LASERLAB-EUROPE

The Integrated Initiative of European Laser Research Infrastructures V

Grant Agreement number: 871124

Work package 5 – NA4 – Access Management and Monitoring Infrastructure-Users Connections

Deliverable D5.1

Intermediate report on User relations

Lead Beneficiary: 1 – CNRS-LULI

Due date: Month 24

Date of delivery: Month 24

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

This WP aims at (i) coordinating the Laserlab-Europe joint transnational access programme, including managing its proposal submission and selection procedures, (ii) monitoring and improving, at the consortium level, the quality of services provided to users by the access-providing infrastructures, with substantial involvement of User Representatives, and (iii) taking advantage of user feedback to refine the consortium long-term strategy. All access-providing facilities and all User Representatives are involved in this activity under the leadership of the Access Board.

Lead beneficiary: CNRS

2 Modalities of Access Management and Selection Procedures

The transnational access activity is organised as a joint activity among all participating infrastructures, under supervision of the Access Board. The technical web-based tools used for the access proposal submission and selection procedures are implemented in WP2 “Publicity, Dissemination and Community Support”. Outreach to new users is addressed in WP2 and in WP4 “Training and Development of User Communities.

Search tool for finding a suitable facility for an access project.

The Laserlab-Europe publicity policy is currently based on mailing campaigns, on the Laserlab-Europe website and Newsletter and on the individual webpages of the access providing infrastructures (APIs). Special care is devoted to diversifying the targeted scientific communities in order to promote trans-disciplinary access projects.

The access opportunities offered by the APIs are described on a unique Internet page https://www.laserlab-europe.eu/transnational-access. A permanent “Call for Proposals” is posted there; it clearly states that Laserlab-Europe is welcoming young researchers, and is promoting gender equality, thus encouraging proposals led by female principal investigators (PIs). In particular new users are targeted; to help them defining the most appropriate facility for their research, the single portal is providing, for each of the topics tackled at the various Laserlab-Europe APIs, links to dedicated pages where the technical capacities of the facilities are described.

To find a suitable laboratory for their access projects, from fundamental science to validating a practical application, interested users can browse a catalogue of technologies and services offered by the access providing infrastructures. Topics are grouped by overall subject area, then by increasingly specific fields, in order to be as intuitive as possible for a user unfamiliar with Laserlab-Europe (see figure on the left and online at https://www.laserlab-europe.eu/transnational-access/find-a-facility).

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Description of submission and selection procedures

Transnational access is granted consortium-wide through a unified and original policy, which has first been successfully implemented in FP6 and constantly refined during the course of subsequent contracts. The Access Policy is part of the Consortium Agreement and, as such, binding.

A web-based application procedure (the Proposal Management System (PMS)) provides a single, unified entrance gate to all Laserlab-Europe APIs. The applicant can target an infrastructure on the basis of the technical specifications of the provided equipment and of the scientific expertise available on-site.

The proposal evaluation is being performed by a common, fully external Selection Panel, having access to a pool of more than 200 external and international referees. It is composed of three international experts, including one User Representative, proposed and elected by the General Assembly. The panel acts on behalf of the consortium, but is independent in its scientific judgements. Selection is done on the basis of scientific excellence, followed by priority for new users. An evaluation report, summarizing the referees' comments and duly explaining rejection/acceptance reasons, is sent to all applicants. Evaluation and selection are, as submission, fully web-based and managed through the Laserlab-Europe PMS.

Proposals can be submitted at any time ("continuous" call) to the majority of the APIs, except the large-scale ones (CLF, CLPU, FELIX, FERMI, GSI, HZDR, HiLASE and LULI) where scheduling procedures with fixed deadlines have to be implemented.

Once accepted, a project must be scheduled and completed within 20 months. If, for any reason, the API cannot schedule a project within this validity period, the Access Board will be informed and actions will be taken to either re-direct it or to re-submit the proposal.

Eligibility

Transnational Access is exclusively reserved for external users. Scientists from one access-providing partner wanting to use the facilities of another access-providing partner are not eligible for financing out of the Transnational Access Activity. However, to foster collaborations between APIs, and thus to reinforce the collective expertise within Laserlab-Europe, such visits are encouraged under the scheme of "Joint Experimental Programmes" through the Networking Activity WP3.

According to the grant agreement and to the Laserlab-Europe Access Policy, up to 20% of the access units can be granted to user groups for which the PI or the majority of the members are not affiliated to an Institution located in a European Member or Associated state ("Third Country Access" or "Non-EU Access").

Dynamic Access Allocation

The "Dynamic Access Allocation Policy" provides efficient flexibility to the individual infrastructures when forced to react on unpredictable fluctuations in the users' demand or on temporary down-times of equipment by transferring access units between APIs. A limited reallocation (from ~5 to ~20% of the total access days) has proven to be very effective during past contracts to adjust optimally the access programme to the users' demand and to ensure that consortium-wide contract objectives in terms of access days, projects and user groups are met. Dynamic access allocations are being managed by the Access Board (through monitoring of the programme every 6 months) and approved by the Management Board.

Modifications of the Access Policy in the context of the COVID-19 pandemic

In 2020, the Access Policy was adapted to mitigate as much as possible the impact of the COVID-19 pandemic and associated travel restrictions on Laserlab-Europe's Access programme.

First, the validity period of the proposals was increased to 32 months (instead of 20 months) for those proposals that were still valid on 1 February 2020, the date considered as the start

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of the travel restrictions, and also for the proposals submitted from 1 February 2020 to 31 July 2020. This extension seemed only natural as the sharp slowdown of the experimental activity during the COVID crisis extended the scientific relevance of the projects as a side-effect.

To allow the access activities continuing during travel restrictions, Laserlab-Europe has introduced the possibility of carrying out remote access experiments. Strict conditions must be met in this case:

- only remote access based on a strong involvement of the user(s) will be permitted by Laserlab-Europe; the user(s) should be directly involved, usually on a daily basis, via video or audio link, and must actively participate in the different steps and decisions during the experiment;
- the unit cost claimed for remote access should be the same as for access in person.

Remote access was first introduced for a trial period extending from 09/20 to 03/21; it was then prolonged until 09/21. Following an analysis of the output of remote access, the General Assembly has considered that the test was successful and has decided to make remote access would a permanent feature of the access programme.

3 Support Offered to users at each Facility

All access facilities routinely provide the necessary services to their users, including on-site training, offices and computational tools. Administrative staff takes care of logistic arrangements: travel & subsistence, transfer of material, reimbursements, clearance, etc. Dedicated technical staff is in charge of daily provision of laser and experimental area operation. The users also have scientific assistance from local scientists, thus receiving not only access to a given facility but also benefiting from the expertise of the host group. Feedback on the quality of local support is collected through the user feedback forms (see section 5).

4 Interaction with User Representatives

The Laserlab-Europe User Representatives Committee consists of scientists who are experienced users of Laserlab-Europe access-providing facilities and, hence, are familiar with both the scientific needs of users and the opportunities provided by the host infrastructures. In their capacity they act as an interface between the user community and Laserlab-Europe, providing advice to both sides and helping to maintain and improve mutual relations. Eight User Representatives have been nominated and elected by the General Assembly at the start of the project and have permanent seats in the boards of Laserlab-Europe, in particular the Access Board, the Networking Board, the Management Board and the General Assembly. They co-organise the User Meetings (from establishing the scientific programme to chairing Round Tables) according to guidelines they have developed during the previous contracts. For the first User Meeting, they have designed a concept for an online format together with the Access Board to make a User Meeting possible taking into account COVID-19-related restrictions (see below). Users can find contact details for individual User Representatives or the Committee as a whole on the webpage, so that they can address their questions, comments and suggestions directly to them.

5 User Feedback and Response to User Needs

Principal Investigators (PIs) are requested, once their experimental campaigns are completed, to fill in an Experimental Effectiveness Assessment Form (EEAF) and to submit a brief summary of their achievements (Activity Reports).

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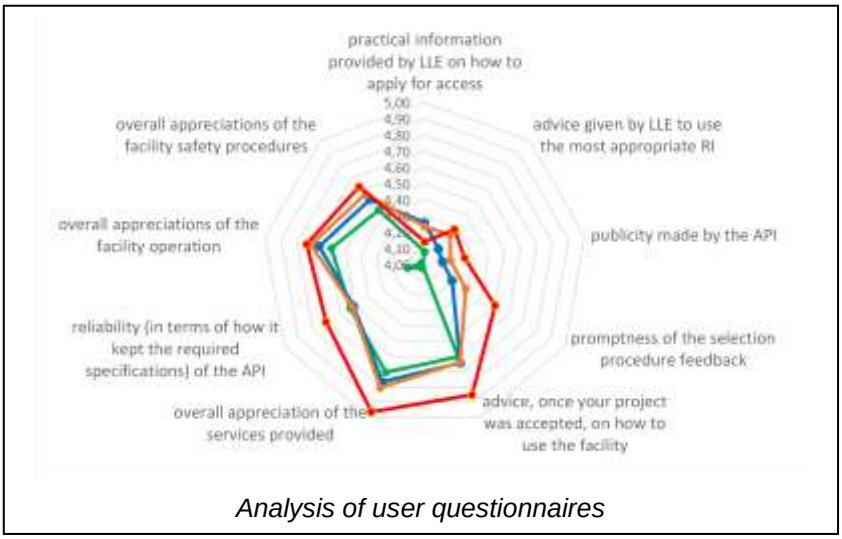
The form assesses i) access publicity, ii) the consortium's submission/selection procedure and iii) the overall quality of the support provided by the host facility through grades from 1 (very poor) to 5 (very good). Answers are analysed periodically to help defining actions to be taken by the infrastructures and the consortium to improve the access offer.



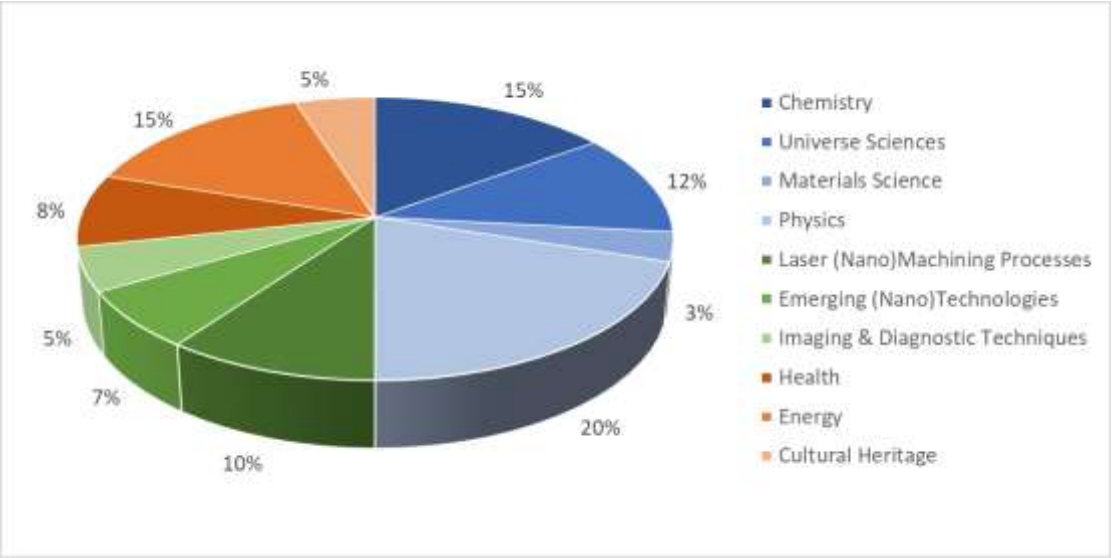
Analysis of user questionnaires

At month 24, 27 EEAFs of Laserlab-Europe V access projects have been received, which represents a response rate of 40%. Their analysis is summarized on the Kiviat diagram on the left plotted from values 4 to 5. The present Laserlab-Europe project (12/2019-11/2023) is displayed in red whereas the green, blue and orange curves refer respectively to the 2nd (03/2009-05/2012), 3rd (06/2012-11/2015) and 4th (12/2015-11/2019) project periods.

It is remarkable that all marks for LLE5 range from 4.1 to 4.9. This reflects a very high level of satisfaction of our users. In addition, for almost all services, the red line, which represents the current project, is outside the orange, blue and green lines, meaning that the user satisfaction has improved compared to previous programmes. The service on "practical information on how to apply for access" is the only one that does not progress; the reason for such an appreciation is not yet fully understood as the lowest marks have been allocated by "old" PIs. The user satisfaction seems thus to be at its highest and to not suffer from the implementation of remote access.

Scientific fields

The scientific fields tackled by our users through Laserlab-Europe's access programme are rich and diverse as can be seen on the pie chart below.



Breakdown of the scientific fields of the LLE5 projects done or started during the reporting period

The breakdown of the projects shows a good balance: projects aiming at deepening knowledge are slightly predominant (46% - in blue on the graph above) and we can notice a

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significative number of projects aiming at developing novel technologies and materials (27% - in green) and at exploring societal applications (27% - in pink-orange).

These statistics illustrate that Laserlab-Europe remains a true analytical research infrastructure devoted to fundamental science and its laser-based applications.

6 Users' profile

During the first 18 months of the project, 106 users have been received in the framework of the transnational access programme. Once taking into account users involved in several experiments, this corresponds to 99 individuals.

New users

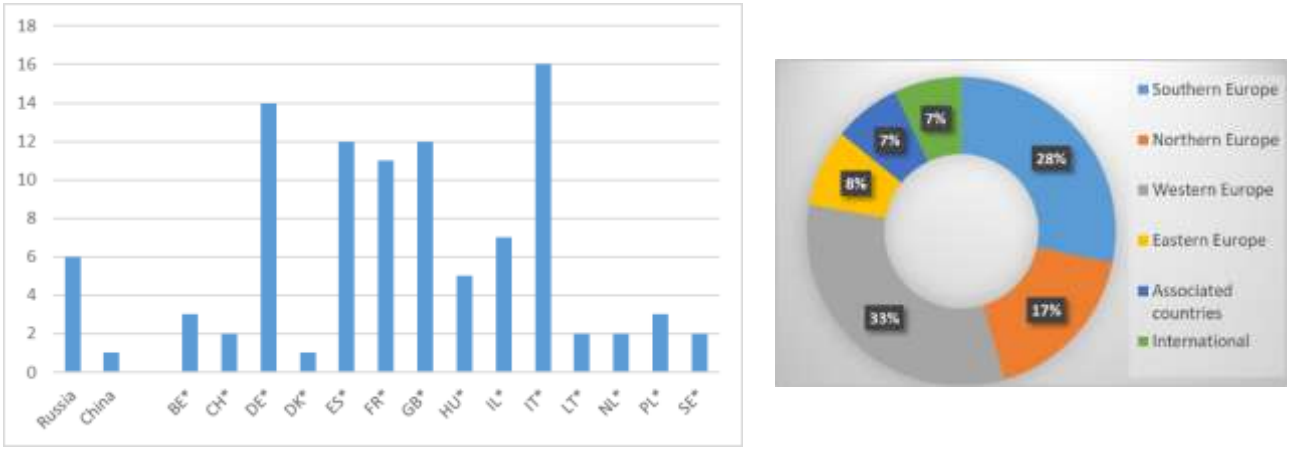
Among these 99 individuals, 55 are new users, i.e. persons who have not benefited of Laserlab-Europe's access activity during previous projects. The user community of Laserlab-Europe thus shows a high turnover thanks to Laserlab's capacity to attract new users.

Age of users

The average age of the users is 40 when all individuals are considered and 42 for the principal investigators. Young researchers (less than 37 at completion of the access project) represent more than half of the individual users (52%). They are mostly PhD students or post-docs. This large part of young users illustrates the role of Laserlab-Europe's access activity for the training of the future European research community.

Geographical distribution

The following figures display the geographical distribution of our users' home institutions.



Geographical distribution of our users' home institutions

So far, in in the present project, our users are from institutions located in 16 different countries. A large part of these institutions is located in Western Europe (33%) and Southern Europe (28%). Strong user communities are found in Italy, Germany, Spain, UK, and France (~65% of the overall user community).

The non-European (third country) individual users were from institutions located in Russia (6 users) and China (1 user).

Gender equality

Gender equality is a key issue for Laserlab-Europe. The call for proposals emphasises Laserlab-Europe's aim to strive for gender equality and explicitly encourages women to apply for access. Indicators, such as the percentage of female new users or female principal investigators, are regularly monitored.

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Since the start of the present project, female users represent 28% of the individual users (25% in LLE4), which is quite satisfactory considering the percentage of women in hard sciences at the Master level. This percentage is increasing up to 33% in the “young researchers” population (30% in LLE4) but is down to 27% (23% in LLE4) when only principal investigators are considered. All these figures are in progress when compared to LLE4 but are based on a limited number of persons (28 women scientists). Hopefully, this progression in gender equality will be confirmed during the next interim periods on a larger community of users.

7 User Meetings

Annual User Meetings are organised at the consortium level in order to bring together a significant number of users and potential users, facilitating and fostering their exchanges across different disciplines and with infrastructure operators. The meetings provide a unique opportunity (i) for users to present their scientific results and to give feedback on the Laserlab-Europe access programme via Round Table discussions, and (ii) for the access providers to present recent upgrades, new experimental set-ups or diagnostics. User Meetings are organised jointly by the Access Board and the User Representatives, each meeting being hosted by one of the access-providing facilities.

In view of the COVID-19 pandemic, and even though personal contacts are essential for successful user-facilities relations, the User Representatives, together with the Access Board, have agreed on an online User Meeting to take into account potential travel restrictions throughout 2021.

Laserlab-Europe User Meeting, 22-23 November 2021, online event

The Laserlab-Europe User Meeting 2021 took place in the afternoons of 22-23 November 2021 as online event. The event was organised by the Center of Laseres Pulsados (CLPU) with support from the Laserlab-Europe Office and the User Representatives.

The event opened with a welcome from the host representative Luca Volpe and a keynote talk of 45 minutes on both days. Group pictures have been taken on each day by the organisers.

On the first day, Pascal D'Oliveira, chair of the Laserlab-Europe Access Board, gave an overview of the transnational access activity of Laserlab-Europe.

The first keynote talk presented “The ultimate time scale in organic molecular opto-electronics, the attosecond – TOMATTO” project led by Fernando Martín (IMDEA Nanoscience and Universidad Autónoma de Madrid), Mauro Nisoli (Politecnico di Milano) and Nazario Martín (Universidad Complutense de Madrid), which has been awarded an ERC Synergy Grant in 2020.

The second keynote talk was given by Ingo Fischer (Institute for Physical and Theoretical Chemistry Würzburg) and focused on the latest results and future perspectives regarding the field of fs-time resolved photoelectron spectroscopy of reactive intermediates.

The keynote talks were followed by 12 user reports, distributed over the two days of the event. The talks on the first day focussed on “Material Sciences, Condensed Matter Physics & Related Applications”, and the second day addressed “Energy, Secondary Sources & Related Applications”. The users reported on results and highlights of their access campaigns performed within Laserlab-Europe’s transnational access activity. In addition, four representatives of new access providers in Laserlab-Europe V presented their facilities: Ulrich Schramm (Helmholtz-Zentrum Dresden-Rossendorf – HZDR, Germany), Martin Divoky (Division of High Power Lasers – HiLASE Centre, Czech Republic), Fabrizio Carbone (Lausanne Centre for Ultrafast Science – LACUS, Switzerland) and Luis Roso (Centro de láseres pulsados – CLPU, Spain). Each of them gave an introduction to the scientific focus of

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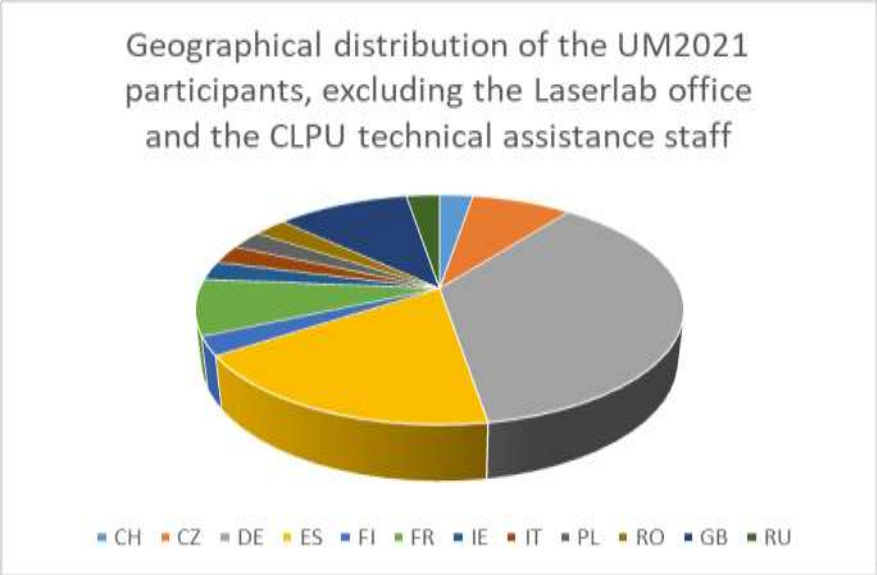
their respective facilities, the technical equipment of their laboratories and their offers for users that now are part of the Laserlab-Europe transnational access activity.

The first day of the meeting included also a round table session, where users exchanged with User Representatives and representatives of the facilities about their experience and needs. For instance, it was pointed out that second stays are very important to go deeper into a research topic (possibly combining in-person and remote access), and that remote access prevents efficient brainstorming, that would help defining continuation projects, and improvised setup modifications for better data acquisition or dealing with unexpected observations.

For participation in the User Meeting, presentations from young scientists who participated in Laserlab-Europe access projects and from female users had been encouraged. The event had on average 50 participants per day, among which 26% were women. The geographical distribution of the home institutions of the participants is shown in the graph below.



Geographical distribution of participant's home institutions

The announcement and programme of the meeting is available at
https://www.laserlab-europe.eu/events-1/laserlab-events/2021/user-meeting

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Agenda

Day 1 - Monday 22 November 2021		
Material Sciences, Condensed Matter Physics & Related Applications		
Session chair: Luca Volpe		
14:00		Welcome
14:15	Pascal D'Oliveira - CEA-LIDYL	The Laserlab-Europe Transnational Access Activity
14:35	Fernando Martin - Fundación Imdea Nanociencia, Mauro Nisoli - Politecnico di Milano, Nazario Martin Leon - Universidad Complutense de Madrid	Plenary Session: The ultimate time scale in organic molecular opto-electronics, the ATTOsecond
Users' reports - 1		
Session chair: Rosa Weigand		
15:20	Isabella Gierz - University of Regensburg	Project at CLF: Microscopic understanding of ultrafast charge transfer in van-der-Waals heterostructures
15:40	Alexandra Palla-Papavlu - INFLPR, Bucharest	Project at LP3: Heterostructures grown by laser ablation for high-power laser optics
16:00	Witold Trzeciakowski/ Artem Bercha - Institute of High Pressure Physics, Polish Academy of Sciences	Project at MBI: Optical transitions in InGaN quantum wells of varying thicknesses
16:20		Break
New Access providers - 1		
16:35	Ulrich Schramm	HZDR
16:45	Martin Divoky	HiLASE
Users' reports - 2		
16:55	Tim Schaefer - Georg August Universität, Göttingen	Project at ULF-FORTH: Detecting chirality in mixtures using nanosecond photoelectron circular dichroism
17:15	Kestutis Staliunas - Universitat Politècnica de Catalunya	Project at VULRC: Photonic crystals for intracavity spatial filtering in microlasers
17:35		Round Table - Users' Discussion
18:15		End of meeting - day 1

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Day 2 - Tuesday 23 November 2021		
Energy, Secondary Sources & Related Applications		
Session chair: Oldrich Renner		
14:00		Welcome
14:15	Ingo Fischer - Institute for Physical and Theoretical Chemistry Würzburg	fs-time resolved photoelectron spectroscopy of reactive intermediates
Users' reports - 3		
15:00	Yunyun Dai - Aalto University	Project at FSU/HIJ: Gate-tunable optical nonlinearity in two-dimensional materials
15:20	Thomas Campbell - University of Oxford	Project at GSI: Preliminary results of a diffusive ion acceleration experiment at GSI
15:40	Tobias Helk - Friedrich-Schiller-University Jena	Project at LOA: XUV Second Harmonic Generation with a seeded soft X-ray laser
16:00		Break
New Access providers - 2		
Session chair: Luca Volpe		
16:15	Luis Roso	CLPU
16:25	Fabrizio Carbone	LACUS
Users' reports - 4		
16:35	Daniele Margarone - Queen's University Belfast	Project at HiLASE: Proton-Boron Fusion studies with the 10-GW, kHz PERLA laser
16:55	Pablo Perez-Martin - Helmholtz-Zentrum Dresden-Rossendorf and Technical University Dresden	Project at PALS: Characterization of low-density rear-driven collisional plasma jets from thin foils
17:15	Frederik Unger - University of Tuebingen	Project at CUSBO/POLIMI: Investigating the role of vibronic coupling for singlet fission in pentacene using femtosecond transient absorption spectroscopy
17:35	Dmitry Spassky - Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University	Project at CELIA: Luminescence properties of GAGG:Ce scintillator under intense laser irradiation
17:55		Closing statements
18:15		End of meeting

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