



Periodical Training Activities Report (2/3)  
**Deliverable 2.5 - PUBLIC**

**Authors:**

Manus Hayne (ULANC, SB, AAB Head)  
Benito Alén (CSIC, Network Coordinator)  
Cecilia Cotero (Project Manager)

**Date:** March, 31<sup>st</sup>, 2023

## Content Table

Content Table.....	2
Executive Summary.....	3
I. ESRs PhD Enrolment.....	4
II. Secondment Plan execution.....	4
III. Personal Career Development Plans (PCDP).....	5
IV. Training Activities.....	6
1. Training Activities organised by the consortium.....	6
2. External Training activities.....	13

## Executive Summary

The Report on Periodic Training Activities is Deliverable 2.5 of the QUANTIMONY project. It is the second of the three reports on scientific and transferable skills training activities that must be uploaded in M16, M28 and M40, as described in our DoA for Work Package 2: “Training and Supervision”.

This Deliverable has been drafted by the Head of the Academic Advisory Board & Supervisory Board as well as Leader of Work Package 2, Manus Hayne (ULANC) and the Network Coordination Office of the project.

This document contains the current status of execution of the training and secondment plans, the status of the PCDPs’ progress, and a report on the training activities organised by the consortium, as well as of the external training activities attended and reported by the ESRs.

## I. ESRs PhD Progress

By March 2023, ESRs have completed an average of 54,68% of their PhD recruitment periods as shows the figure below:

		RECRUITMENT/ENROLMENT/PERSON MONTHS					
RECRUITMENT	ENROLMENT	2021	2022	2023	2024		
ESR1 - CSIC	Giulio Barbieri	UPM			61%		
ESR2 - CSIC	Fernanda Malato	UPM			53%		
ESR3 - UPM	Malte Schwarz	UPM			47%		
ESR4 - ULANC	XiuXin Xia	ULANC			56%		
ESR5 - ULANC	Gizem Acar	ULANC			58%		
ESR6 - UOW	Francisco C. Alvarado	UOW			47%		
ESR7 - TUE	Aurelia Trevisan	TUE			56%		
ESR8 - TUE	Julian Zanon	TUE			53%		
ESR9 - TUB	Lucie Leguay	TUB			47%		
ESR10 - UWUE	Borislav Petrovic	UWUE			58%		
ESR11 - UNITOV	Ahn-Luan Phan	UNITOV			58%		
ESR12 - AIXTRON	Husejini Hajrudin	RTWH AACHEN			56%		
ESR13 - IQE	Chen Liu	CARDIFF			56%		
ESR14 - nextnano	Takuma Sato	TUM (new)			63%		

Figure 1- ESR PM progress

## II. Secondment Plan execution

Each ESR goes on secondments **to the laboratory of other beneficiaries or partners for a total period of 7 to 9 months**. We have carefully designed this aspect to allow all ESRs benefit from the complementary expertise of diverse participants in different countries.

The table below shows the progress of secondments until the current date. It can be observed that at Y2 of project execution, ESRs have only completed or planned 33.96% of their planned secondments. Eleven ESRs have completed their first or second secondments (in green), and all have planned secondments for the remainder of 2023 (orange):

Table 1- Secondment plan execution status (March, 2023)

		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	Change	Completion
ESR1 - CSIC	Giulio Barbieri	nextnano	Tiberlab	ULANC	TUE								21%
ESR2 - CSIC	Fernanda Malato	ESRF	UOW	Braker	MA IV					TPS			45%
ESR3 - UPM	Malte Schwarz	ESRF (new)	Fluxim	UWUE	ULANC					UOW		Yes	33%
ESR4 - ULANC	XiuXin Xia	ESRF	ESRF	UWUE	UOW					IQE			13%
ESR5 - ULANC	Gizem Acar	nextnano	TUE	CSIC	TUB								14%
ESR6 - UOW	Francisco C. Alvarado	ESRF	TUE	ESRF	UCA					LMA			25%
ESR7 - TUE	Aurelia Trevisan	ULANC	ESRF	ESRF	UOW					AIXTRON			38%
ESR8 - TUE	Julian Zanon	UWUE	QuantCAD	UNITOV	TUB								38%
ESR9 - TUB	Lucie Leguay	nextnano (new)	ULANC	TUE	nextnano (new)					UNITOV		Yes	38%
ESR10 - UWUE	Borislav Petrovic	nanoplus	nextnano	UPM	CSIC/LSF								21%
ESR11 - UNITOV	Anh-Luan Phan	nextnano	TUE	TUB									14%
ESR12 - AIXTRON	Husejini Hajrudin	TUB	IQE	Ucardiff									14%
ESR13 - IQE	Chen Liu	U Cardiff	UWUE	nextnano	UOW								14%
ESR14 - nextnano	Takuma Sato	UNITOV	nextnano lab	ULANC	UWUE							Pending	30%

Until date, there have been three secondment change requests, two are approved and one pending approval by the REA officer (in yellow). The procedure agreed with the EC is to try to follow the secondment plan as written in the proposal and, if some change is needed, to ask for permission using a dedicated secondment change request form.

### SECONDMENT PLAN EXECUTION

■ Completed ■ Scheduled ■ Remaining

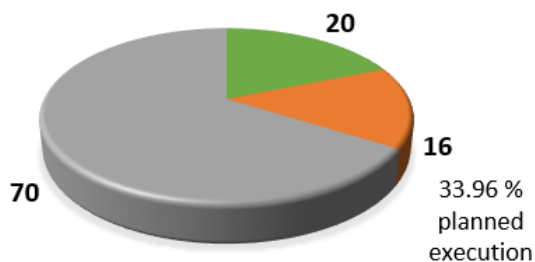


Figure 2- Secondment plan execution

### III. Personal Career Development Plans (PCDP)

ESRs are required to have a personal career development plan (PCDP) to guide and also to document their research and training in order to help achieve career goals. PCDPs are checked twice a year by a Progress Committee (PC) and once a year by the Academic Advisory Board (AAB) as is foreseen in the QUANTIMONY training and supervision programme. PCs are composed of an International Supervisory Team (formed by the main supervisor, the local co-supervisor, and an international supervisor), an inter-sectoral supervisor and an ESR acting as Chair.

The PCDP is a core aspect of MSCA-ITNs like QUANTIMONY, and the EC provides a template for it, which was included as Attachment 4 of the QUANTIMONY Consortium Agreement. The PCDP template used in QUANTIMONY is based on the EC model, with some adaptations, and has been approved by the Academic Advisory Board (AAB).

There are three PCDP templates, one for the initial PCDP, one for reviews and one for the final PCDP. The idea is that the initial PCDP is appended by the reviews and the final PCDP to document the ESRS career goals and plans, how these are progressing, and to create a dossier of the activity of an ESR. The review template has fields where seminars, conferences, courses etc. can be added. The intention is that it will be a resource when preparing a CV, completing a job questionnaire or writing a fellowship application.

The PCDP preparation and review process, as organised by the AAB, is as follows:

1. The PCDP template is completed by the ESR, reviewed by the main advisor and local supervisors, and iterated as required. It then is sent for comment of the international supervisor and signed by the ESR and main supervisor.
2. Progress Committee (PC) meetings are held online and consist of a short talk (20 mins) by the ESR, followed by questions and discussion. Any comments of the PC on the initial PCDP are immediately added to the document and finally signed by the PC chair.
3. The signed PCDPs are gathered by the AAB Head and the QUANTIMONY Network Coordination Office to ensure that they are centrally recorded as complete.
4. In the case of the first and third PCDP review, the AAB reviews the PCDPs and issues a report for each ESR that is sent to the main supervisor for consideration. These reviews must be uploaded to the participants portal as Deliverables 2.1 and 2.3.

At the moment of submitting this report, the 14 QUANTIMONY ESRs have submitted their initial Personal Career Development Plan (PCDP) on December 2021, their first review on April 2022, the second review on November 2022 and are currently preparing for the third review. The first review was discussed by the AAB for the first time on May 5<sup>th</sup>, 2022 and was uploaded as Deliverable 2.1 on May 31<sup>st</sup>, 2022.

Table 2- PCDP review processes for project duration

	Y1		Y2		Y3	
	Initial PCDP	Review PCDP	Review PCDP	Review PCDP	Review PCDP	Final PCDP
PC Review	DONE	DONE	DONE	ONGOING		
AAB Review		DONE		UPCOMING		

#### Incidences and PCDP Amendments:

Any incidences such as changes in secondment plans and of main supervisors are being treated within the AAB and according to its internal procedures for such cases.

## IV. Training Activities

The table below shows the current status of participation of ESRs and beneficiaries to both consortium and external training activities. All ESRs have attended all the consortium events organised since their recruitment, as well as a total of 33 external training activities, of which 10 are trainings and 23 are participations in conferences/workshops for either networking purposes or as speakers.

Table 3- Participation to training activities of ESRs and Beneficiaries

		Participation to training activities												
		CSIC1	CSIC2	UPM	ULANC	UOW	TUE	TUB	UWUE	UNITOV	AIXTRON	IQE	nextnano	total/cat
Quantimony event	KickOff Meeting	2	2	2	3	1	3	1	3	1	1	2	2	23
	1st IISb W. ESR Checkpoint	1	2	1	2	2	2	1	3	2	2	2	3	23
	Industry Day - AIXTRON	4	3	4	11	1	4	1	1	2	3	2	7	43
	Transf. Skills Training & AAB I -ULANC	3	2	2	5	2	2	1	2	2	2	2	4	29
	Summer School I -UPM	5	1	16	6	1	2	1	2	2	1	1	1	39
	2nd III-Sb W. & ESR CheckPoint -TUE	4	1	2	4	1	5	1	1	2	2	1	4	28
	Winter School -TUB	4	2	2	5	1	2	4	2	1	1	1	7	32
	Transf. Skills Training & AAB II -ULANC													
	Open School -CSIC													
	3rd III-Sb W. & ESR Checkpoint - UNITOV													
	Industry & Career Day - IQE													
	Final Workshop -OUW													
	External	training activity/course		1	2			2		2	2			1
conference/Workshop-attendance/networking		2	4	2			2		1					11
conference/Workshop- oral participation		2			3			1	2				4	12
other														
Total/node		27	18	33	39	9	24	11	19	14	12	11	33	TOTAL 250

### 1. Training Activities organised by the consortium

During this first period there had taken place nine training activities organised by the consortium, distributed in seven different events.

Table 4- Training activities organised by the consortium

Network Activities Schedule					
Title	Date & Duration	Type	Type of Skills imparted (reported to the F&T portal)	N. of ESRs	Total attendants
1 st Annual III Sb Workshop	9 Dec 2021- 1d	Hybrid	Technical research skills - III- Sb semiconductors; fabrication aspects	14	31
1st ESR Checkpoint	7-8 Dec 2021-1.5d	Hybrid	Career development, general knowledge in the research field of III Sb semiconductors, technical research skills	14	31
Industry Day @AIXTRON	18 March 2022- 1d	online	Entrepreneurship, commercialisation of research outputs, technical research skills.	14	57
Transferrable Skills Meeting	20-21 April 2022-1.5d	Hybrid	Transferable Skills: project management, reserach ethics, impact communication	14	16
AAB review Meeting	21-22 April 2022-1.5d	Hybrid	Annual AAB meeting	14	35
Summer School	11-15 July 2022- 4.5d	Hybrid	Technical research skills: multidisciplinary aspects of modern III Sb technology. Characterisation techniques with focus on optical properties and methods.	14	72
2nd Annual III Sb Workshop	28 Oct 2022 -1d	Hybrid	Technical Research skills - III - Sb semiconductors; characterisation aspects	14	34
2nd ESR Checkpoint	26-27 Oct 2022 - 1.5d	Hybrid	Career development, general knowledge in characterisation of III Sb semiconductors, technical research skills	14	34
Winter School	27 Feb- March 3 2023 - 4.5d	Hybrid	Technical Research Skills: modelling of non-volatile memories	14	61
Transferrable Skills Meeting	19-20 April 2023 - 1.5d	In person	Transferable Skills: writing funding proposals, career advice	14	
AAB review Meeting	20-21 April 2023 - 1.5d	Hybrid	Annual AAB meeting	14	
Open School		Upcoming			

- **The 1<sup>st</sup> III-Sb Annual Workshop & ESR Checkpoint** (7-9 December 2021), were organised by Jülius-Maximilian University in Würzburg and hosted as a hybrid online/onsite event due to COVID restrictions.

This was the first of a series of four annual training events for our doctorate students, each providing hands-on training in different aspects of the QUANTIMONY research programme. Their objective was to broaden general knowledge on III-Sb science and technology among our doctorate students, facilitating their understanding of the state-of-the-art and of technical challenges, and to encourage multidisciplinary collaboration within the network.

This first training event was an introduction to the field, and included lectures about past and present III -Sb technologies and the challenges posed by their fabrication, as well as presentations by the 14 doctoral students of the network on their research topics.

List of speakers:

- Prof. Dr. Michael Heuken (Vice President Advanced Technologies at AIXTRON)
- Dr. Martin Kamp (Würzburg University)
- Dr. Stefan Birner (nextnano GmbH)



*Image 1- Lab visits at Würzburg U.*

The event attendees went to practical demonstrations and lab visits at the nanofabrication facilities available at Würzburg University and nearby consortium members nextnano GmbH and nanoplus GmbH.

- **The Industry Day at AIXTRON** (18 March, 2022), organised by AIXTRON as an online event due to COVID restrictions in place at the company's premises. This event brought representatives of our project partners' spin-offs, SMES and large companies, as well as external companies to share with our PhD students their experience in diverse application fields. The discussions gave great insights on the opportunities and challenges of modern semiconductors industry and what is demanded in High-level Tech positions.

List of speakers:

- Dr. Bernd Schineller (AIXTRON SE)
- Dr. Lutz Bruegemann (Bruker AXS GmbH)
- Dr. Robert Weih (nanoplus Nanosystems and Technologies GmbH)
- Dr. Zhi Gang Yu (QuantCAD LLC.)
- Dr. Urs Aeberhard (Fluxim AG)
- Dr. Alex Robson (Lancaster Material Analysis Ltd.)
- Dr. Thomas Grange (nextnano Lab SAS)
- Dr. Joachim Rest (Laytec AG)
- Dr. Martin Strassburg (ams OSRAM)

- **The Transferable Skills Training & AAB meeting** (20 -22 April, 2022) took place as a hybrid online – onsite event hosted by Lancaster University.

The first Transferable Skills Trainings (20 to 21<sup>st</sup> April) consisted of three half-day training modules on Research Project Management, Impact communication and Research Ethics. They were imparted by Dr. Katy Mahoney, an expert Researcher Coach from Vitae (CRAC Ltd.). Online and onsite attending ESRs listened to presentations, discussed, debated and worked on collaborative online/ paper tools.

The AAB meeting gave the change to ESRs to present their research work and their training plans up until date to the consortium, in a series of 30-minute presentations. The meeting also included the following guest speakers:

- Prof Mike Wale (Department of Electronic and Electrical Engineering, UCL)
- Prof Tao Wang (Department of Electronic and Electrical Engineering, U. Sheffield)
- Dr Andy Marshall (Department of Physics, Lancaster University)



*Image 2 - Onsite attendants to the AAB meeting at Lancaster University*

- **The Summer School on III Sb applications: solar cells** (11-15 July 2022) was organised by the Universidad Politécnica de Madrid as a hybrid event, with online lectures and tutorials open to non-consortium members and broadcasted online, and afternoon lab and simulation sessions exclusive to QUANTIMONY's ESRs. The School provided training and insight into the fundamentals of photovoltaics and the role of antimonides. Renowned experts in the field of photovoltaics presented tutorials and talks introducing the fundamentals of the field, its challenges and the most recent advances in key areas covering Silicon, III-V and multi-junction solar cells and emerging technologies.

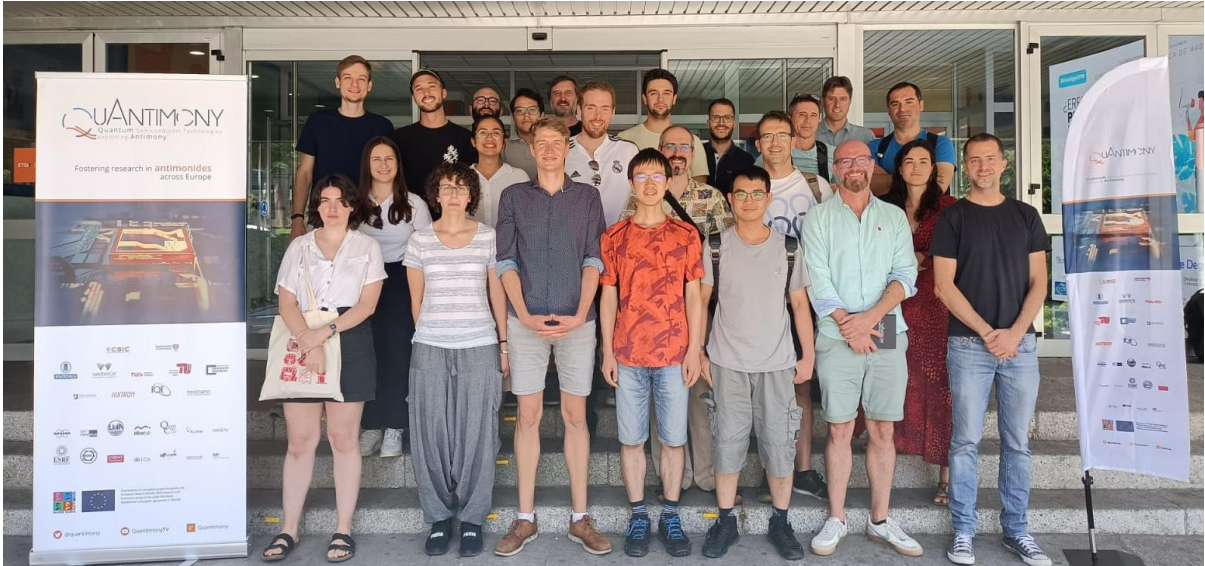
The invited speakers were:

- Prof. Carlos Algora (Solar Energy Institute, UPM)
- Prof. Franz-Joseph Haug (PV-lab - EPFL, Switzerland)
- Prof. Stephane Collin (C2N -CNRS, France)
- Prof. Mircea Guina (Optoelectronics Research Center, Tampere University)
- Prof. Ned Ekins-Daukes (University of New South Wales Sydney)
- Dr. Victor López Richard (Universidade Federal de Sao Carlos)
- Dr. Urs Aeberhard (Fluxim AG)
- Dr. Jerónimo Buencuerpo (IPVF/C2n -CNRS)

- Dra. Alicia Gonzalo (Universidad Carlos III)
- Dr. Diego Alonso (Imperial College London)
- Dr. Íñigo Ramiro (Universidade Nova de Lisboa)
- Dra. Raquel Caballero (UAM)

The lab sessions on Fluxim's Setfos and SolCore were held exclusively for Quantimony's ESRs.

Image 3- Summer School attendants



- **The 2nd III-Sb Workshop and ESR Checkpoint** (26-28 October 2022) were organised as hybrid event by Eindhoven University of Technology. The Workshop focused on characterization of III Sb materials by different techniques and their structural, electronic and magnetic properties and included practical demonstrations in nano-characterization techniques available on-site. The ESR Checkpoint allowed ESRs to present the progress of their research to the consortium.

The workshop's speakers were:

- Prof Paul Koenraad (Technical University of Eindhoven)
- Prof Michael Flatté (University of Iowa)
- Prof. Claudia Fleischmann (imec, KU Leuven)
- Dr Martin Paul Geller (University of Duisberg)
- Dr Andrew Marshall (Lancaster University)

The event's attendants also had the chance to visit the premises of ASML, the world's leading provider to the semiconductor industry.



Image 4- Visit to ASML

- [Winter School on III-Sb applications: non-volatile memories – a modelling perspective](#) (27 Feb - 3 March 2023) focused on the design and scalable production of a new III-Sb patented memory device (ULTRARAM TM). There was a combination of specialised onsite and online lectures opened to non-consortium attendants, and hands-on simulation sessions as well as live demonstrations of the latest TCAD/EDA tools organised by the Technical University of Berlin. The event provided an excellent opportunity for networking with leaders in the field.

List of speakers:

- Manus Hayne, Lancaster University
- Dieter Bimberg, Technische Universität Berlin
- Petr Klenovský, Masaryk University, Brno
- Wladek Grabinski, MOS-AK Association (EU)
- Vihar Georgiev, James Watt School of Engineering, Glasgow
- Uwe Bandelow, WIAS Berlin
- Claudia Draxl, Humboldt Universität Berlin
- Rabea Pons, Comsol, Göttingen
- Mathieu Luisier, ETH Zürich
- Thomas Hammerschmidt, Interdisciplinary Centre for Advanced Materials Simulation (ICAMS)
- Marc Bescond, Faculté des Sciences de Saint Jérôme, NQS group, Marseille
- Chetan Gupta, Micron Technology (R&D)
- Jannik Wolters, Deutschen Zentrum für Luft- und Raumfahrt / TU Berlin



*Image 5- Q&A session at the Winter School*

**Participation of Partner Organisations and external organisations in consortium events**

The following tables show that, so far, there is a good level of participation of partner and external organisations in the events organised by the consortium, both as speakers (S) and as attendants (A)

*Table 5- Participation of PO members in consortium events*

	Partner Organisations Participation													
	Bruker	nanoplus	LMA	Tiberlab	QuantCAD	Fluxim	Max IV	ESRF	NSRRC	Ucardiff	UCA	UFSCAR	nextnanoLab	TUM
KickOff Meeting			S	S	S	S		S		S	S	S		
1st IISb W. ESR Checkpoint		S						A		A		A	A	
Industry Day - AIXTRON	S	S	S		S	S		A		A	A		S	
Transf. Skills Training & AAB I -ULANC														
Summer School I -UPM						S		A		A		S	A	
2nd III-Sb W. & ESR CheckPoint -TUE								A		A		A		
Winter School -TUB		A										A		
Transf. Skills Training & AAB II -ULANC														
Open School -CSIC														
3rd III-Sb W, & ESR Checkpoint - UNITOV														
Industry & Career Day - IQE														
Final Workshop -OUW														

	External Organisations Participation							
	KickOff	1 III-Sb W	Ind Day 1	transf Skills I	AAB meeting	Summer Sc.	2 III Sb W.	Winter S.
OSRAM (EAB)			S					
Laytec			S					
Vitae				S				
University College London					S			
University of Sheffield					S			
Imperial College London						S		
UAM						S		
U. Carlos III						S		
Tampere U						S		
U. New South Wales						S		
IPVF						S		
EPFL, Switzerland						S		
C2N - CNRS						S		
Universidade Nova Lisboa						S		
Yachay Tech						A		
CIMAV						A		
Escuela Politécnica Nacional (Ecuador)						A		
Sistemas de Seguridad S.A.						A		
IMEC							S	
U Duisburg Essen							S	
Masaryk University								S
MOS-AK Association								S
James Watt School of Engineering								S
WIAS Berlin								S
Humboldt Universität Berlin								S
ETH Zürich								S/A
Faculté des Sciences de Saint Jérôme								S
Micron Technology								S
IITM Chennai (India)								A
Ajou University (Korea)								A
Global Academy of Technology, Bangalore								A
Fraunhofer Institute HHI								A
University of Oulu								A
University of Glasgow / IBM research								A
Acharya Nagarjuna University								A
Photin								A
Comsol								S
ICAMS								S

Table 6-External Organisations attending Consortium events

## 2. External Training activities

ESRs are encouraged to attend external training events, workshops and seminars, either organised by their hosting institution or externally organised activities. Participation is reported to the Network Coordination Office via online report forms. The next table contains the attended external training activities reported by ESRs since their enrolment until the end of March, 2023: be it conferences (attended either for networking purposes or to present their research), workshops or trainings.

Name and Last name	Institution	Type of event	Type of attendance	QUantimony or external event	Name of activity	Date and duration of the activity (eg MM/DD/YY- 2 days)	Description	Link to the activity	attendants to the event	type of public
Borislav Petrovic	UWUE	Participation to a conference	Attendance/networking	External activity	Deutsch MBE (DEMBE)	10/14/21 - 2 days	Attending the conference, listening to other speakers.	<a href="https://www.uni-goettingen.de/de/542452.html">https://www.uni-goettingen.de/de/542452.html</a>	30	Scientific Community ;
Fernanda Malato Praxedes	CSIC- ICMIM	Participation to a conference	Attendance/networking	External activity	Carac Symposium	39/11/2021 - 1 day	Carac Symposium, supported by Nanoelec/Characterisation program and its attached PAC-G platform, is the annual event dedicated to characterisation techniques that fit to electronics domain and beyond, their design and ultimately to ensure their reliability.	<a href="https://irtnanoelec.fr/actualites/carac21-2/">https://irtnanoelec.fr/actualites/carac21-2/</a>	100	Scientific Community ;
Fernanda Malato Praxedes	CSIC- ICMIM	Participation to a workshop	Attendance/networking	External activity	III Jornada para Doctorandos y Doctorandas del CSIC	28/10/2021 - 1 day	Lectures online about the transversal themes like professional career.	<a href="https://jornadadoctorandos.csic.es/">https://jornadadoctorandos.csic.es/</a>	1300 (views)	Other ;
Fernanda Malato Praxedes	CSIC- ICMIM	Participation to a training/supervision/network activity	Attendance/networking	External activity	Training "Become a researcher"	10/01/2022 -2 days	On-line training on bibliography reviews, writing papers, oral presentations, ethics, and activities management. Event promoted by InnovaXN.	Information with <a href="mailto:luce.chabert@esrf.fr">luce.chabert@esrf.fr</a>	52	Scientific Community ;
Anh-Luan Phan	UNITOV	Participation to a training/supervision/network activity	Attendance/networking	External activity	Intellectual Property for research: Live lecture 2022	24/02/22 - 1 day	This lecture gives a clear overview of the various issues related to the Intellectual Property, which may be useful for the research career.	<a href="https://www.vitae.ac.uk/events/ip-for-research-events-2021/useful-ipo-related-links">https://www.vitae.ac.uk/events/ip-for-research-events-2021/useful-ipo-related-links</a>	50	Scientific Community ;
Borislav Petrovic	UWUE	Participation to a training/supervision/network activity	Attendance/networking	External activity	IPD Live Lectures 2022	24.02.2022, 1 day	Lecture on Intellectual Property for Researchers	<a href="https://www.vitae.ac.uk/events/ip-for-research-events-2022/booking-form-ipd-live-lectures-2022">https://www.vitae.ac.uk/events/ip-for-research-events-2022/booking-form-ipd-live-lectures-2022</a>	30	Scientific Community ; Industry;
Borislav Petrovic	UWUE	Participation to a training/supervision/network activity	Attendance/networking	External activity	MCAA Around the World Webinar Series	11.02.2022, 1 day	Webinar about post doctoral careers of former MSCA fellows from Western Balkans aiming to help in getting to know possible prospective opportunities	<a href="https://www.mariecuriealumni.eu/news/mc-aa-around-world-webinar-3">https://www.mariecuriealumni.eu/news/mc-aa-around-world-webinar-3</a>	20	General public,Scientific Community ;

Fernanda Malato	CSIC- ICMM	Participation to a conference	Attendance/networking	External activity	ESRF User Meeting 2022	07/02/2022 - 3 days	Annual event dedicated to the ESRF user community with online lectures, training, and poster presentations. The program of the User Meeting explored broad topics such as climate change, gender equality, and COVID-19 vaccines, as well as highlighting more specific user research activities and updating the community on the status of ESRF beamlines.	<a href="https://www.esrf.fr/fr/home/events/conferences/2022/user-meeting-2022.html">https://www.esrf.fr/fr/home/events/conferences/2022/user-meeting-2022.html</a>	150	Scientific Community ;
Malte Schwarz	UPM	Participation to a training/supervision/network activity	Attendance/networking	External activity	Meeting of Spanish National Project "Quantimoney"	03/03/2022 - 1 day	Meeting of Spanish National Project "Quantimoney" with 2 beneficiaries and 1 partner from Quantimoney Network	/	15	Scientific Community ;
Fernanda Malato	CSIC- ICMM	Participation to a workshop	Attendance/networking	External activity	ESRF Science Day 2022	21/03/2022	themes: Biomedical Imaging, Energy Storage, New Capabilities at ESRF-EBS, Structural Biology, Fundamental Research and Industrial Research.	<a href="https://home.events/announcements/science-day-2022-talk-recordings.html">home/events/announcements/science-day-2022-talk-recordings.html</a>	150	Scientific Community ;
Julian Zanon	TUE	Participation to a conference	Attendance/networking	External activity	APS March meeting 2022	03/13/2022 - 03/18/2022 - 6 days	I attended to different tutorials and talks.	<a href="https://march.aps.org/">https://march.aps.org/</a>	10000	Scientific Community ; industry;
Julian Zanon	TUE	Participation to a conference	Attendance/networking	External activity	NWO Physics@Veldhoven	01/25/2022 - 01/26/2022 - 2 days	I attended (virtually) to different talks	<a href="https://physicsveldhoven2022.nl/">https://physicsveldhoven2022.nl/</a>	2000 (based on the number of people present in 2020)	Scientific Community ; industry;
Malte Schwarz	UPM	Participation to a workshop	Attendance/networking	External activity	IRIDA: Maskless Direct Writing and 3D Lithography: Capabilities and Applications	4/4/2022	lithography. Photolithography Main applications and challenges at MNFab-Direct laser writing: industrial application experience NanoFazor lithography for advanced 2D and 3D nano-devices Direct laser writing as a core facility service	<a href="https://www.irida.es/maskless-direct-writing-and-3d-lithography-capabilities-and-applications/">https://www.irida.es/maskless-direct-writing-and-3d-lithography-capabilities-and-applications/</a>	20	Scientific Community ; industry;
Anh-Luan Phan	UNITOV	Participation to a training/supervision/network activity	Attendance/networking	External activity	Raman Spectroscopy Training Course	04/29/22-4 days	Free short course about Raman spectroscopy	<a href="https://event.gotowebinar.com/event/9e2836c4-3f16-4c2c-b31ef84e837f992e/0efa1e87-8eb2-476e-aaaf-6524a17937a1">https://event.gotowebinar.com/event/9e2836c4-3f16-4c2c-b31ef84e837f992e/0efa1e87-8eb2-476e-aaaf-6524a17937a1</a>	unknown	Scientific Community ;

Giulio Barbieri	CSIC-IMN	Participation to a workshop	Attendance/networking	External activity	Entrepreneurial competences for researchers: developing a business model	18/05/22 - 2 hours	Interactive online training. Shared via mail by CSIC's Departamento de Postgrado y Especialización and organized as an Marie-Curie Alumnie Activity (MCAA) by Dr. Marco Masia (marco@enihlo.com)	No link	10	Scientific Community ;
Malte Schwarz	UPM	Participation to a workshop	Attendance/networking	External activity	Raman Spectroscopy Training Course	28/04/2022, 12/05/2022, 26/05/2022, 14/06/2022, 1h per date, onlin	brief overview of Raman scattering, cover practical considerations for making measurements (special focus on spectrometers and detectors), explore some of its many variants and look at some current applications.	Mb699Sb25sfuGgNKb xovs7Jx5yx53dzVntZ4 hXeJBSqblmsvL87uD kydVEm0yEMC%2bcfv 7%2bq%2b6OUHWyz K%2ftmOKY6FxxJ6TH 3dg%3d%3d	60	Scientific Community ;
Takuma Sato	nextnano GmbH	Participation to a conference	Poster	External activity	International Quantum Cascade Lasers School & Workshop 2022	23-28 of August, 2022	Presented the ongoing Quantimony project as a poster	<a href="https://iqclsw.phys.ethz.ch/">https://iqclsw.phys.ethz.ch/</a>	100	Scientific Community ; Industry;
Aurelia Trevisan	TUE	Participation to a workshop	Attendance/networking	External activity	Raman Spectroscopy Training Course	04/28/2022, 05/12/2022, 05/26/2022, 6/14/2022 - 1 hour in each day	Workshop on Raman spectroscopy	<a href="https://event.gotowebinar.com/event/9e2836c4-3f16-4c2c-b31e-f84e837f992e/01cc6b9b-549a-40d5-8a42-54eb2373074c">https://event.gotowebinar.com/event/9e2836c4-3f16-4c2c-b31e-f84e837f992e/01cc6b9b-549a-40d5-8a42-54eb2373074c</a>	50	Scientific Community ;
Aurelia Trevisan	TUE	Participation to a training/supervision/network activity	Attendance/networking	External activity	Raman Spectroscopy Training Course	04/28, 05/12, 05/26, 6/14/2022	I attended the 4 lectures	no	no	Scientific Community ;
Aurelia Trevisan	TUE	Participation to a conference	Attendance/networking	External activity	Physics@Veldhoven	01/25/2022 - 1 day	I attended several talks	<a href="https://physicsveldhoven2022.nl/">https://physicsveldhoven2022.nl/</a>	2000	Scientific Community ;

Giulio Barbieri	CSIC-IMN	Participation to a conference	Attendance/networking	External activity	The EPS Forums 2022	02/06/22-2 days	The EPS Forum is a three-day international meeting of interest for all European researchers, PhD students and Post Docs who wish to be introduced to exciting research opportunities in large companies and start-ups, and encourage a dialogue with representatives of the industry sector. I took part to presentations and workshops and had the opportunity to discuss with representatives of companies such as "Alice and Bob" and "Quandela".	<a href="https://epsforum.org/">https://epsforum.org/</a>	300	Scientific Community ;
Anh Luan Phan	UNITOV	Participation to a conference	Attendance/networking	External activity	NUSOD 2022	09/12/22- 5 days	The NUSOD conference connects theory and practice in optoelectronics. This year the conference was organized as a virtual event.	<a href="https://nusod2022.polito.it/">https://nusod2022.polito.it/</a>	200	Scientific Community ;
Xiuxin Xia	ULANC	Participation to an outreach activity (i.e. European Researchers Night, Pint of Science, Science Week, 3MT, MSCA Ambassadors, Women and girls in science)	Attendance/networking	External activity	Lancaster University Open Day	09/17/2022-1 day	I attended and volunteered at the Open Day of Lancaster University for a whole day event where I showed our research and department to prospective students of Department of Physics and answered questions from them or their parents on the study/life in Lancaster.	<a href="https://www.lancaster.ac.uk/study/open-days/undergraduate-open-days/">https://www.lancaster.ac.uk/study/open-days/undergraduate-open-days/</a>	100	General public;
Anh Luan Phan	UNITOV	Participation to a workshop	Attendance/networking	External activity	How to build a successful research career	09/21/22- 1 day	The workshop covers many tips and tricks for early-stage researchers who are seeking for the proper ways to build their research careers.	<a href="https://vinuni-edu-vn.zoom.us/j/83853521043?pwd=NzdWdXhicWpwZHE2aFpRTWRVeiZ2UT09">https://vinuni-edu-vn.zoom.us/j/83853521043?pwd=NzdWdXhicWpwZHE2aFpRTWRVeiZ2UT09</a>	120	Scientific Community ; General public;
Malte Schwarz	UPM	Participation to a training/supervision/network activity	Invitee	External activity	European School On Nanosciences & Nanotechnologies 2022, Grenoble, France	08/28/2022 - 14 days	Summer School in Grenoble on Nanotechnologies. 1 week of lectures, 1 week of practicals	<a href="https://www.esonn.fr/">https://www.esonn.fr/</a>	50	Scientific Community ;

Giulio Barbieri	CSIC-IMN	Participation to a conference	Oral	External activity	IEEE 22nd International Conference of Nanotechnology	4th July 2022 - 5 days	Presented an abstract submitted to the	<a href="https://2022.ieeenano.org/">https://2022.ieeenano.org/</a>	400	Scientific Community ;
Gizem Acar	ULANC	Participation to a conference	Oral	External activity	Semiconductor and Integrated OptoElectronics (SIOE) Conference	12/04/2022- 3days	I gave a talk about my project. The title was "Telecoms-wavelength LEDs: Combining GaSb quantum rings and Bragg (anti) reflectors for enhanced emission".	<a href="https://www.cardiff.ac.uk/conferences/sioe-conference">https://www.cardiff.ac.uk/conferences/sioe-conference</a>	200	Scientific Community ;
José M. Llorens	CSIC-IMN	Participation to a workshop	Oral	External activity	14th Annual Meeting Photonic Devices (AMPD)	28/04/2022 - 2	The Zuse Institut Berlin gathers every year experts and colleagues on advanced topics related to photonic devices. We presented our latest results on the design of a microcavity to enhance the emission of single-photon sources.	<a href="https://www.zib.de/workshop-photonic-devices/">https://www.zib.de/workshop-photonic-devices/</a>	70	Scientific Community ; Industry;
Borislav Petrovic	UWUE	Participation to a conference	Oral	External activity	DGKK/DEMBE	16.08.2022-3 days	Oral presentation of "InAsSb/GaSb/InAsSb W-shaped quantum wells for Interband Cascade Lasers"	<a href="https://www.uni-bremen.de/ifp/dgkk-dembe-2022">https://www.uni-bremen.de/ifp/dgkk-dembe-2022</a>	120	Scientific Community ; Industry;
Gizem Acar	ULANC	Participation to a conference	Oral	External activity	UK semiconductors conference 2022	06/07/2022- 2 days	distributed Bragg transmitter (DBT) for enhanced emission.	<a href="https://uksemiconductors.com/">https://uksemiconductors.com/</a>	300	Scientific Community ;
Xiuxin Xia	ULANC	Participation to a conference	Oral	External activity	UK Semiconductor Conference 2022	6th July to 7th July -2 days	I was selected for a oral presentation regarding ultraram scaling work progress at electronic device symposium. I took part in the conference and did a 15 minutes presentation and 3minutes for question asking.	<a href="https://uksemiconductors.com">https://uksemiconductors.com</a>	500	Industry;Scientific Community ;
Borislav Petrovic	UWUE	Participation to a conference	Oral	External activity	mirsens-5th international workshop on opportunities and challenges in mid-infrared laser based gas sensing	07/04/22-07/06/22 - 3 days	Participation-given talk: "InAsSb/GaSb	<a href="http://mirsensconference.org">http://mirsensconference.org</a>	100	Scientific Community ; Industry;

Takuma Sato	nextnano GmbH	Participation to a workshop	Poster	External activity	5th International workshop on opportunities and challenges in mid-infrared laser-based gas sensing	July/04-06, 2022 - 3 days	Presented our ongoing software development and collaboration with UWUE in the form of a poster. Networking with PhD students and professors specialized in the mid-infrared light source and photodetectors.	<a href="http://mirsensconference.org/">http://mirsensconference.org/</a>	50	Scientific Community ; Industry;
Takuma Sato	nextnano GmbH	Participation to a conference	Poster	External activity	EPS Forum 2022	June 2-3, 2022	Talks from technology industry, Nobel Laureates in Physics, Presentation of my research and exchange with other Ph.D. students in physics in the Europe	<a href="https://epsforum.org/">https://epsforum.org/</a>	300	Scientific Community ; Industry;Civil Society;
Takuma Sato	nextnano GmbH	Participation to a conference	Poster	External activity	International Quantum Cascade Lasers School & Workshop 2022	23-28 of August, 2022	Presented the ongoing Quantimony project as a poster	<a href="https://iqclsw.phys.ethz.ch/">https://iqclsw.phys.ethz.ch/</a>	100	Scientific Community ; Industry;
Lucie Leguay	TUB	Participation to a conference	Oral	External activity	DPG Meeting (Regensburg)	05-09-22 3d	short talk	-	-	Scientific Community ;
Takuma Sato	nextnano GmbH	Participation to a conference	Oral	External activity	The 83th JSAP Autumn Meeting 2022	20-23, September 2022	Present the ongoing research project in an oral session and discuss with participants	<a href="https://meeting.jsap.or.jp/english">https://meeting.jsap.or.jp/english</a>	6000	Scientific Community ; Industry;