POLITECNICO DI MILANO

Supervisory Board

Agenda

1) Communications to the Supervisory Board

2) Report on the status of :

- past deliverables and milestones
- recruitment
- past network events

3) Definition of training activities and responsibilities for 2016 (Webinars, Joint Journal Clubs)

4) Definition of outreach and dissemination activities

5) Deliverables and milestones WP1-6 (Months 13-30)

6) Next network events (Mid-term network meeting and summer school)

Communication I

1) **For each ESR: Researcher declaration**.
It must completed by each beneficiary (20 days after recruitment).

2) ESR should not directly pay for their tuition fees! (Research, Training and Networking costs)

3) Short-medium term secondment should be charged to the project and not to the ESRs' salaries! (Research, Training and Networking costs)

4) Questionnaires for the ESRs:
- at the end of the recruitment (evaluation questionnaire)
- two-years after recruitment (follow-up questionnaire)

5) A copy of the Grant Agreement should be handed to the ESR upon recruitment

Communication II

1) Acknowledgment of EU Funding; dissemination of results

Always remember to:

✓ Use EU emblem

A high resolution version of the emblems can be found at the following link:
http://europa.eu/about-eu/basic-information/symbols/flag/index_en.htm

✓ Use the text as indicated in the GA (in particular in the Acknowledgment section of publications):

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement no. 641789 MEDEA.

Supervisory Board: composition

1) Scientists in charge (beneficiaries and partner organizations) (22)

2) Workpackages Coordinators (11)

3) Prof. Nora Berrah (1)

4) Representative of the ESRs (1) :
Jan Lahl (Lund University)

Supervisory Board: role and vote

The role of the SB is :

- ✓ to define those criteria that will ensure the excellent quality of the research training program and to monitor its progress.

Vote per participant

- Scientists in charge:
  - Each Beneficiary (1 vote)
  - Each Partner organization (0.5 vote)
- Workpackages Coordinators (0.5 x WP co-coordinator)
- Prof. Nora Berrah (1 vote)
- Representative of the ESRs: Jan Lahl (1 vote)

Total: 23

Past deliverable and milestones

1) Deliverable 6.1 “**Supervisory Board of the Network**” (submitted)

2) Deliverable 5.1 “**Website design and development, and Social Media presence**” (submitted)

3) Deliverable 4.1 “**Training Methodology and plan**” (submitted)

4) Deliverable 5.2 “**Dissemination and outreach activities plan**” (due on the 01-11-2015)

5) Deliverable 6.2 “**Progress Report**” (due on the 01-02-2016)

Recruitment

Partner	Position Name (Starting date)	Partner	Position Name (Starting date)
POLIMI	ESR-POLIMI-1 **Aditya Pusala** (01-12-2015) ESR-POLIMI-2 (split into two positions approved by the project officer) *ESR-POLIMI-2 (24 months)* *ESR-POLIMI-3 (12 months)*	**AU**	ESR-AU-1 **James Pickering** (01-10-2015) ESR-AU-2 **Qingli Jing** (01-09-2015)
MBI	ESR-MBI-1 **Nils Monserud** (…) ESR-MBI-2 **Andres Felipe Ordonez Lasso** (15-09-2015)	**AMPL**	ESR-AMPL-1 **Anna Golinelli** (13-04-2015) **ESR-AMPL-2** **Not recruited yet**
LUND	ESR-LUND-1 **Jan Lahl** (01-04-2015) ESR-LUND-2 **Yu-Chen Cheng** (01-05-2015)	**CEA**	ESR-CEA **Alexandridi Christina-Anastasia** (01-10-2015)
DESY	ESR-DESY **John Melby** (not started yet)	**FORTH**	ESR-FORTH **Javier Diez Chamarro** (01-10-2015)
MPQ	**ESR-MPQ** **Not recruited yet**	**FEMTO**	ESR-FEMTO ESR selected (not started yet)

Recruitment

Two actions:

1) New advertisement of the two positions on mailing list and websites

- *SPECTROSCOPY-GROUP@JISCMAIL.AC.UK*
- *xlic-participants-l@uam.es*

- http://www.nature.com/naturejobs/science/
- http://brightrecruits.com/tiptop/
- http://www.eurosciencejobs.com/jobs/physics

2) Redistribution of ESR positions to other beneficiaries (if recruitment issues will be not solved)

Comments/suggestions

Past network events

✓ School in outreach activities 19-21 January 2015
Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci/ MUST)

✓ One-day training in the Photonics Explorer Kit
22 January 2015
EYEST (Nathalie Debaes and Tine de Pauw)

Training activities and responsibilities for 2016

✓ Webinars

Time Schedule		TOPIC	TITLE	GROUP IN CHARGE	Date - time	PRESENTER
2015	October	Principles of HHG and attosecond optics	Fundamental concepts in high-order harmonic generation	**LUND**	**October, 15 - 14:30**	Anne L'Huillier
	November		Characterization of trains of attosecond pulses	**CEA**	**November, 18 - 14:30**	Pascal Salières
	December		Generation and characterization of isolated attosecond pulses	**MPQ**	**December, 16 - 10:00**	Reinhard Kienberger
2016	January		Generation and characterization of	**FORTH**	January, 26 - 11:30	Dimitris Charalambidis
	February		High-power laser architecture	**AMPL**	February, 17 - 10:00	Please add name
	March		CEP stabilized laser systems	**FEMTO**	March , 16 - 10:00	Andreas Assion
	April	Attosecond dynamics in atoms and molecules	High-energy IR pulses and their applications	**POLIMI**	April, 20 - 10:00	Please add name
	May		Molecular alignment and orientation	**AU**	May, 18 - 10:00	Henrik Stapelfeldt
	June		**Attosecond delays in resonant photoionization**	**CEA**	June, 15 - 10:00	Lou Barreau
	July		Hole dynamics by HHG spectroscopy	**FVB**	July, 20 - 10:00	Please add name
	August		----			Please add name
	September		**Attosecond time delay in photoionization**	**LUND**	September, 21 - 10:00	Marcus Dahlström, Stockholm University
	October		Montecarlo wave packet simulations	**AU**	October, 19 - 10:00	Please add name
	November		Attosecond experiments in molecules	**POLIMI**	November, 16 - 10:00	Please add name
	December		Molecular dynamics under tunable femtosecond XUV pulses	**FVB**	December, 14 - 10:00	Please add name
	January		Application of intense attosecond pulses to time-resolved attosecond atomic and molecular dynamics	**FORTH**		Please add name
			Ultrafast electron and nuclear dynamics in small systems (helium and	**MAD**		

Training activities and responsibilities for 2016

✓ Joint Journal Clubs

✓ Supervision of two experienced scientists
- Lund: Johan Mauritsson
- Polimi: Giuseppe Sansone

✓ From February 2016 to July 2016
- Amplitude:
- Polimi/Lund: Johan/Giuseppe

✓ From September 2016 to January 2017
- Aarhus:
- MBI:

Comments/observations

Secondments

- ✓ Foreseen time schedule for secondments in the proposal and Grant Agreement (important for the first draft of the Career development plan)
- ✓ The secondments should be part of the Research project
- ✓ The time schedule and duration of the secondments can be readapted to the needs of the project
- ✓ Intersectoral secondment are mandatory (academia-private sector and viceversa);

Secondments to the outreach partners (MUST, EYEST) of the network

Comments/observations

Outreach activities: Photonics Explorer Kit

The outreach activities of the ESRs will be based on the introduction of the Photonics Explorer Kit (PEK) to **teachers** and **students** in secondary schools

1) Select a few secondary schools interested in the introduction of the PEK in their teaching activities

2) The ESR(s) will give a first training session to secondary school teachers on the PEK

3) The secondary school teachers **together** with the ESR(s) will introduce the PEK to the students

4) At the end of the network activities the PEKs will remain at the secondary schools

Outreach activities: next steps

1) The Coordinator will acquire from EYEST all PEKs

2) Each ESR will receive at least **four** PEKs

3) Each ESR already received **one** PEK at the end of the one-day training

4) The remaining PEKs will be sent directly to the hosting institutions.

5) Each ESR should deliver at least **eight** training sessions during his/her stay in the network

6) Do not forget to collect the evaluation forms!!

7) The ESR should start the outreach activity in **February-March 2016**

8) POLIMI will provide templates for:

- The agreement between the hosting institution and the secondary schools
- A report of the outreach activity

Outreach activities: PEK at POLIMI

Outreach structure adopted by POLIMI

1° meeting in secondary schools

- ✓ general presentation of the project, introduction to the PEK to the students
- ✓ topics covered interferometry, polarization, diffraction, module on the life of a scientist (statistics, guided discussion with the aim to stimulate the students' curiosity)

2° meeting in secondary schools

- ✓ one lesson on light sources (experimental work, statistical analysis and guided discussion)

3° meeting at Politecnico

- ✓ guided visits in the laboratories at the Physics Department that are involved in the Medea Project

Each meeting will have a duration of about 3 hours

Outreach activities

Alternative structure of outreach activities

- Outreach activities in countries different from those of the hosting institutions (language issues)

- Denmark ⇒ UK
- Sweden ⇒ Germany

- ESR should be in charge of taking contact and structuring the activities

- Outreach activities as part of the training activities or additional activity performed independently by the ESRs?

Comments/observations

Next Deliverables and Milestones: months (13-30)

WP 4: Training
WP 5: Outreach and dissemination
WP 1: Attosecond XUV spectroscopy
WP 2: Non-linear XUV spectroscopy
WP 3: HHG and ultrafast electron imaging
WP 6: Management

- Deliverables and milestones are related to the **entire network** (not only to a single or a few beneficiaries)

Deliverables WP 4: Training

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
	No deliverables				

Deliverables WP 5: Outreach and dissemination

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
	No deliverables				

Milestones WP 5: Outreach and dissemination

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS22	Contact with schools and teachers for outreach activities	POLIMI	Month 13 (31 January 2016)	Preliminary arrangements with schools and teachers for the planning of the outreach activities of the ESRs
MS23	Photonics Explorer Kit	POLIMI	Month 13 (31 January 2016)	Several "Photonics Explorer Kits" will be provided by EYEST (partner organization) for the outreach activities of the ESRs.

Deliverables WP 1: Attosecond XUV spectroscopy

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
D.1.1	High-repetition rate photoelectron spectroscopy	LUND	Report	Public	Month 24 (31 December 2016)
	Acquisition of photoelectron/photoion pump-probe data with full energy, angular and temporal resolution using the developed high repetition rate (200 kHz) attosecond source . The network will be involved in the development of new apparatuses and technologies for the generation of ultrashort XUV pulses including novel schemes for the stabilisation of the CEP of high-energy, high-repetition rate laser systems operating up to 10 kHz, the demonstration of thin-disk laser pump delivering up to E=200 mJ energy.				

Milestones WP 1: Attosecond XUV spectroscopy (1)

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS1	Demonstration of high repetition rate single attosecond pulse	ULUND	Month 24 (31 December 2016)	Demonstration of generation of high repetition rate (200 kHz) single attosecond pulses ✓
MS2	XUV/IR cross correlation	ULUND	Month 30 (30 June 2016)	Demonstration of XUV/ IR cross-correlation with attosecond stability
MS3	Novel design for regenerative amplifiers for the generation of CEP table pulses	AMPLITUDE	Month 24 (31 December 2016)	Demonstration of a novel arrangement for regenerative amplifiers with energy up to E=0.1 mJ. We exect to achieve a CEP-stability better than RMS<300 mrad ✓

Milestones WP 1: Attosecond XUV spectroscopy (2)

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS4	Montecarlo wavepacket technique	AU	Month 24 (31 December 2016)	Extension of the Monte Carlo wavepacket technique for the description of dissociative ionization to attosecond XUV-IR pump-probe Spectroscopy
MS5	Combination of high density valve with imaging detection	DESY	Month 22 (31 October 2016)	Integration of high density, high repetition valve optimized for generation of cold beams of aminoacids with detection system for photoelectron/ion angular distribution. The density of the conformer-selected molecular beams obtained with this apparatus will be estimated.
MS6	Molecule/surface interface imaging	MPG	Month 24 (31 December 2016)	Characterization of the molecule/surface interface by spectroscopictechniques

Deliverables WP 2: Non-linear XUV spectroscopy

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
D.2.3	Attosecond XUVpump-XUV-probe on molecules	FORTH	Report	Public	Month 24 (31 December 2016) ✓
	The ultrafast autoionization dynamics of small molecules such as H2/D2 (hydrogen and deuterium) will be characterized exploiting high-energy low repetition rate laser systems.				

Milestones WP 2: Non-linear XUV spectroscopy (1)

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS7	Award of beamtime at FELs-1	POLIMI	Month 30 (30 June 2016)	Award of beamtime at FELs for performing nonlinear XUV experiments ✓
MS8	Ultrafast pump-probe on helium droplets	AU	Month 24 (31 December 2016)	Combination of ultrashort IR and XUV or UV pulses with setup for the generation of helium droplets
MS9	Energy stability of the intense isolated attosecond pulse by CEP-stable pulses	FORTH	Month 22 (31 October 2016)	Characterization of energy stability of the intense isolated attosecond pulse. These pulses will be generated by CEP-stabilized driving pulses. Towards this goal we will investigate the CEP noise introduced by large-size compressors.

Milestones WP 2: Non-linear XUV spectroscopy (2)

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS10	Mechanical stability of new-designed optical mounts	AMPLITUDE	Month 24 (31 December 2016)	Test of mechanical stability of new developed optical mounts for improved CEP performances of CEP stable amplifiers. Towards the full characterization of CEP noises, a single shot method at high repetition rate will be implemented. ✓

Deliverables WP 3: HHG and ultrafast electron imaging

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
D.3.5	Improved HHG tomography of linear molecules	**POLIMI**	Report	Public	Month 16 (30 April 2016)
	HHG tomography strongly depends on the quality of alignment of molecules in cold gas jets. We will investigate strategies for a reliable reconstruction of molecular orbitals by HHG in simple linear molecules, even in presence of degraded alignment conditions.				
D.3.1	Structural and dynamical effects in HHG	**CEA**	Report	Public	Month 24 (31 December 2016)
	The interplay between structural and dynamical effects in high-order harmonic generation (HHG) spectroscopy will be elucidated. Advanced alignment techniques will be investigated for the implementation of high-order HHG-based tomography of nonplanar molecules. From the theoretical side, a simulation code for HHG-based spectroscopy of multi-electron dynamics will be developed, considering also the extended harmonic cut-off achieved using mid-IR systems as driving pulses.				

Milestones WP 3: HHG and ultrafast electron imaging

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS12	High-harmonic phase spectroscopy using mid-IR lasers	CEA	Month 24 (31 December 2016)	High-harmonic phase spectroscopy using a mid-IR driving laser for the extension of HH spectroscopy to lowionization potential targets
MS13	Two- and three dimensional molecular alignment	POLIMI	Month 24 (31 December 2016)	Characterization of two and three-dimensional degree of molecular alignment

Deliverables WP 6: Management

Deliverable number	Deliverable Title	Lead beneficiary	Type	Dissemination level	Due date (in months)
D.6.2	**Progress Report**	POLIMI	Report	Confidential	Month 13 (31 January 2016)
	This report will be focused on the status of the recruitment deliverables of the beneficiaries. It will be reviewed the preparation and content of the individual CDPs (starting from Month 8). The exact delivery date for the CDPs will depend on the recruitment date.				
D.6.3	**Mid-term review meeting**	POLIMI	Report	Confidential	Month 26 (28 February 2017)
	The mid-term review meeting will be organized with the beneficiaries and the partner organizations to review the technical and financial status of the network and to evaluate the overall progresses towards the accomplishment of the network's objectives.				
D.6.4	**Draft Periodic Report**	POLIMI	Report	Confidential	Month 24 (31 December 2016)
	Draft periodic report to be used during the midterm review meeting.				

Milestones WP 6: Management

Milestone number	Milestone title	Lead beneficiary	Due date	Content
MS25	Planned recruitment completed	POLIMI	Month 12 (31 December 2015)	Expected completion of the recruitment of all ESRs to be employed in the network ?!
MS26	Feeback on research/ training and dissemination/ outreach goals 1	POLIMI	Month 24 (31 December 2016)	Successful accomplishment of the research, training and dissemination/ outreach goals (Months 13-24)

Next events

Grant Agreement

	Event	Month
4	**Midterm review meeting/Summer School on ultra-intense radiation sources** in combination with the facility ELI-ALPS. Presentation given by Prof. Berrah. The meeting will conclude with an introduction to the design and operation of Even-Lavie valves given by Prof. Even.	24 FORTH/ PHOTEK

Midterm review Meeting

	Event	Lead participants	Month
4	**Midterm review meeting (also 3rd network meeting)** Talk given by Anne L'Huillier	AU	25
5	**One-day workshop**: application of fast digitizers (**CAEN)** pulsed valves (Even-Lavie valve) Detectors/VMI (**PHOTEK)**	AU-POLIMI	25

- ✓ Hosted by University of Aarhus (Henrik Stapelfeldt, Lard Madsen)
- ✓ Presentation by the ESRs

Midterm Review Meeting

1)

January 2017					
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
16	17	18	19	20	21
Midterm review meeting	Midterm review meeting	**One-day workshop**			

2)

January 2017					
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
16	17	18	19	20	21
		One-day workshop	Midterm review meeting	Midterm review meeting	

Comments/suggestions

Summer school on ultraintese laser sources

1)

	Event	Lead participants	Month
6	Summer school on ultraintense laser sources: In collaboration with ELI-ALPS	FORTH	**22 (October 2016)**

1) Pros: uniform distribution of events during the four years
2) Contras: not so much time for the organization

2)

	Event	Lead participants	Month
6	Summer school on ultraintense laser sources: In collaboration with ELI-ALPS	FORTH	**34 (October 2017)**

1) Pros: more time for the organization
2) Contras: two training schools close to each other

Comments/suggestions

Training school on innovation and technology management

	Event	Lead participants	Month
7	**Network meeting/Training school on innovation and technology management.** In addition there will be a Two-day introduction to high repetition rate, high power laser architecture and advanced schemes for carrier-envelope phase stabilization presented by **AMPL**, **FEMTO**, **VENT** and **TRUMPF**.	**AMPL, FEMTO, VENT, TRUMPF**	**36 (December 2017)**

We need to postpone this event to March-April 2018!?
Location: Amplitude, Evry (France)!?

Comments/suggestions

Summer school on ultraintese laser sources: location

- ✓ It is important to show synergy with other networks or large scale facilities
- ✓ We should secure the participation of students and speakers outside the network
- ✓ Number of participants: 40-50

1) Possibility

Location: Crete (organized by Dimitris Charalambidis)

ELI-ALPS could contribute with students and invited speakers

2) Possibility

Location: Szeged Hungary (organized by Dimitris Charalambidis and co-organized by ELI-ALPS)

Large participation of ELI-ALPS personnel would be secured

Comments/suggestions!

Summer school on ultraintese laser sources: title and topics

- ✓ Title of the school
- ✓ Attosecond physics and nanostructures
- ✓ Electron and ion acceleration
- ✓ THz pulse generation and applications
- ✓ Application of midIR pulses
- ✓ FELs (LCLS- SACLA)
- ✓ Involvement of other ELI-Pillars (ELI-Beamline / ELI-Nuclear Physics)

(I suggest to avoid talks on attosecond physics in atoms and molecules/ Webinars)

Comments/suggestions!

Thank you for your attention