LASERLAB-EUROPE

The Integrated Initiative of European Laser Research Infrastructures V

Grant Agreement number: 871124

Work package 8 – NA7 – Innovation Management and Industry Relations

Deliverable D8.2
Report on relations with industry

Lead Beneficiary: 30 – LLE-AISBL

Due date: Month 60

Date of delivery: Month 60

Project webpage: www.laserlab-europe.eu

Deliverable Type		
R	Document, report	R
DEM	Demonstrator, pilot, prototype	
DEC	Websites, patent fillings, videos, etc.	
OTHER		
ETHICS	Ethics requirement	
ORDP	Open Research Data Pilot	
DATA	data sets, microdata, etc.	
Dissemination Level		
PU	Public, fully open, e.g. web	PU
CO	Confidential, restricted under conditions set out in Model Grant Agreement	

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1 Objectives

The objectives of WP 8 are to foster Laserlab-Europe's relations with industry and the medical sector and to implement supporting measures that will promote the use of advanced laser technology for industrial and medical applications. Further objectives are to promote the use of laser RIs by industrial researchers, to enhance technology and knowledge transfer and help to fully exploit the innovation potential of the participating research infrastructures.

2 Framework

An Industrial Advisory Committee (IAC) has been set up at the start of the project, consisting of eleven members, six of them from companies, both large and small ones, of representatives of Laserlab-Europe partners with special interest and expertise in industrial relations as well as of the project Coordinator. All members have been elected by the Laserlab-Europe General Assembly.

The IAC provides professional and technical information and advice in order to assist Laserlab-Europe in responding and adapting to exploitation opportunities and innovation needs. In collaboration with the IAC, Laserlab-Europe is organising topical workshops to enhance exploitation and interaction with industry and medical centres in relation to issues addressed in networking as well as joint research activities.

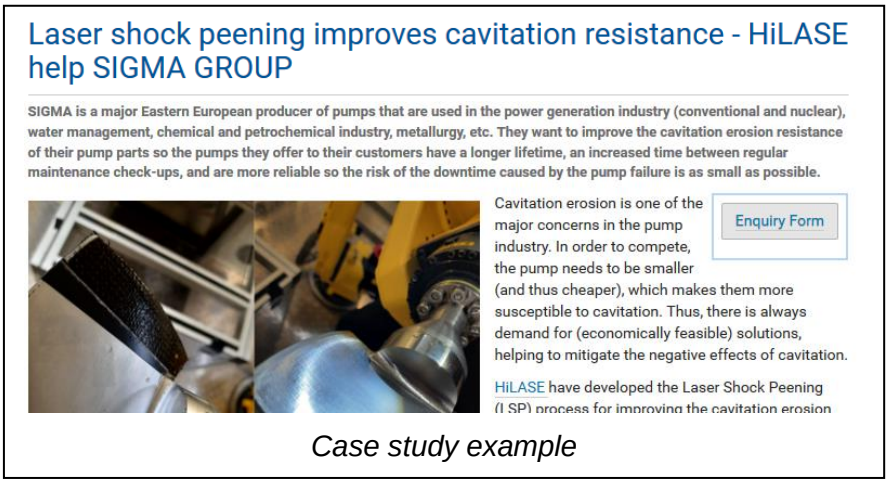
During the project lifetime, the IAC held four online committee meetings and one meeting in person. The IAC discussed opportunities and needs for industrial involvement in Laserlab-Europe's activities in general, with particular focus on transnational vs. national access and access conditions for SMEs, collaboration with industry in the context of the Joint Research Activities, in topical workshops and in training activities. In particular, the IAC provided valuable input on topics as well as involvement of companies for the foresight workshop on "Opportunities with laser-bases technologies" in 2023 and for the Laserlab-Europe conference in 2024. In addition, the IAC contributed an industrial point of view to the landscape analysis and roadmapping exercise (within WP6).

3 Task 1: Industry Services

Task leader: FVB-MBI

Laserlab-Europe offers a broad range of expertise and collaboration opportunities with industry and medical centres. In order to make this expertise more easily accessible and to promote the use of laser RIs by industrial researchers, services for industry and an inventory of expertise are presented on the project's webpage (https://www.laserlab-europe.eu/industry-services). Furthermore, Laserlab-Europe acts as a facilitator for promoting local and/or national access opportunities for industrial users who require fast and confidential access to a facility to support their product innovations.

The dedicated webpages present a collection of case studies that provide examples of successful collaboration of industry with Laserlab-Europe facilities. The case studies illustrate the different kinds of services that are offered from short-term consultation and testing of samples to knowledge transfer and IP licensing, to long-term joint technology development.



Case study example

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A catalogue of technologies and services offered to industrial users, which can be browsed through a dedicated Industry Search Tool, allows identifying the facilities which fit specific industrial needs and offers the possibility to directly contact them. The keywords of the search tool have been carefully chosen to cover a wide range of applications. Additionally, an enquiry form provides the opportunity to send general requests to the Laserlab-Europe office.

4 Task 2: Innovation Forum

Task leader: LLE-AISBL

Under Task 2, Laserlab-Europe maintains an Innovation Forum, with support from the Industrial Advisory Committee, in order to facilitate exchange between stakeholders from academia, industry and the medical sector. Workshops are held to enhance interaction of laser facilities with industry and medical centres, in particular with a view to exploit the innovation potential resulting from the JRAs.

Laserlab-Europe Symposium "Lasers Fighting Cancer", 25 May 2021, online event
Medical and industrial application of lasers in the diagnosis and treatment of cancers

Laserlab-Europe provides outstanding laser-based cancer research performed by its members, often in interdisciplinary collaboration with medical institutions, as well as a unique innovation potential for disruptive technologies. These activities showcase the role lasers play from understanding cancer to advanced diagnostics up to treatment modalities - on the level of fundamental or pre-clinical research up to the clinical application. On the other hand, there is a huge global market for medical applications, e.g. for optical and radiological medical imaging technologies, minimal-invasive individualised treatment techniques and optical drug monitoring. Based on these framework conditions, the first workshop on innovation and industry relations focused on medical and industrial application of lasers in the diagnosis and treatment of cancers.

For details, see deliverable D8.1: First workshop on innovation and industry relations

Laserlab-Europe Talks: Next Generation imaging and image-guided diagnosis and therapy for cancer, 23 February 2022, online event

Following up on the successful Laserlab-Europe Symposium "Lasers Fighting Cancer", which gave an overview on the broad range of medical and industrial applications of lasers in the

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diagnosis and treatment of cancers, a targeted online workshop has been organised in the framework of the Laserlab Talks. This workshop focussed on “Next generation imaging and image-guided diagnosis and therapy for cancer” and included two academic presentations, a presentation from a company and a presentation from the hospital perspective. 65 attendees participated in the sessions and the discussion. The topics were:

- Time domain multiwavelength diffuse optics in breast cancer management, Paola Taroni (CUSBO)
- Theranostics with photoacoustic tomography and photosensitisers, Luis Arnaut (CLL)
- Multimodal photoacoustic imaging of tumor angiogenesis, Jithin Jose (FUJIFILM Visualsonics)
- The practical use of cancer imaging technologies in hospitals, Jan Grimm (MSKC New York)

Laserlab-Europe Talks: Lasers and batteries, 23 March 2022, online event

A second workshop targeting a topic of huge interest for collaboration with industrial partners was also organised under the framework of the Laserlab Talks. It focussed on laser technologies used for assessing and fabricating materials for improving efficiency and durability of batteries. The event was attended by 45 participants from institutions not only in Europe, but also in the US, Canada, Chile, India. The following topics were presented:

- Optical spectroscopy of battery degradation, Akshay Rao (Cambridge University)
- Optical spectroscopy of materials for batteries, Benedetto Bozzini (POLIMI)
- Ultrashort pulsed laser assisted fabrication of materials for batteries applications, Emmanuel Stratakis (IESL-FORTH)

Foresight Workshop on Future Laser-Based Technologies, 24-26 July 2023, Riga, Latvia

On 24 and 25 July 2023, the Laserlab-Europe partners gathered in Riga, Latvia, for the Foresight Workshop on Opportunities with Future Laser-based Technologies. The event was hosted by the University of Latvia. During both days, 54 participants from Europe and North America met on-site, around 20 joined online.

The Foresight Workshop aimed to address the scientific possibilities and exploitation of advanced light sources and methodologies which nowadays reach extreme intensities and unprecedented average powers, but also extreme wavelengths from the soft X-ray to the terahertz regimes. The workshop involved the relevant communities and facilities as well as companies to investigate how the opportunities can most efficiently be met and exploited. How can they be used to develop new opportunities in industry and for society, and how can they be applied to tackle Grand Societal Challenges?

In view of the venue in the Baltic region with strong photonics clusters and associations, in particular regional industrial representatives were invited to present, exhibit, and participate to the Foresight Workshop.

Three sessions addressed the following topics:

- environment & water (microplastics, nanoplastics and pollution)
- laser processing for materials structuring
- photoacoustics.

The sessions included diverse presentations from international representatives of science and industry and led to productive discussions and exchange on ideas for new projects.

For details, see deliverable D6.2: Second Foresight workshop

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Laserlab-Europe Conference, 27-29 May 2024, Lisbon, Portugal

On 27-29 May 2024, Laserlab-Europe organised the Laserlab-Europe conference in Lisbon, Portugal, hosted by the Instituto Superior Tecnico. More than 100 participants from Europe and North America attended the three-day event.

In order to attract a broad audience, it was decided to merge a general outreach event with a user meeting and a public joint JRA meeting. A programme committee, representing the access and JRA activities of Laserlab-Europe, the Industrial Advisory Committee, and the expert groups of the network, identified relevant topical areas. Users of the transnational access programme and industrial representatives from the IAC were actively involved in the programme setup.

The programme included five sessions on the following topics:

- Session 1: Lasers for catalysis
- Session 2: Attoscience
- Session 3: Lasers in a multi-instrumental world
- Session 4a: Lasers for health - Lasers for oncology
- Session 4b: Lasers for health - Lasers for imaging and diagnosing life
- Session 5: Lasers and laser-based instruments for the future

All sessions included talks from Laserlab-Europe representatives on recent developments resulting from joint research activities, talks from users of the transnational access programme on access highlights and talks from companies' representatives giving an outlook on development needs and opportunities from an industrial perspective.

As part of the conference, exhibition space was provided for companies that set up stands showcasing their innovations. Several regional industrial representatives from Portugal and Spain, as well as companies from France, Poland and the Czech Republic, presented their companies and latest developments and participated in the conference.

The option to contribute to the programme with a company's perspective was appreciated and talks from industrial representatives were included in two sessions. In addition, company representatives attended all sessions and participated in the discussions.

Feedback from the industrial participants was very positive, and all participants expressed a strong wish for follow-up conferences.

For details, see deliverable D2.6: Laserlab-Europe Conference

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