This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

# X-PIC – Deliverable

# Communication impact, exploitation and dissemination activities - intermediate report.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 964588

| | |
|---|---|
| Deliverable number: | D4.5 |
| Due date: | 30/09/2023 |
| Nature[1]: | R |
| Dissemination level[2]: | PU |
| Work Package: | WP4 |
| Lead Beneficiary: | POLIMI |
| Contributing | CNR, INCDTIM, C5 |

[1] R = Report, P = Prototype, D = Demonstrator, ORDP = Open Research Data Pilot, O = Other, W = Websites, patents filling, etc.

[2] CO = Confidential, only for members of the consortium (including the Commission Services) PP = Restricted to other programme participants (including the Commission Services)

PU = Public

RE = Restricted to a group specified by the consortium (including the Commission Services)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

| Version | Date | Description |
|---|---|---|
| Version 1 | 25/09/2023 | First version |
| Version 2 | 14/10/2023 | Updated and final version |
| | | |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

## Sommario

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

# 1. Introduction

This report regards the communication impact, exploitation and dissemination activities realized between April 1st 2022 and September 30th 2023 and it's an update of the dissemination and exploitation plan submitted in March 2022.

The strategy at the base of the communication impact, exploitation and dissemination activities plan has not changed and we confirm the expected impact on technology and society and on future leadership, the needs solved thanks to the results of the project and the outputs created.

# 2. Repositories, achieved stakeholders, used channels

The following data are available on the X-PIC website at https://www.x-pic.eu/project/deliverables/

| **DATA** | **SHORT DESCRIPTIONS** |
|---|---|
| X-PIC Deliverable D4.1 | FIRST VERSION OF THE PROJECT WEBSITE - Website and project logo |
| X-PIC Deliverable D4.2 | Data Management Plan |
| X-PIC Deliverable D4.3 | 1st report about the communication impact, the exploitation and the dissemination activities. |

The X-PIC consortium has identified these target groups and reached the following entities/people:

| **TARGET GROUPS** | **DESCRIPTIONS** |
|---|---|
| Scientific Community (Higher Education, Research) | ***Physics & Metrology***<br>– dr. Akira Ozawa, Max-Planck- Institut für Quantenoptik (Germany)<br><br>***Photonics (Spectroscopy, Lasers)***<br>- prof. Francesca Calegari, DESY and Hamburg University (Germany) |

| | |
|---|---|
| Industry | **Laser sources development**<br>- dr. Aivaras Urniežius, LightConversion (Lithuania)<br><br>**Microfluidics**<br>- dr. Guillaume Laffite, Klearia (France)<br><br>**Microoptics from the IR to the X-Rays**<br>- dr. Adam Kubec, Xrnanotech (Switzerland) |
| General Public | Broad audience of photonics and physics enthusiasts, met during outreach activities (see Section 3). |

# 3. Outreach activities

## 3.1 Outreach activities already realized

- POLIMI and CNR participated to the national yearly event **Italian Quantum Weeks** hold in Milan (Italy) from April 5$^{th}$ -12$^{th}$ 2022 with outreach activities on X-PIC project. This event was promoted by Italian engineers, disseminators and educators on the occasion of the first World Quantum Day (on 14$^{th}$ April, 2022) with the aim of raising awareness of the quantum world and the opportunities that the quantum revolution is about to offer (see Figure n.1). The number of persons visiting the event was estimated to be 600, 360 of which were high-school students.

- CNR and Polimi, in collaboration with OPTICA EPS SPIE Student Chapters of Politecnico di Milano participated to the "Festival della Scienza" di Genova (Italy) from October 20$^{th}$ to November 1$^{st}$ 2022. The Genoa Science festival is a reference point for science dissemination in Italy and it has been a perfect opportunity to introduce X-PIC project to general audience and to reach scientist from other fields that might be interested in X-PIC technology. Moreover 2022 was the Year of Glass, which is the material where the X-PIC platform is fabricated thus the title of the presentation regarding X-PIC project was "*Luce e vetro una storia millenaria: dalla diffrazione alle tecniche laser*" – "*Light and glass a thousand year story: from diffraction to laser techniques*" (see Figure n.2). The number of persons visiting the stand and following the X-PIC description was estimated in 2056.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

- POLIMI and CNR together with the X-PIC partners organized the first workshop entirely dedicated to X-PIC for the of Promotion of an "ecosystem" of scientists, enterprises, and users around EUV-SXR integrated photonics. The workshop took place in Milan on March 23rd 2023. Multi-disciplinary speakers from both the academic and industrial worlds participated to the workshop with the aim to create a large community around the technology, open novel collaboration and exploitation routes and pave the way to future large conferences in this novel field (see Figures n.3a-c and 4). The number of attendees was 25, in line with the estimated number foreseen in the project.

# 4. Communication, dissemination and exploitation activities already implemented

## 4.1 Communication activities

Social media communications on TWITTER, FACEBOOK, LINKEDIN and on the project website

| | **Media** |
|---|---|
| TWITTER | CNR participation to CLEO Europe 2023<br>Link: https://twitter.com/fastgroup_ifn/status/1674334876785360899/photo/1<br>Type of account: FastGroup, CNR<br>Number of Interactions: 15 likes<br>See Figure 5<br><br>Pasquale Barbato price at conference LMPA 2023 (Japan)<br>Link: https://x.com/fastgroup_ifn/status/1699702593411256618?s=20<br>Type of account: FastGroup, CNR<br>Number of Interactions: 11 likes<br>See Figure 8 |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

| | |
|---|---|
| INSTAGRAM | CNR participation to ECIO 2022<br>Link: https://www.instagram.com/p/CdVI67UMmBn/<br>Type of account: FastGroup, CNR<br>Number of Interactions: 30 likes<br>See Figure 6<br><br>CNR participation to FESTIVAL DELLA SCIENZA<br>Link:<br>https://www.instagram.com/p/CkVzHlxL4uo/?igshid=NjZiM2M3MzIxNA==<br>Type of account: FastGroup, CNR<br>umber of Interactions: 32 likes<br>See Figure 7 |
| FACEBOOK | Link:<br>https://www.facebook.com/fisipolimi/posts/pfbid02UE7o6iFFdEwNUoZRZS3Jy1fzbKqEjREfoDyjAikU4YqzuuY3UZSyuiJAVxTsVcRsl<br>Type of account: Fisica – Politecnico di Milano<br>Number of Interactions: 2 likes *See figure n. 3c* |
| LINKEDIN | Link:<br>https://www.linkedin.com/feed/update/urn:li:activity:7044319059412168704<br>Type of account: Fisica – Politecnico di Milano<br>Number of interactions: views, 11 reactions. *See figure n. 4* |
| Project Website | An X-PIC publication on the APL Photonics journal cover page<br>Link:<br>https://www.x-pic.eu/articolo-in-copertina-di-apl-photonics/<br>See figure n. 9 |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

## 4.2 Dissemination activities

| **Publications** | |
|---|---|
| APL Photonics **7**, 110801 (2022) | Title of publication: "Microfluidic devices for quasi-phase-matching in high-order harmonic generation" by A.G. Ciriolo et al.<br>DOI: https://doi.org/10.1063/5.0118199<br>Open access repository link: https://re.public.polimi.it/handle/11311/1223886 |
| Opt. Mater. Express **12**, 3930-3945 (2022) | Title of publication: "Advanced photonic and optofluidic devices fabricated in glass via femtosecond laser micromachining", Piacentini et al.<br>DOI: https://doi.org/10.1364/OME.463715<br>Gold Open access – also available at https://re.public.polimi.it/handle/11311/1231324 |

| **Conferences** | |
|---|---|
| European Conference on Integrated Optics, Milan, 4-6 may 2022,<br>**Oral presentation** | Pasquale Barbato, *Femtosecond Laser Micromachining of Integrated Hollow-core Waveguides for High-order Harmonic Generation and XUV Filtering* |
| Congresso Nazionale Società Italiana di Fisica, Milan, 12-16 sept 2022,<br>**Oral presentation** | Pasquale Barbato, *Femtosecond laser micromachining of integrated devices for XUV generation* |
| ATTO VIII - Attosecond Science and Technology Conference, 11-15 July 2022 - Orlando, USA | Caterina Vozzi, *HHG in chip for Attosecond soft-X spectroscopy* |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

| | |
|---|---|
| **Invited talk** | |
| International Congress on Applications of Lasers & Electro-Optics (ICALEO), 17-20 October 2022, Orlando (USA).<br><br>**Invited talk** | Anna Gabriella Ciriolo, *Coherent XUV Generation and Manipulation Inside Microfluidic Devices Fabricated by Femtosecond Laser Micromachining* |
| 2023 Conference on Lasers and Electro-Optics/Europe – European Quantum Electronics Virtual Conferences (CLEO®/Europe-EQEC 2023), 26 – 30 June 2023, Munich, Germany<br>**Oral presentation** | Rebeca Martínez Vázquez, Integrated glass chips for XUV radiation generation and manipulation |
| 9th International Conference on Attosecond Science and Technology, 9-14 July 2023, Korea<br><br>**n. 2 posters** | Valer Tosa, Anna Gabriella Ciriolo, Rebeca Martinez Vazquez, Alessio Nistico, and Salvatore Stagira; *Modeling EUV and SXR generated by mid-IR femtosecond pulses in hollow core fibers*<br><br>Katalin Kovacs and Valer Tosa; *Three ways to select from two attosecond pulses* |
| 7th International Symposium on Intense Field, Short Wavelength Atomic and Molecular Processes, 21-23 July 2023, St. Sauveur, Québéc, Canada<br>**Invited talk** | Caterina Vozzi, *High-order harmonic generation for the investigation of ultrafast dynamics in semiconductors: attosecond soft-X spectroscopy and HHG in solids* |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

| | |
|---|---|
| IX International School and Conference on Photonics PHOTONICA2023, 28 August-01 September 2023 Belgrade, Serbia<br>**Invited talk** | Caterina Vozzi, *Development of table-top ultrafast soft-X spectroscopy for material science* |
| LMPA, Takayama (Japan) 4-7 Settembre 2023<br>**Poster** | Pasquale Barbato, *Sub-micrometric hollow channels in fused silica by femtosecond laser nanomachining* |
| MNE - 49th international conference on Micro and Nano Engineering; 25-28 September 2023, Berlin (Germany).<br>**Oral presentation** | Sonia Freddi, *Structural and morphological study on a-Ge based nanostructures: dewetting from flat to patterned films* |
| 14th International Conference *Processes in Isotopes and Molecules* (PIM 2023), Cluj-Napoca in 19 – 22 September 2023. Romania<br>**Plenary Lecture** | Rebeca Martínez Vázquez, *Femtosecond Laser Micromachining for Lab on a Chip Applications* |
| 14th International Conference *Processes in Isotopes and Molecules* (PIM 2023), Cluj-Napoca in 19 – 22 September 2023. Romania<br>**Poster** | Valer Tosa, Anna Gabriella Ciriolo, Rebeca Martinez Vazquez, and Salvatore Stagira; *High order harmonic generation in modulated waveguides* |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

## 4.3 Exploitation activities

**Project exploitation activities aimed at multidisciplinary scientific communities**

An online meeting with the Scientific Advisory Board (SAB) took place on September 14th, 2023 (see Figure 10).

During this meeting the project partners described the achievements obtained after the first two years of the project. The SAB has not yet provided a written report about the project activities, however few technical and some general advises were informally told to the project partner and will be considered during the remaining part of the project.

# 5. Project Internal Communication

The internal communication is being carried on by means of short and timely internal meetings within each research Unit involving all the members of the local research team at work on the project, or part of it, depending on the specific activity to be discussed.

From April 2022 to September 2023 we had n. 10 internal meetings, as detailed below:

- Internal meetings among POLIMI, CNR, INCDTIM and C5 regarding the project evolution: 06/05/2022, 21/12/2022; attendees S. Stagira, A. Frezzotti, R. Martínez Vázquez, V. Tosa, Philipp Merkl, Robert Riedel.
- Internal meetings among POLIMI, CNR and INCDTIM regarding XUV waveguiding: 21/06/2022, 09/09/2022 and 25/01/2023; attendees S. Stagira, R. Martínez Vázquez, V. Tosa, P. Barbato, A. G. Ciriolo.
- Internal meetings between CNR and POLIMI regarding HHG chip for high pressures: 12/07/2022, 04/10/2022, 13/12/2022 and 01/02/2023; attendees R. Martínez Vázquez, A. Frezzotti, A. G. Ciriolo, A. Nisticò.
- Internal meeting between POLIMI and INCDTIM about the modelling of laser-chip coupling for HHG: 04/08/2023; attendees S. Stagira and V. Tosa.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

# Attachment n.1

## Italian Quantum Weeks

Posted on April 5, 2022 by Salvatore


X-PIC supporta la prima edizione Milanese dell'Italian Quantum Weeks che si svolgerà dal 5 al 12 Aprile 2022 al Politecnico di Milano con la partecipazione di CNR – IFN Istituto di Fotonica e Nanotecnologie, Università statale di Milano e Optica, EPS e SPIE Student Chapters Milano

Per maggiori informazioni e iscrizione ai seminari: www.eventi.polimi.it/events/mostra-dire-lindicibile-la-sovrapposizione-quantistica

Evento Nazionale: www.quantumweeks.it

X-PIC supports the first edition in Milano of the Italian Quantum Weeks initiative that will took place from 5th to 12th April 2022 in Politecnico di Milano with the contribution from CNR – IFN Istituto di Fotonica e Nanotecnologie, Università statale di Milano and Optica, EPS e SPIE Student Chapters Milano

For more details and for the registration to the seminars please have a look at: www.eventi.polimi.it/events/mostra-dire-lindicibile-la-sovrapposizione-quantistica

National event: www.quantumweeks.it

*Figure 1 Outreach activities during the Italian Quantum Week*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

## Festival della Scienza – Luce e vetro una storia millenaria

Posted on October 18, 2022 by Salvatore


Il progetto X-PIC (in collaborazione con il OPTICA EPS SPIE Student Chapters of Politecnico di Milano) partecipa al Festival della Scienza di Genova con il laboratorio interattivo dal titolo "Luce e vetro una storia millenaria: dalla diffrazione alle tecniche laser" per mostrare con il gioco come la luce e il vetro interagiscono e si influenzano a vicenda.

**Quando:** Dal 20 Ottobre al 1 Novembre 2022

**Dove**: Piazza delle Feste – Ponte Embriaco – Area Porto Antico – Genova

The X-PIC project (in collaboration with the OPTICA EPS SPIE Student Chapters of Politecnico di Milano) contributes to the Festival della Scienza in Genova with the interacting laboratory entitled "Luce e vetro una storia millenaria: dalla diffrazione alle tecniche laser" to show through games how light and glass interact and influence each other.

**When:** October 20th to November 1st 2022

**Where**: Piazza delle Feste – Ponte Embriaco – Area Porto Antico – Genova

*Figure 2 Outreach activities during Festival della Scienza*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

POLITECNICO MILANO 1863

# 1st Workshop of the X-PIC project

## 23rd March 2023, Milan

### Room Pedeferri (bulding 6) Campus Leonardo – Politecnico di Milano

| | |
|---|---|
| 09:00-09:30 | **Welcome & Registration** |
| 09:30-10:00 | The X-PIC project: goals and vision (**Salvatore Stagira,** Politecnico di Milano) |
| 10:00-10:30 | On chip few-cycle UV pulse generation, applications and outlooks (**Francesca Calegari,** DESY and Hamburg University) |
| 10:30-11:00 | Simplyfing the EUV Transient grating trough integrated devices (**Riccardo Mincigrucci,** FERMI) |
| 11:00-11:30 | **Coffee break** |
| 11:30-12:00 | Phase-matching strategies for XUV generation in hollow waveguides (**Valer Tosa,** INCDTIM) |
| 12:00-12:30 | Review about high-power MIR OPCPA systems (**Philipp Merkl,** Class 5 Photonics GmbH) |
| 12:30-13:00 | Modeling of femtosecond laser pulse energy deposition for the generation of high-order harmonics in microfluidics devices (**Federico Bariselli,** Aeronautics & Aerospace Department of the von Karman Institute) |
| 13:00-14:30 | **Lunch (buffet)** |
| 14:30-15:00 | Femtosecond laser micromachining of microfluidic devices for intense laser applications: technological limits and prospects (**Rebeca Martinez Vazquez,** CNR-IFN) |
| 15:00-15:30 | At-Resolution, 3D Metrology for the EUV Era (**Andrea Invernizzi,** ASML Research) |
| 15:30-16:00 | Soft and Hard-X-ray Reflective Optics at Thales SESO: opportunities for the project X-PIC (**Luca Peverini,** Thales SESO) |
| 16:00-16:30 | **Coffee break** |
| 16:30-17:30 | Round table and concluding remarks (Chair **Salvatore Stagira**) |

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 964588.

*Figure 3a Agenda of the First Workshop of the X-PIC project*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

**Salvatore Stagira**



Is Full Professor in Experimental Physics at **Politecnico di Milano** since 2019. His research activity, testified by more than 230 scientific papers, concerns ultrafast nonlinear optics, strong optical field phenomena, and ultrafast spectroscopy of matter.

He is the Coordinator of the H2020 project "Extreme Ultraviolet to soft-X-ray photonic integrated circuits (X-PIC)".

**Valer Tosa**



Is Senior Researcher in **INCDTIM** Cluj-Napoca where he leads the Laser Induced Phenomena Group.

Currently, his main research activity concerns the modelling of laser interaction with atoms and molecules, in particular experiments of high order harmonic generation (HHG) with femtosecond laser pulses. The main areas of expertise are i) development of numerical models for short pulse propagation in gas media and guided structures; ii) investigation of HHG by various laser fields and configurations; iii) XUV pulse propagation in phase matching conditions, and iv) characterization of attosecond pulse generation.

He is author/co-author of 151 ISI articles and several contributions in international conferences. He coordinated several national projects in Romania and two FP7 projects having INCDTIM as partner.

**Luca Peverini**



Joined Thales **SESO** in 2010. He is currently responsible for the X-ray Optics R&D and Product Line Manager for x-ray optics for synchrotron and FEL X-rays sources. He is in charge of the business development of X-ray mirror optics with nano-radiant accuracies.

He also develops and coordinates the R&D activities related to a set of polishing techniques available at Thales SESO (IBF, Computer Controlled and traditional polishing).

**Rebeca Martínez Vázquez**



Received her degree and PhD in Physics from Universidad Autónoma de Madrid (Spain) in 2000 and 2005 respectively. Between 2004 and 2012 she was a contract researcher at IFN-CNR in Milan and in 2012 she became a staff researcher. Presently her research interest is focused in the modification of transparent materials by femtosecond laser irradiation. Her research activity includes the development and characterisation of microfluidic lab-on-a-chip devices for biomedical applications or strong laser fields applications. She is also interested in the development and fabrication, by two-photon polymerization, of 3D micro-size structures for biological studies.

She is co-author of four book chapters, several conference contributions and 57 articles on international scientific journals. Currently she is the IFN-Unit Coordinator of a FETOPEN H2020 project "X-PIC" ( eXtreme ultraviolet to softX-ray Photonic integrated Circuits) and of a PON Project "TITAN" (Nanotecnologie per l'immunoterapia dei tumori). She is also collaborating, as a senior researcher, in the FETOPEN H2020 Project "IN2SIGHT" (An in vivo bioengineered chip as a smart intravital multiphoton imaging window for new validation protocols of biomaterials ).

**Federico Bariselli**



Is a Research Engineer in the Aeronautics & Aerospace Department of the **Von Karman Institute** (Belgium). After graduating in Aerospace Engineering at Politecnico di Milano in 2013, he attended the Research Master at VKI, where he was awarded the von Karman Prize.

He obtained his Ph.D. from the Vrije Universiteit Brussel and Politecnico di Milano in 2020 with the highest honors, defending a thesis on modeling gas-surface interaction in rarefied meteor flows. His main research interests are aerothermodynamics and low-temperature plasmas, applied to the fields of meteor science, hypersonic reentry flows, electric propulsion, and lasers. Dr. Bariselli has seven peer-reviewed journal publications, four conference proceeding papers, and over ten presentations and abstract contributions at international congresses.

**Francesca Calegari**



Received her Ph.D. from Politecnico di Milano in 2009. She was a Postdoctoral Research Fellow with CNR-INFM until 2010 and with Politecnico di Milano until 2011. From 2011 until 2016, she was Staff Researcher at CNR- IFN and an Adjunct Professor of Physics at Politecnico di Milano. In 2014, she was a Visiting Scientist at MPSD, Hamburg, Germany, and the same year she was awarded a European Research Council (ERC) Starting Grant to investigate the role of the electron dynamics in the photochemistry of biomolecules. In 2015, she was awarded a "special recognition to young women in Photonics" by the European Optical Society (EOS). In 2017 she received the ICO prize and the Ernst Abbe medal from the International Commission of Optics and in the 2018 she was awarded the Zdenek Herman MOLEC Young Scientist Prize. Recently she has been elected OSA Fellow. Since 2016, she has been appointed Full Professor of Physics at the University of Hamburg and Leading Scientist at DESY where she leads the Attosecond Science Division. She is member of a number of international committees, she is part of the directorate board of the Hamburg Excellence Initiative Advanced Imaging of Matter, member of the International Advisory Committee of ELI-ERIC, member of the Board of Meetings of OSA and editor for the peer-reviewed journal JPhys Photonics, IOP. The main focus of her research is to track and ideally control in real time the electron dynamics occurring in systems with increasing complexity from simple molecules to molecules of biological interest and nanostructured materials

**Philipp Merk**



Graduated in 2017 from University of Regensburg in Nanoscience. PhD in Physics in 2021 at the group of Rupert Huber, studying the ultra fast exciton dynamics in atomically thin semiconductors. Developed and worked with ultra fast MIR laser systems during his scentific career 8 peer reviewed (Nature Materials, Nature Communications, Optics Letters, Nano Letters, Optics Express Joined Class 5 in Mai 2021 as project leader fo the XPIC

**Andrea Invernizzi**



Andrea's research activity started at College de France (Paris), where he completed his PhD in Experimental Physics studying a quantum gas of Na atoms. After 4 years at Safran Reosc working on the design and construction of optical test benches for mirror polishing, he moved to ASML Research.

As a Researcher in computational methods, he studies the inverse problem in scatterometry to measure overlay and 3D profile metrology. He also investigates new metrology techniques for the semiconductor industry.

*Figure 3b Flyer of the First Workshop of the X-PIC project*

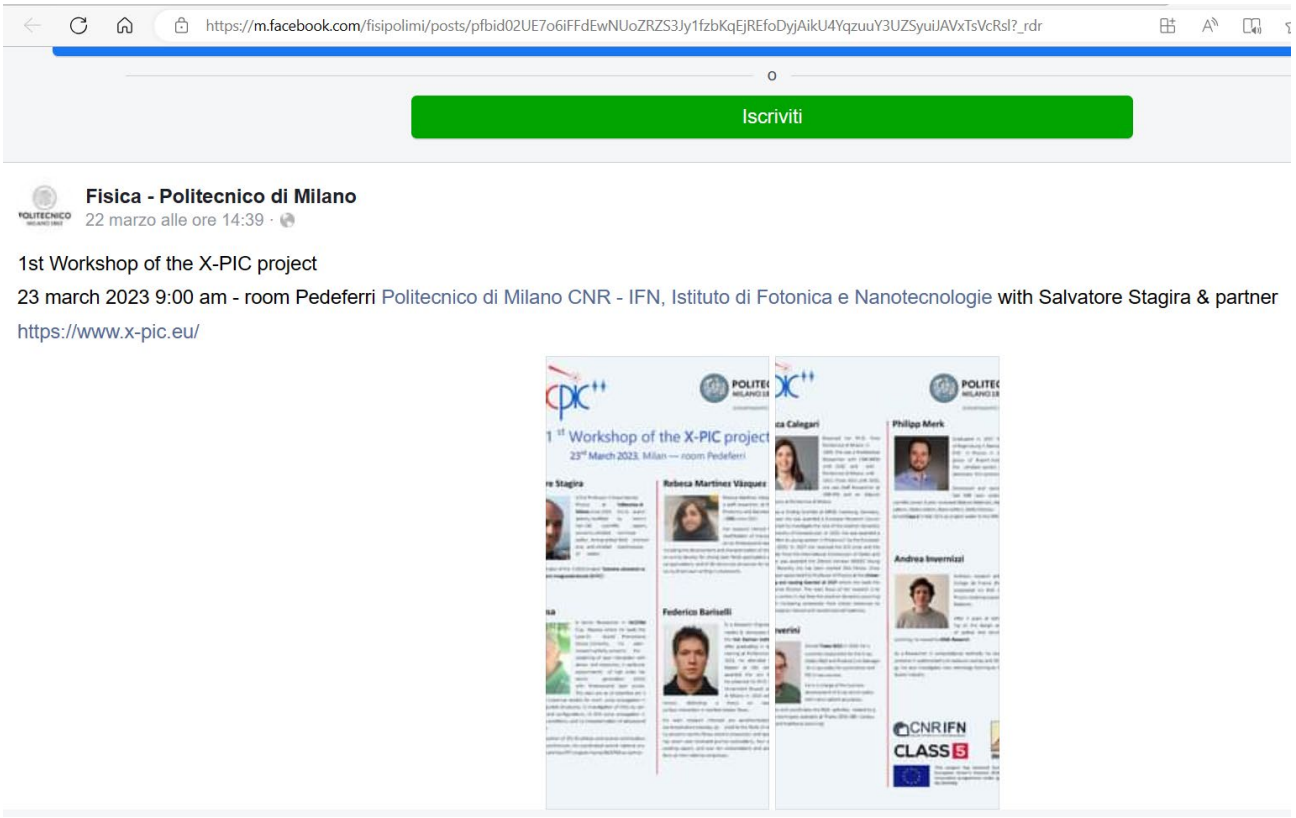


*Figure 3c Facebook post*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

use your profile to apply in one click

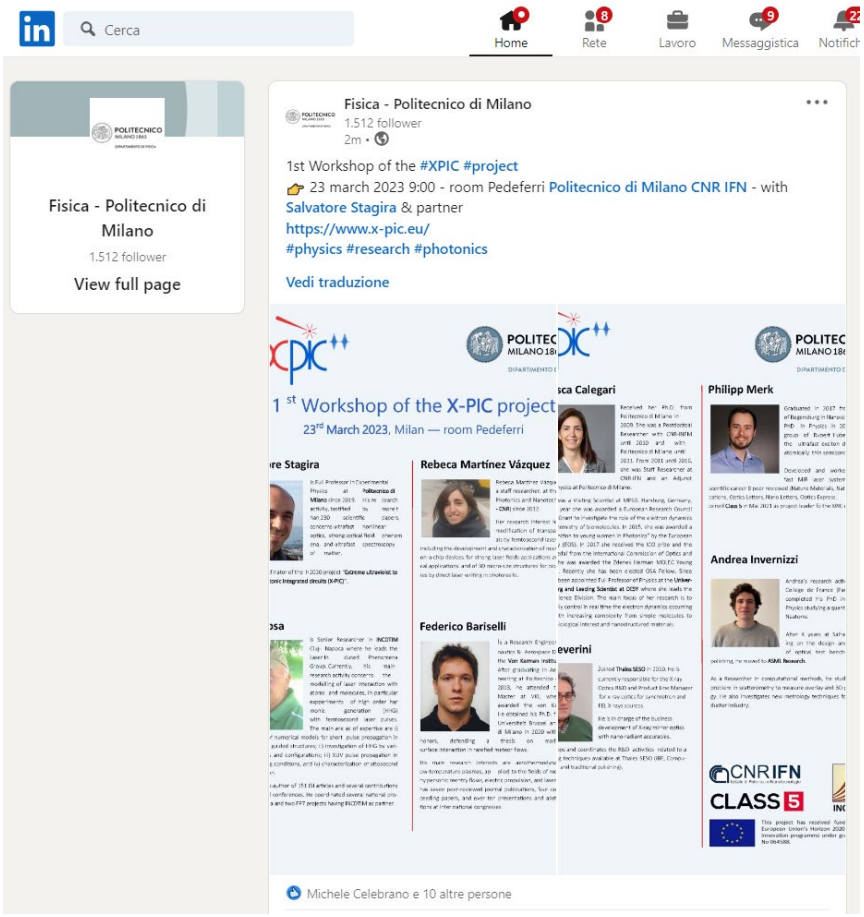


*Figure 4 Linkedin post*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.


*Figure 5. Twitter post CLEO Europe 2023*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

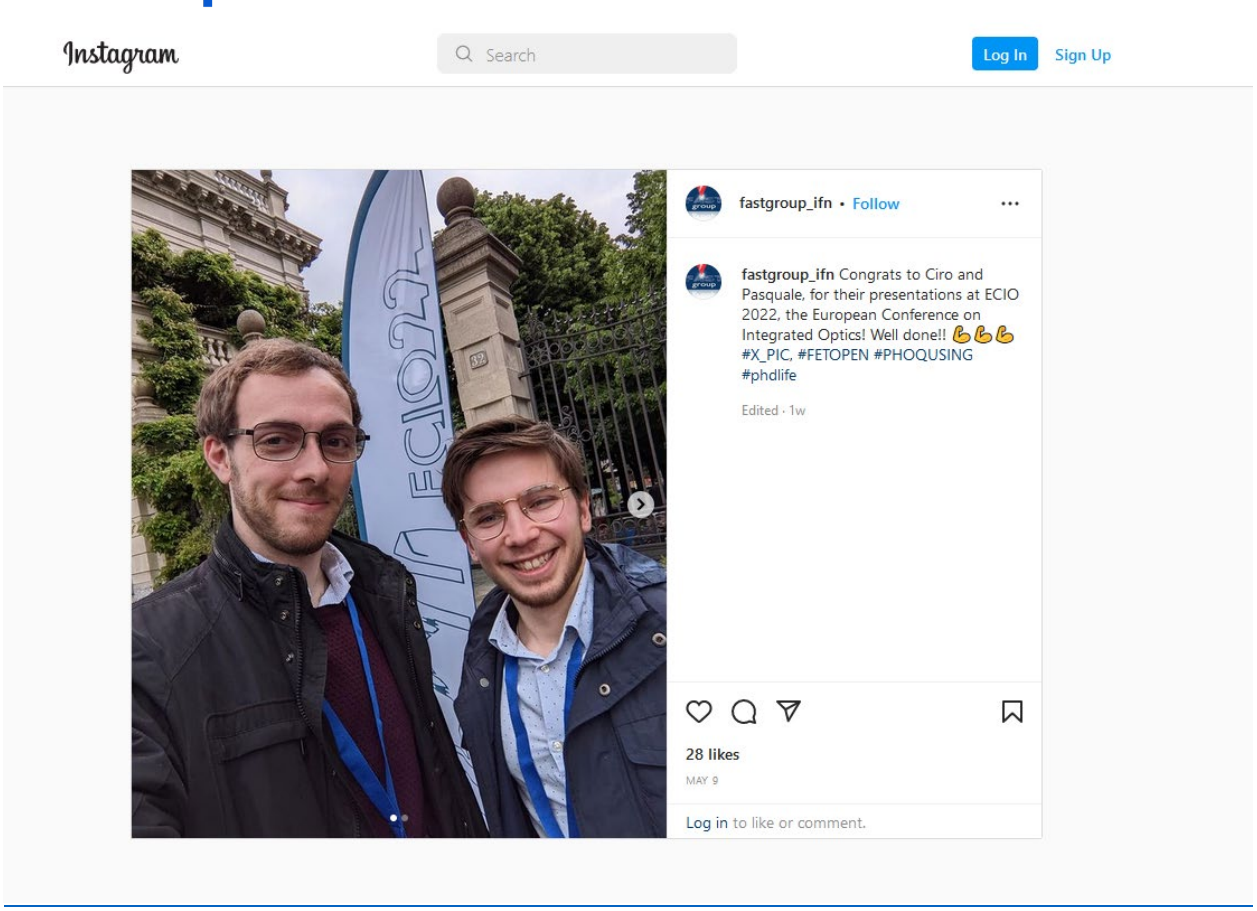


*Figure 6. ECIO 2023 Milan, Italy*

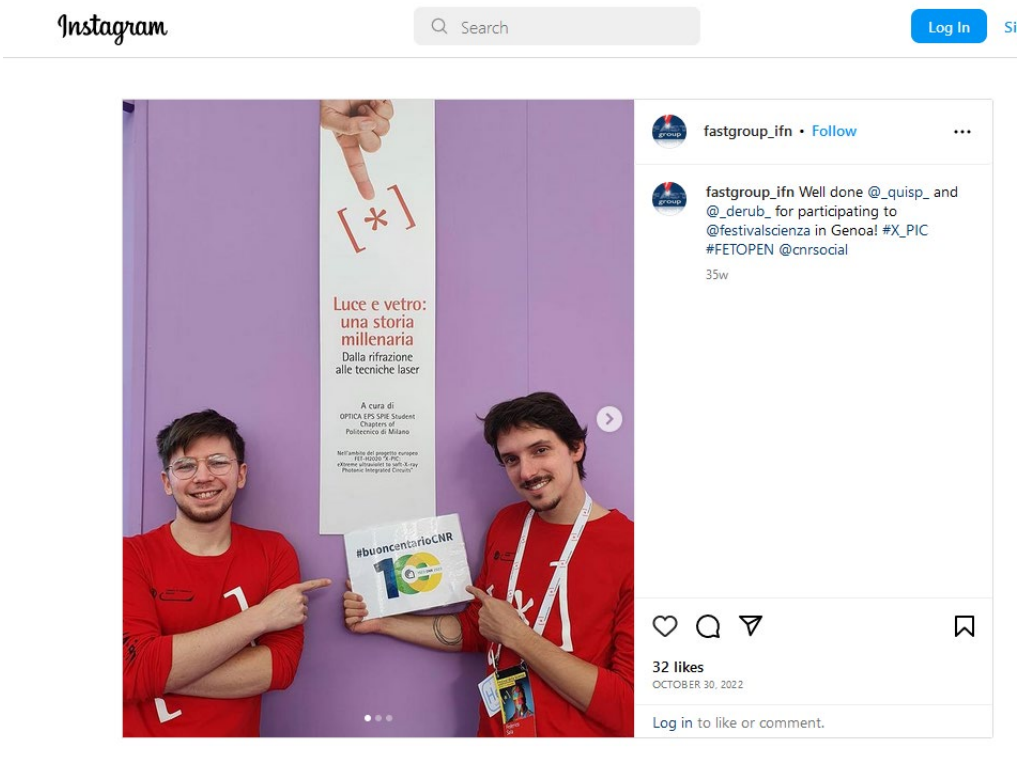


*Figure 7. Festival della Scienza*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

**FAST Group**
@fastgroup_ifn

We are very proud of our student Pasquale we won the #Poster competition at #LMPA2023 in Japan! Well done and congratulations! #X_PIC


10:34 AM · Sep 7, 2023 · **365** Views

1 11

Figure 8. Tweet LMPA2023

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

# APL Photonics: a new X-PIC study on the cover page

Posted on December 15, 2022 by Salvatore


Copertina *APL Photonics 7, 110801 (2022)*

The recently published paper "Microfluidic devices for quasi-phase-matching in high-order harmonic generation" has been selected for the cover page of the APL Photonics journal.

The Authors of the paper are: A. G. Ciriolo, R. Martínez Vázquez, G. Crippa, M. Devetta, D. Faccialà, P. Barbato, F. Frassetto, M. Negro, F. Bariselli, L. Poletto, V. Tosa, A. Frezzotti, C. Vozzi, R. Osellame, and S. Stagira.

DOI: https://doi.org/10.1063/5.0118199

Figure 9. The announcement about the cover page attributed to a X-PIC paper on APL Photonics.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 964588.

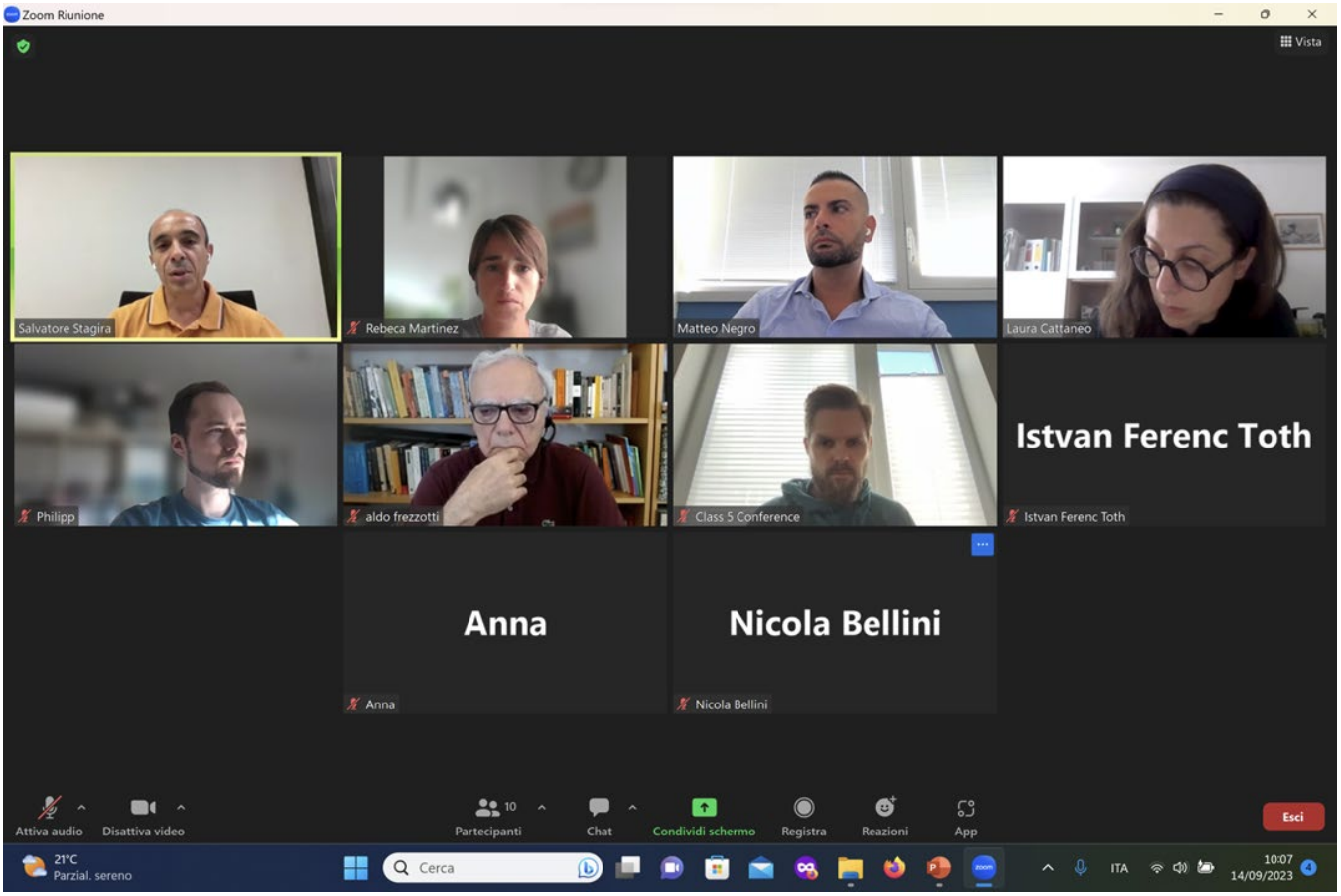


Figure 10. Online meeting of the X-PIC Consortium with the Scientific Advisory Board on September 14th 2023.