VIPERLAB

FULLY CONNECTED **VI**RTUAL AND **P**HYSICAL P**ER**OVSKITE PHOTOVOLTAICS **LAB**

D3.4

VIRTUAL ACCESS to VIPERLAB's VA INFRASTRUCTURES - TUTORIALS

DELIVERABLE REPORT

Version: 1

Date: 08.03.2022

FULLY CONNECTED VIRTUAL AND PHISICAL PEROVSKITE PHOTOVOLTAICS LAB VIPERLAB

DELIVERABLE

D3.4 VIRTUAL ACCESS TO VIPERLAB'S VA INFRASTRUCTURES - TUTORIALS

Project References

Project Acronym	VIPERLAB
Project Title	Fully connected **vi**rtual and physical **per**ovskite photovoltaics **lab**
Project Coordinator	Helmholtz-Zentrum Berlin
Project Start and Duration	1st June 2021, 42 months

Deliverable References

Deliverable No	D3.4
Type	Websites, patents filling, etc.
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Event date	8th February 2022
Deliverable Report date	8th March 2022

Event/document history

Version	Status	Date	Beneficiary	Author
1	Definition of the 1st event agenda	25/01/2022	ENEA	S. Giusepponi / F. Roca ENEA
2	Finalization of the agenda and event date. Webinar platform and event page set-up	31/01/2022	ENEA	S. Giusepponi / F. Roca ENEA
3	Launch of the event by media	31/01/2022	ENEA	S. Giusepponi / F. Roca ENEA
4	Online event	08/02/2022	WP3 partners	Event's speaker
5	Post event validation of slides and videos and their publication. Launch by media	12/02/2022	WP3 partners	Event's speaker
6	Deliverable report including statistics	07/03/2022	ENEA/HZB	S. Giusepponi / F. Roca ENEA N.Matciuc HZB
7	Deliverable Report revision & submission	09/03/2022	WP3 leader / Coord.	H. Jens, FZJ / N. Maticiuc

DISCLAIMER

‘Fully connected virtual and physical perovskite photovoltaics lab' VIPERLAB is a Collaborative Project funded by the European Commission under Horizon 2020. Contract: 101006715, Start date of Contract: 01/06/2021; Duration: 42 months.

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°101006715

EXECUTIVE SUMMARY

The D3.4 report provides an overview and content description of the online VIPERLAB workshop "*Databases, modelling and high-performance computing for perovskite PV*" organized by ENEA, CENER, HZB, and FZJ on the 8th of February 2022.

The aim of the webinar is to provide details on virtual access to VIPERLAB's Virtual Access Infrastructures (VAs) and their services, in terms also of tutorials.

The link to the event webpage as well as the links to the publicly shared tutorials and slides are listed. The report also reports information about the development of procedures and tools to disseminate the event in its various phases: both in the pre-event launch and in the post-event to effectively promote the access of potential web users to videos and slides. of the event

1. INTRODUCTION

To consolidate the communication and collaboration in the EU perovskite-Si field, the VIPERLAB consortium opens the doors of its infrastructures to academia and industry members aiming at bringing the perovskite-based technology to the EU market.

By now VIPERLAB managed to create several web platforms such as: VIPERLAB webpage (https://www.viperlab.eu/) containing the main project information, VIPERLAB Knowledge Exchange Platform (https://www.viperlab-kep.eu/infrastructure.asp) containing information about the infrastructures, experts and educational content, VIPERLAB-GATE for proposal submission, and VIPERLAB-VAPo platform (http://www.viperlab-vapo.eu/home.php) that includes the access to the virtual infrastructures of the project, simulation tools and data repositories.

In the frame of *Task VA 1.2 "Research Infrastructures for virtual Access"* the four VIPERLAB virtual infrastructures (HZB – **Perovskite Database**, CENER - **MODELAB Modelling Capacity**, FZJ – **Amanda**, ENEA - **CRESCO Computing Lab**) were introduced to a large audience in the frame of an online workshop organized by ENEA on 8th of February 2022 by using the developed webinar platform of the Viperlab Knowledge exchange Platform. Within this workshop, two activities of the *Task VA 1.2* were completed:

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- Creation and publication of tutorials for virtual access to users, including the ability to perform and promote remote experiments in VIPERLAB's virtual infrastructures.
- Bringing together "inexperienced" users with experienced tutors at the VAs to facilitate efficient use of the infrastructures.

2. AIM OF THE WORKSHOP TUTORIALS

The Task VA 1.2 "Research Infrastructures for virtual Access" of WP3-VA1 "Virtual access to database infrastructure and simulation and data analysis tools", help to set up a uniform and easy access to the virtual infrastructures and to further develop them by tailoring them on the needs of the users from industry/SME, academia, and research institutions. One of the aims of "Databases, modelling and high-performance computing for perovskite PV" workshop was to firstly attract the attention of more users to the VIPERLAB's virtual infrastructures, to introduce them to the scientists dealing with these facilities, and finally to instruct them in a friendly online atmosphere about the scientifically relevant use of these virtual infrastructures like databases, modelling, computing, automated labs.

As a result of this workshop, we expect that more users will be attracted in VIPERLAB virtual infrastructures by contacting the presented facilities and apply their project ideas to access.

This workshop has also been the first public event proposed by Viperlab. Therefore, particular emphasis was given to its organization as an opportunity to create interest in the Viperlab project. And this also involved the development of the most efficient communication channels through mailing lists and post via social media and by using effective and captivating formats (circular emails, posts via social media, etc.) which will also be the basis for the other future events that will be organized by Viperlab.

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3. ORGANISATION OF THE ONLINE WORKSHOP

The first step was the definition of the agenda which was based on the following structure

3.1. AGENDA CONTENT

Part I: Introduction

- A short introduction to the project (HZB) 5 min
- A short introduction to HPC (ENEA) 10-15min
- A short introduction to Meta-databases and structuring of the data. Definition of a common ontology according to EMMO (FZJ-Hi ERN) 10-15min
- A brief introduction to VAPo-Virtual Access Point Platform (CENER) 5 min

Part II: Viperlab Virtual Infrastructures

- A short introduction for each VA infrastructure (architectures, available resources, procedure to access, team, etc) 10-15min/each
- Q&A and Conclusion (10-15min)

3.2. AGENDA Web page

A dedicated workshop webpage was prepared by KEP, For the registration and more details about the event a webpage was created on VIPERLAB's Knowledge Exchange Platform on the following link: https://www.viperlab-kep.eu/workshop.asp?i=5 where the web user could find (Fig. 1):

- A short description of the event and its agenda
- the short abstract for each speech
- contact of the event organizers
- the profiles of the invited speakers.

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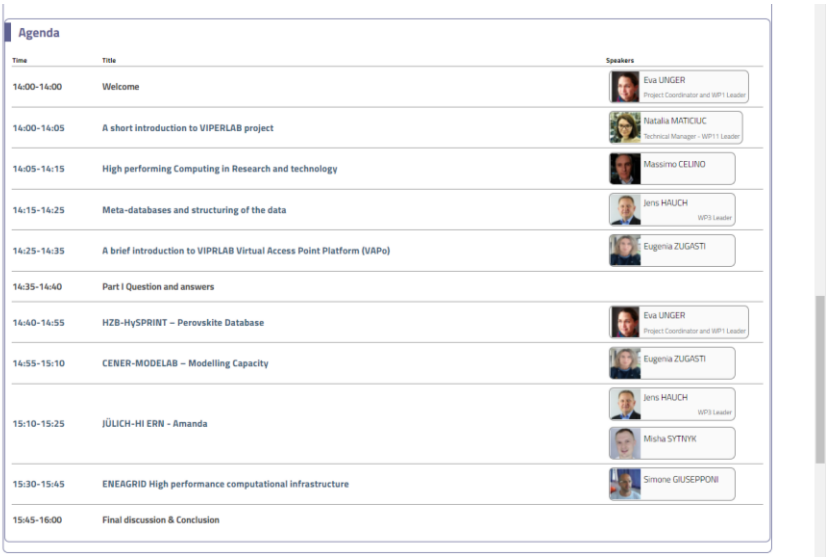

Figure 1. Screen shot from the event webpage with the workshop agenda and speakers.

A click on the speaker's photo gives the access to his/her short bio CV and contact links (Fig. 2). One example is the profile of N. Maticiuc: https://www.viperlab-kep.eu/expertise.asp?i=11.

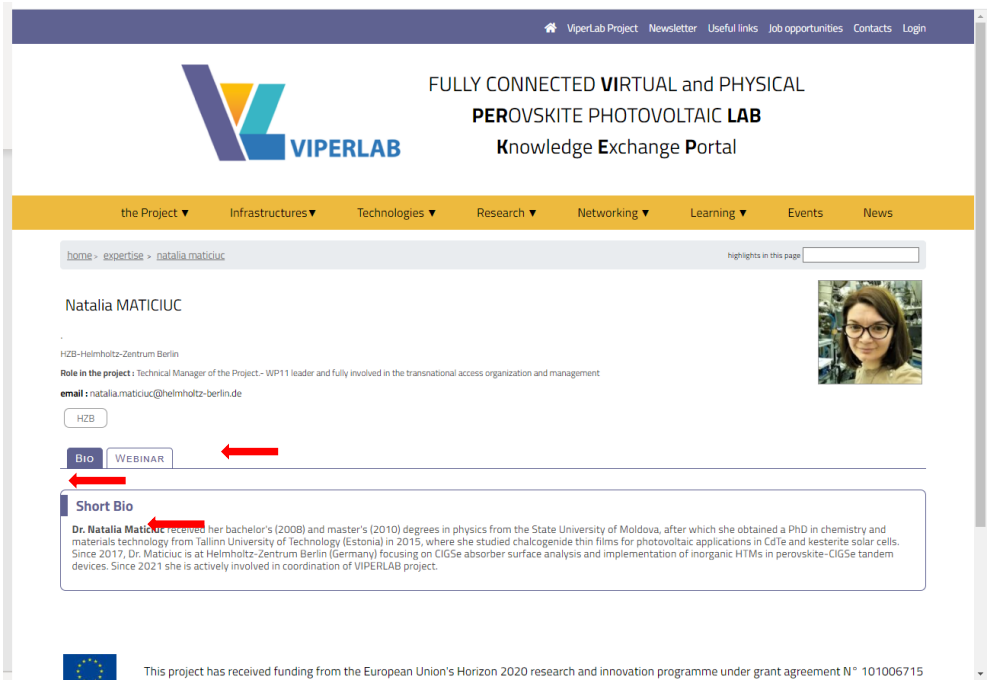

Figure 2. Screen shot from the webpage of one speaker where her short CV, affiliation (HZB button) and contact email can be found.

The event's web page will be the base for all the other upcoming events that Viperlab project will organize. For this reason, ENEA spent time to improve the visual impact and the effectiveness of the communication.

3.3. PRE-EVENT ANNOUNCEMENT

By considering the limited available time to the event a very deep communication campaign was launched by ENEA by the following channels:

- announcement by a circular email and by using a mailing list with around 2600 email addresses (researchers, students, professionals)
- A post by VIPERLAB's LinkedIn channel inviting the interested participants to register to the event that at the event time had around 2300 followers. Now the VIPERLAB's LinkedIn channel can count on more than 2800 followers
- A 1to1 messaging by LinkedIn by selecting a specific short list of LinkedIn followers. Around 50 followers were selected by the key words: modelling, HPC, databases

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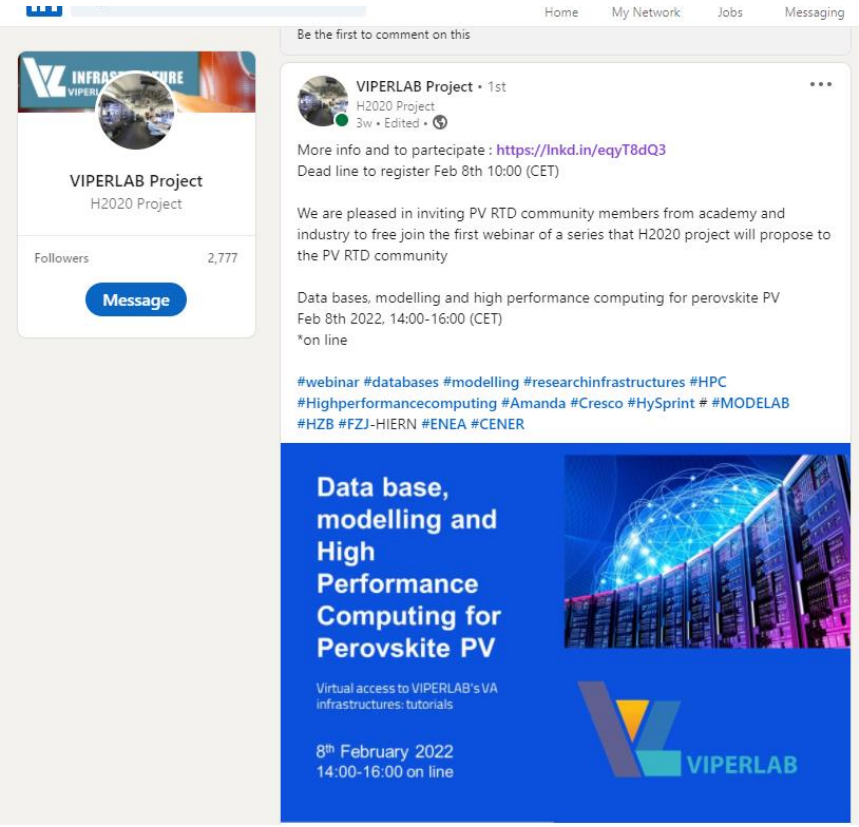

Figure 3. Screen shot from the announcement published on the VIPERLAB's LinkedIn channel: https://www.linkedin.com/in/viperlab-project/recent-activity/shares/.

4. WORKSHOP: LIVE PARTICIPATION

The workshop was organized online using the ENEA Adobe Connect Corporate platform. We have received 77 early registrations for the event and 47 participants joined the event live and actively interacted with the speakers.

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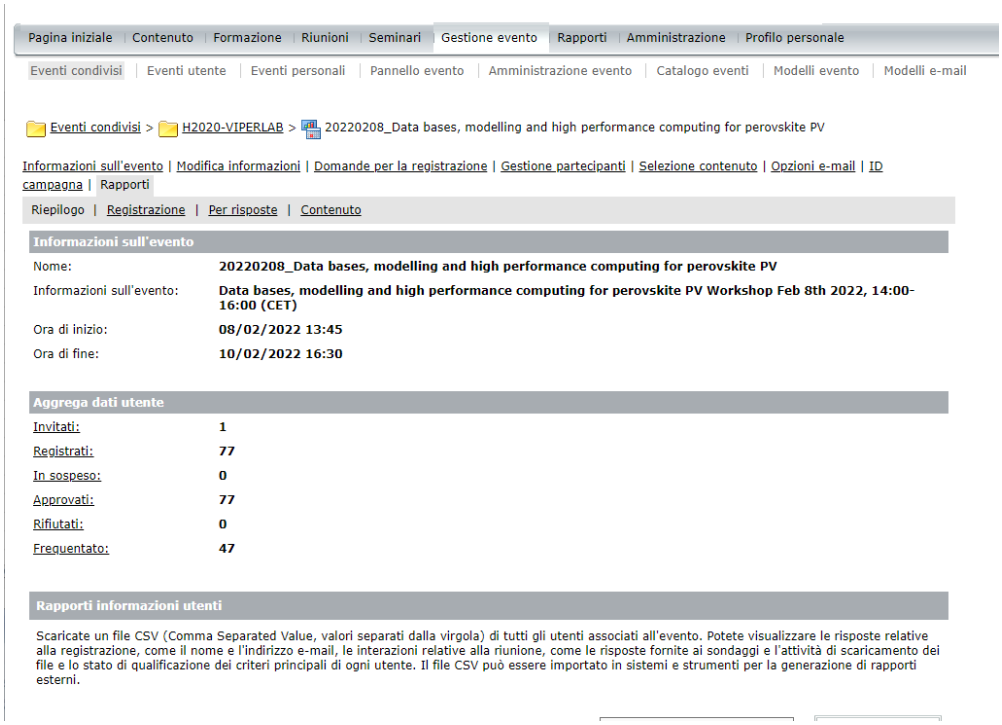

Figure 4. Adobe Connect screen shot of the *live participation.*

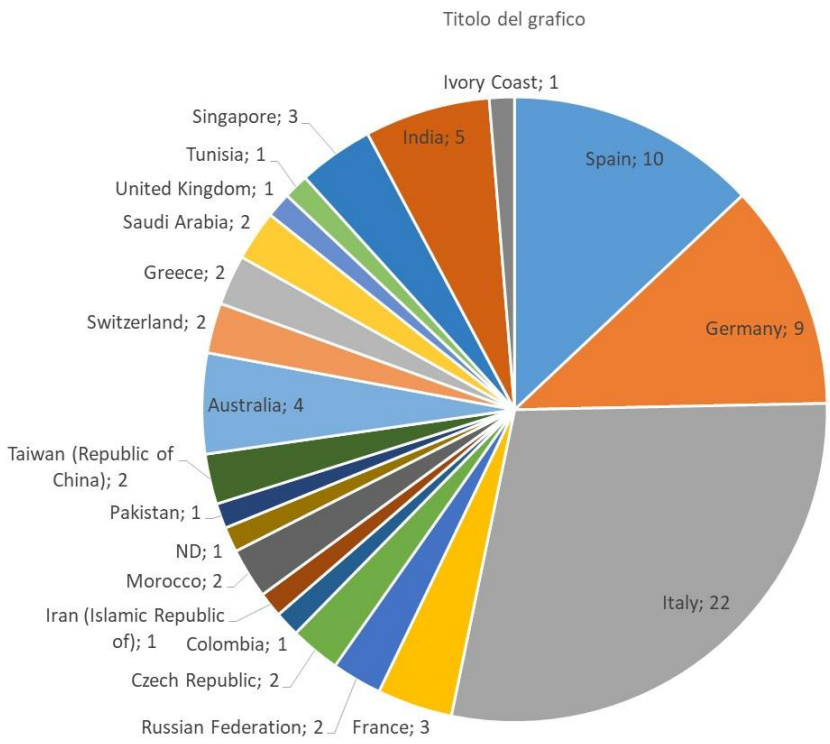

Figure 5. Diagram of the early registration by country.

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Table I: Early registration by role	
Not defined	17
Event organizer	1
Operations Manager	1
Consultant	1
Geologist	1
Mechanical Engineer	2
Environmental Engineer	2
Assistant Professor	1
PhD Student	2
Research Manager	3
Technology Manager	1
Another role	4
Research Engineer	5
Research Laboratory / Technical unit Responsible	3
Test Engineer	2
Instrument Engineer	1
Research Scientist	4
Service Engineer	1
Research Programme Manager	2
Junior Technology Advisor	1
Technology Analysis Consultant	1
Junior Risk/Stakeholder Consultant	1
Electrical Design / Installation Engineer	2
Senior Formation and Training Manager	1
Technical Consultant	2
Technical Officer	1
Research Project Manager	1
Post Doc / Junior Scientist	1
Senior Technology Advisor	1
Research Institute / Faculty / Department Director	1
Senior Business Analyst	1
Senior Scientist / Team Leader	2
Marketing and Communication Manager	1
Junior Business Analyst	1
Scientific / Technical Project Leader	1
Engineer / Professional Apprentice	1
Role	1
Researcher	1
Full/associated professor	1
TOTAL	**77**

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As can be noted by Fig. 5, the wider participation comes from Italy, Spain, Germany, but we got participation form also overseas countries (Australia, India, Singapore). Concerning the categories of participants, it has been very wide (Table 1) covering different areas of science and application. The participation of industries has been limited to few engineer/professional.

4. POST-EVENT DISSEMINATION AND IMPACT

All the presentations were recorded with the agreed permission of the speakers to propose the post-event access. On the event webpage the user can access the content by clicking on the speaker or presentation (see Fig. 7).

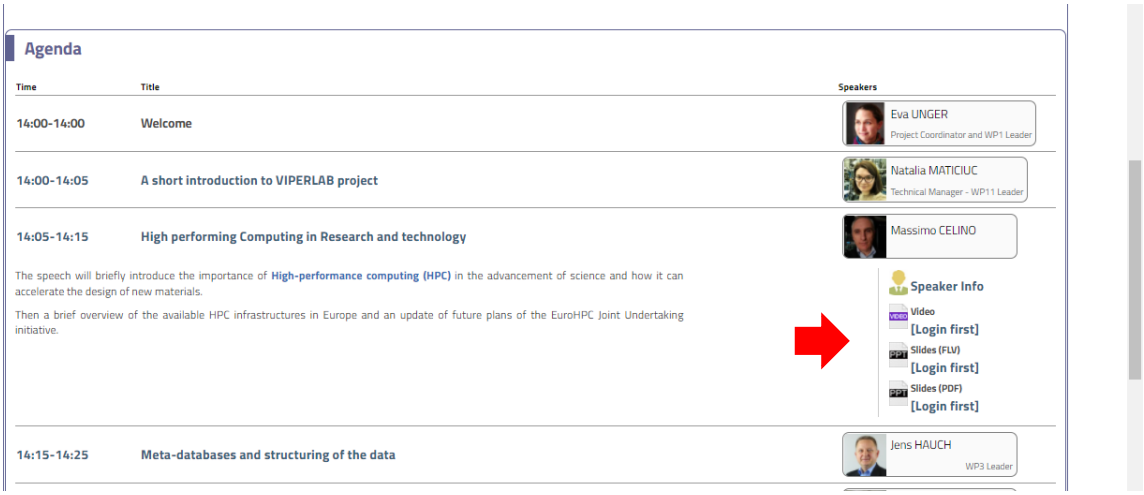

Figure 6. Screen shot from the workshop webpage where the visitor can access the listed content from the speaker: Speaker Info, Video and Slides in FLV and Pdf formats.

Access to the event outputs (video and slides) was once again adequately disseminated through a circular email to 2500 addresses and a post via LinkedIn (fig. 7).

The platform already offers the opportunity to define the date on which it will automatically move to an access offered only to registered users (this always means public access but with identified web users) to fully open public access without identifying the web user (Fig.8).

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By limiting the full public access for at least 2-3 weeks offers more chances to get registered users and to generate traffic to KEP/VAPo/PWS platforms. This offers a great opportunity to evaluate deeper statistics about web users accessing by country, category of organization, role, etc. and the marketing impact of communication & dissemination campaigns.

Furthermore, we must be aware that there are also organizations that download pdf files that were originally offered for free and then sell slide access services for a fee. Therefore, a totally public access on the one hand can increase the number of beneficiaries, but on the other hand it can pose a threat that the products outputs can end up in the wrong hands without some form of verification and control, which is not meant to be a limitation to the continual public access, but open access by identifying the beneficiary. This is the strategy that is increasingly spreading to mitigate the unauthorized use of the material available on the web (videos, slides, photos, etc).

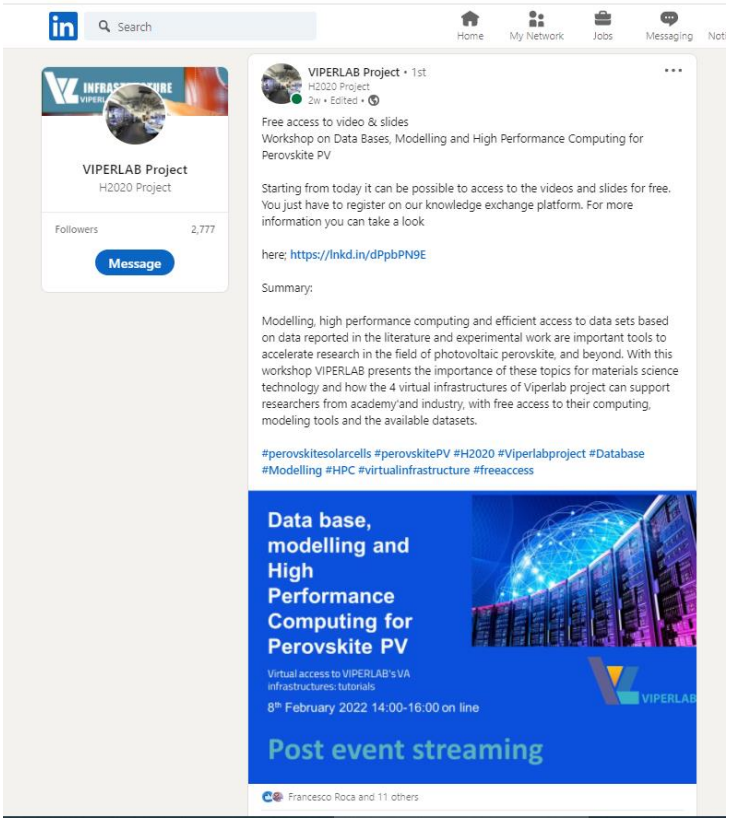

Figure 8. Screen shot from the LinkedIn channel of VIPERLAB of the post-event announcement.

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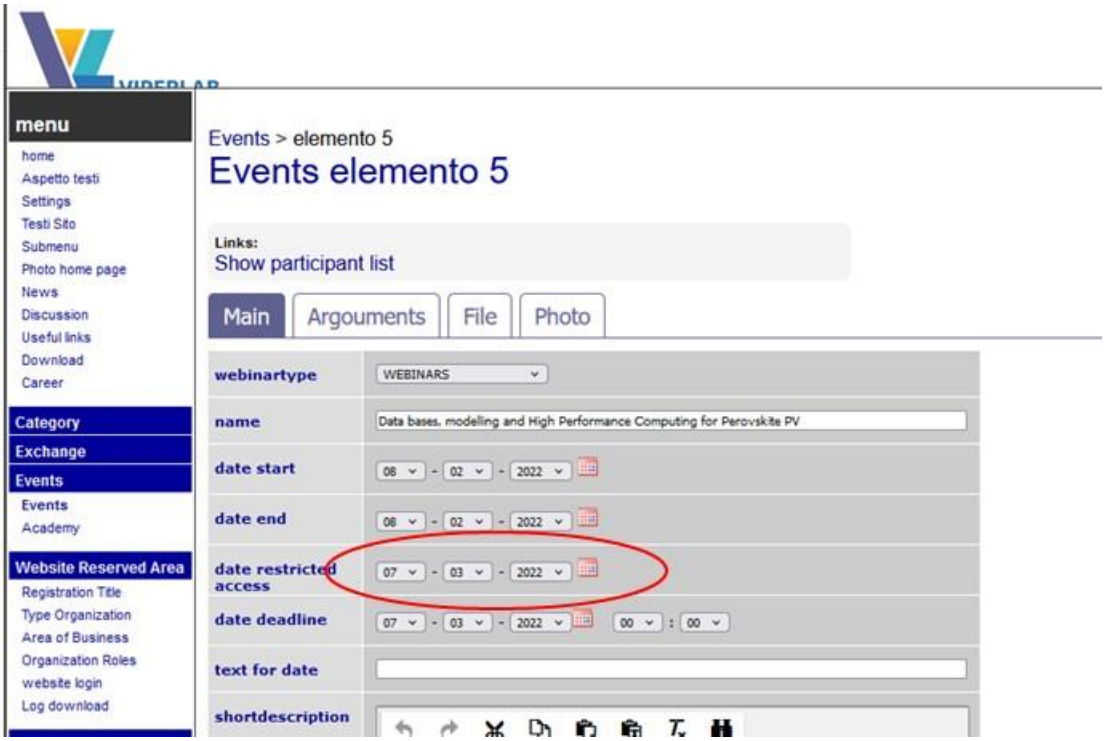

Figure 9. Screen shot from the Content Management System Event web page. It can be set the date start/date end for each event, date deadline to register, and the date to end the restricted access.

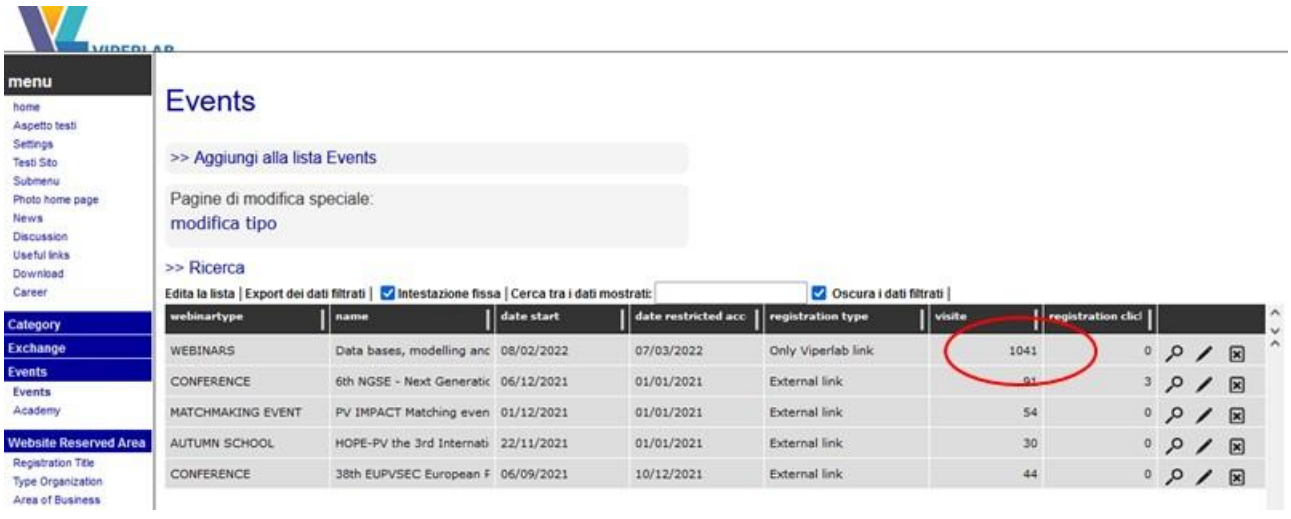

Figure 10. Screen shot from the Content Management System Event web page. 1041 views of the event web page as on February 7th, 2022.

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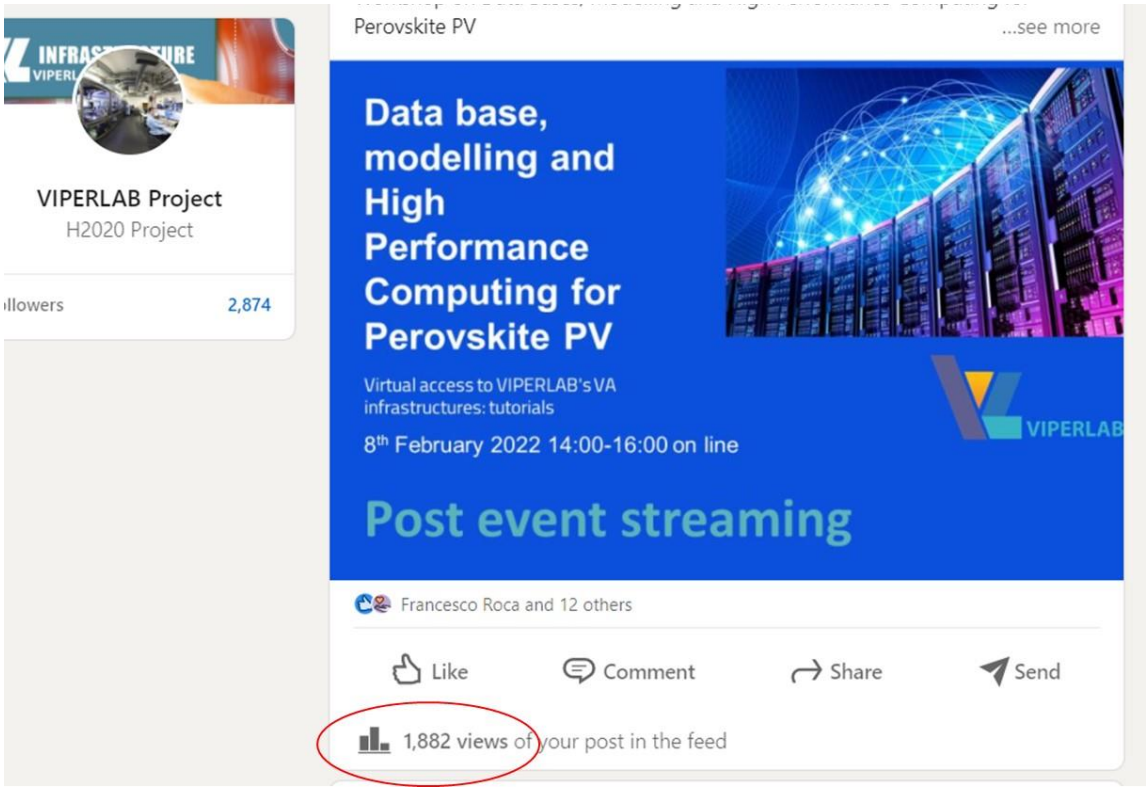

Figure 11. Screen shot from the LinkedIn post event announcement. 1882 views of our post in the feed as on February 7th, 2022.

5. CONCLUSION AND FINAL REMARKS

- The event presented an overview about the Viperlab project and its four virtual infrastructures, as well as their potential offered to perform materials processing and device modelling, data retrieval or design of experiments, and how to access the available tools and data bases.
- Notwithstanding the limited available time to promote the event, an adequate and efficient C&D campaign was put on the ground.
- The webinar was the first online event of the VIPERLAB project, in which presenters of different institutions of the consortium, describe and promote their services and tools to an external audience from industry/SME, academia and research institutions. This has permitted to set up procedures, communication and dissemination campaigns, the evaluation of their positive and negative aspects, which is beneficial for all the upcoming project events.

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- As a result of the organized workshop on 8th of February, several students and researchers have contacted the Perovskite Database, the CRESCO computing lab and the MODELAB facilities from HZB, ENEA, and CENER respectively. Moreover, the communication with the interested researchers resulted in two (out of 14) submitted proposals targeting the virtual infrastructures from ENEA and CENER.

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