expertise in engaging with industry, or a company. The panel members and their experience are briefly described below:

Ed Mitchell, Head of Business Development, ESRF
Ed and ESRF, are well known in the High Energy Physics Technology Transfer community for their excellent industry engagement activities. Since 2010 he manages the relations between ESRF and industry via the Business Development Office, which today earns over 2 M Euros annually via service and Technology Transfer.

Mariastefania De Vido, Laser Scientist, CLF, STFC
Maria works in the Centre for Advanced Laser Technology and Applications (CALTA). Much of her recent work has been on industrial applications. She was awarded an Industrial Fellowship from the Royal Commission for the Exhibition of 1851 to work on industrial problems. She also set up a collaboration between CALTA and Exogenesis Corporation, a company which is based in Boston (USA) on the development of new surface processing techniques.

Lorenzo Targetti, Managing Director, Light4Tech
Lorenzo is an entrepreneur and is looking for new technologies that he can bring to market. He co-founded Ligh4Tech together with Prof Francesco Pavone with the mission to turn scientific discoveries made by the Florence research centres in the field of microscopy and biophotonics into marketable products or entrepreneurial initiatives.

Dino Jaroszynski, Professor, Strathclyde University
Amongst many other responsibilities, Dino is leading the Scottish Centre for the Application

of Plasma-based Accelerators (SCAPA). In this role, he is also concerned in engaging with industry to find applications that support industry R&D.

Dario Polli, Co-founder and Scientific Advisor, NIREOS
The company NIREOS was spun out from Politecnico di Milano where Dario is a Professor. The technology, based on a high performing interferometer, was developed in Dario's group, and he has helped to set up the company. Dario wants to remain in an academic career where his strengths and interest lie. But he also likes to see his research being commercialised and being used by many people. He is happy for others to do so. The company is still strongly linked to the university and uses those contacts to drive product innovation.

Anke Lohmann, (moderator), Founder and Director, Anchored In
Anke worked at the interface of technology translation for many years, connecting companies and academic groups. She set up a national network to translate the emerging UK Quantum Technology into industry and find applications. She is very aware of the opportunities, but also the boundaries between academic and industrial interest. With her company Anchored In, she wants to help accelerate innovation by engaging with companies, academic institutions and policymakers.

The structure of the moderated panel started with a brief description of who the panelists are and their role. It was then followed by a discussion of the questions posed to the panel (see below) and ended with an open Q&A session from the audience.

- Why are they working with industry/academia? What benefits do they get from working with each other?
- What type of industry sector they work with and why? What benefits do they bring to the different sectors?
- Are they working with small and large companies? Is there any difference in how these engage?
- How do they work with industry or academia? What have they found needs to be in place at the academic side to work with industry?

4.2 Observations and Outcomes

The session was well attended, and the audience participated in the Q&A. As it is common in those discussions, there are a few people that ask most questions. Based on the excellent attendance, one can conclude that the topic of industrial engagement is sufficiently important. Still, it was difficult to judge, what the experience and the real interest from the audience was. In the future, a few questions to the audience might help to gain a better understanding.

Key Outcomes from the discussion:

1. The experience with industry engagement varies.
2. Some Laserlab-Europe members (possibly most) have implemented well-working processes to engage with industry, and they do continuously improve them to attract more companies, such as SMEs. Laserlab-Europe may want to use this expertise to distribute best practices amongst members that are in the earlier stages of engagement.
3. The engagement between Academia and Industry is seen as beneficial, but it needs to fit within a particular framework:
    a. The problems posed by industry need to be novel and require research. Such problems exist and are plenty.
    b. Ideally (though it was acknowledged that this cannot always be the case) the engagement should allow continued publication.
    c. The ownership of IP needs to be clear, and academic partners need to be aware of IP protection mechanisms.
    d. Timely delivery of projects is a requirement from the industry partner.

4. Spinouts from institutions have an important role. Spinning out builds a local ecosystem and keeps skills within the vicinity of the facilities and universities. It provides continued technology translation.
5. Engaging with SMEs is difficult. The needs and time horizon for SMEs is short. This requires more effort and resources than engaging with large companies.

Concluding from those comments, one can assume that local engagement tends to be well served and is best done by the institution in place. It is unlikely that Laserlab-Europe can significantly add to this activity.

The benefit that the Laserlab-Europe association can bring is to support industry projects that are beyond the capability of the local institution. To achieve this, Laserlab-Europe should set up a system that links up expertise and forms a consortium quickly. Collecting a list of expertise is not sufficient; it will require active management. Since the members of Laserlab-Europe already work well together on scientific projects, it should tap into this experience.

PROGRAMME	
08:30	*Registration*
09:00	Welcome (Francesco Pavone, LENS and Claes-Göran Wahlström, LLC)
	Session 1: Highlights from the Laserlab-Europe transnational access programme
09:15	Introduction to the access programme (Pascal D'Oliveira, CEA-LIDYL)
09:20	Life sciences: DNA intercalators tilt, wobble, and twirl: Probing the structure of overstretched DNA Adam Backer (Sandia National Laboratories, New Mexico, USA, project at LaserLaB Amsterdam)
09:45	Cultural heritage: Combined photoacoustic imaging to delineate the internal structure of paintings Alice Dal Fovo (INO-CNR, Italy, project at ULF-FORTH)
10:10	Instrumentation with potential for industrial application: OH-Vibrations-Sensitive Integrated Photonic Sensors for Harsh-Environment-Resistant Aircraft Icing Protection Systems Airan Rodenas (Universidad de La Laguna, Spain, project at CUSBO).
10:35	*Coffee break*
	Session 2: Highlights from the Laserlab-Europe joint research and networking programmes
11:00	Introduction to the JRA programme (Sandro De Silvestri, POLIMI)
11:05	JRA highlight: Lab based X-ray sources and instrumentation for imaging and spectroscopy Holger Stiel (MBI)
11:30	JRA highlight: Multimodal microscopy and spectroscopy for advanced diagnostics of bladder tumour Riccardo Cicchi (LENS)
11:55	Introduction to the networking programme (Jens Biegert, ICFO)
12:00	Fundamental physics: Ultrafast dynamics of resonant photo ionization using attosecond pulses David Busto (LLC, joint experiment CEA-LIDYL / LLC)
12:25	Impact of staff exchange for infrastructure development: Luca Volpe (CLPU)
12:50	*Lunch*
	Session 3: Panel discussion on industrial relations
14:00	Introduction to industrial relations (Claes-Göran Wahlström)
14:05	Example of spin-off company: Linas Jonusauskas (Femtika, Lithuania, VULRC spin-off)
14:25	Panel discussion: Industrial involvement in Laserlab-Europe Moderator: Anke Lohmann, Anchored In; Panelists: Ed Mitchell, ESRF/CALIPSOplus; Mariastefania De Vido, CLF; Lorenzo Targetti, Light4Tech; Dino Jaroszynski, Univ. Strathclyde; Dario Polli, NIREOS
	Session 4: Laserlab-Europe and international collaboration
15:25	Introduction to international collaboration (Sylvie Jacquemot, LULI)
15:30	LaserNetUS: Mingsheng Wei (Laboratory for Laser Energetics, Rochester)
15:45	Asian Intense Laser Net: Chang Hee Nam (KAIST, Korea, by video)
15:55	ELI: Allen Weeks (ELI-DC)
16:10	Conclusions and ending
16:15	*Coffee*
16:30	*End of sessions*