

## Project information

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<b>Author(s)</b>	Antonio Bonucci
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V1	31 May 2023	Antonio Bonucci	



## D6.6 Report

Agenda	p.3
Participants	p. 7
Conclusion	p.5

## WP6 Workshop on undulator technology in the series WP6 meets industry

*Report, 31 May 2023*

In the framework of the activities of the European Project LEAPS-INNOV, the LEAPS pilot project to foster open innovation for accelerator-based light sources in Europe under the H2020 Call INFRAINNOV-04-2020, the Research to Business workshop “Development in undulator technology” took place in-person at IPAC 2023, in Venice, Italy.

This workshop follows a first edition, held the 21<sup>st</sup> September 2021. The development of undulator technology was presented, with focus on short period – high field, compact undulators, as well as measurement benches for low gap insertion devices. The presentations of prototypes development were illustrated together to the main developments in the LEAPS laboratory and the main technology platform of the participating companies.

In Venice, the update on the LEAPS-INNOV projects was given to a larger audience in terms of participating companies - more than 30 - with respect to the first workshop, taking advantage of the presence of many of them at the IPAC23. Most of questions from the audience to the presenters were of technological kind, in particular for the most advanced projects. The interest of companies was very high, as demonstrated by the number of questions, and by the long networking activity with bi-lateral meeting afterwards during the networking activity that took place after the technology presentations. The event aimed at the implementation of new strategies and activities for long-term partnerships between industry and the European light sources, synchrotrons and free-electron lasers, with their tens of thousands of users. The main final scope is that of strengthening highly specialized European companies for the market of light sources worldwide.

LEAPS-INNOV project fosters a partnership with European industry through co-innovation by offering joint technological developments and advanced research capabilities with LEAPS members for industry



as a collaborator and supplier. The interest of the company to be involved into knowledge and technology transfer, in order to contribute to the co-development of the LEAPS technology, expressed in bilateral meetings, shows that this kind of events can be a good opportunity for research centers to exploit their know-how developed during project activities.

The benefit of such exchange, fostered by either knowledge transfer or technology transfer, is to enlarge the pool of technology providers and suppliers, in particular in Europe, in the direction of technology sovereignty.

Workshop link : <https://indico.desy.de/event/37745/>

Event reference: <https://www.ipac23.org/>

Number of registered attendees: 51

WP6 leader and co-leaders:

Marie Emmanuelle Couprie (SOLEIL), Thomas Schmidt (PSI) and Simone Di Mitri (Elettra)

- *WP6.1 Antonio Bonucci (EU-XFEL) and Marco Peloi (Elettra)*
- WP6.2. Marco Calvi (PSI) & Gael Le Bec (ESRF)*
- *WP6.2.2 Mathieu Valteau (SOLEIL) & Dr. Benadberrahmane (ESRF)*
- *WP6.3.1 Ed Rial (HZB) & Marie Emmanuelle Couprie (SOLEIL)*
- *WP6.3.2 Hamed Tarawneh (MAX IV) & Thomas Schmidt (PSI)*
- *WP6.4.1 Dr. Ruzafa (ALBA-Cells) & Markus Tischer (DESY)*
- *WP6.4.2 Johann Baader, Sara Casalbuoni (EU-XFEL) & Mohammed Ebbeni (MAX IV)*

*Supporting materials: presentations, rollup posters of LEAPS and LEAPS-INNOV, LEAPS-INNOV roadmap cards*

### **Agenda**

- Presentations in “Sala Mosaici”
- Welcome and introduction by Antonio Bonucci
- Presentation of the transversal projects in WP6 of LEAPS-INNOV
- *High Temperature Superconductive Undulator Technology (Dr. Calvi & Dr. Le Bec)*



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- *Cryogenic Permanent Magnet Undulator (Dr. Valleau & Dr. Benadberrahmane)*
- *Cryogenic APPLE III (Dr. Rial & Dr. Couprie)*
- *Cost-effective, compact APPLE X (Dr. Tarawneh & Dr. Schmidt )*
- *Small aperture hall probe bench (Dr. Ruzafa & Dr. Tischer)*
- *Pulsed wire measurement bench (Dr. Baader, Dr. Casalbuoni & Dr. Ebbeni)*
- Buffet /Networking



**Participants** (31 company participants of 50 participants total)

Name	Affiliation	Country
Maria Alvarado Martin	AVS	Spain
Florent Argod	Teledyne	France
Johann Baader	Eur.XFEL (European XFEL)	Germany
Henning Bach Christensen	DANFYSIK	Denmark
Andrea Bellandi	DESY	Germany
Philipp Berger	SmarAct GmbH	Germany
Antonio Bonucci	European XFEL	Germany
Marco Calvi	PSI	Switzerland
Jose Miguel Carmona	AVS	Spain
Andrea Ceracchi	CECOM Srl	Italy
Marie Emmanuelle Couprie	Synchrotron SOLEIL	France
Domenico D'Andrea	Renaissance Fusion	France
Simone Di Mitri	Elettra Sincrotrone Trieste	Italy
Bruno Diviacco	Elettra - Sincrotrone Trieste	Italy
Harri Eriksson	Luvata Pori Oy	Finland
Gorka Esteve	Neureus Technologies - EPOWERSYS	Spain
Eric Fanio	SEF	France
Susana Fernández	Nortemecanica S.A.	Spain
Jose Oscar Fernandez Lorences	Fagor Automation	Spain
John Fischer	Safran N&T	France
Raffaella Geometrante	Kyma SpA	Italy
Vanessa Grattoni	Eur.XFEL (European XFEL)	Germany
Michael Holz	MAX IV Laboratory	Sweden
Michel Hübner	EPFL	Switzerland
Udo Klein	AXILON AG	Germany
Mirko Kokole	Kyma Tehnologija d.o.o.	Slovenia
Marcus Lau	TRUMPF Hüttinger GmbH + Co. KG	Germany
Gael Le Bec	ESRF - The European Synchrotron	France
SEBASTIEN LONGELIN	SIGMAPHI	France
Enrico Maccallini	SAES GETTERS S.p.A.	Italy
Olivier Marcouille	Synchrotron SOLEIL	France
Emanuele Massarelli	EEL Spa	Italy
Kacper Matuszynski	Teledyne SP Devices	Germany
Federico Nguyen	ENEA	Italy
Antonio Pellecchia	ASG Superconductors spa	Italy
Marco Pelloi	Elettra Sincrotrone Trieste	Italy
Christian Piel	RI	Germany
Christian Pirotte	Jema sa	Belgium
Jure Pockar	Kyma	Italy



Dragana Popovic Renella	SENIS Group, Switzerland	Switzerland
Ed Rial	HZB	Germany
Urban Rohrmann	Vacuumschmelze GmbH & Co KG	Germany
Ronny Roth	EWCON R&D Sweden AB	Sweden
Gustavo Sarmiento	SUPRASYS	Spain
paolo scarbolo	CAEN ELS	Italy
Thomas Schmidt	PSI	Switzerland
OLIVIER TASSET MAYE	SIGMAPHI	France
Claude Troesch	JEMA France	France
Nathanael Trumper	UHV Design	United Kingdom
Michael Weickmann	Vacuumschmelze GmbH & Co KG	Germany

## Dissemination of results



The resonance and traction the social media posting of this workshop had further supports the success evidence. Verbal and written feedback from the participants have been generally complimentary and very positive.



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**Antonio Bonucci** • Tu

Head of Industrial Liaison Office and In-kind Contribution presso European XFE...

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Another great LEAPS-INNOV event on undulator technology, this time at #IPAC 2023 in Venice. Thank you to everyone from industry and LEAPS who participated and contributed to this topic.

 64

3 commenti • 6 diffusioni post

 Consiglia Commenta Diffondi il post Invia 2.284 impressioni[Vedi statistiche](#)

### Conclusion

The participants showed abundant interest in the topics covered by the workshop. Bilateral meetings with leaders of the most interesting transversal projects for possible technology transfer or industrial collaborations took place as encouraged during the first workshop, which was virtual.



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This task will continue with a third workshop of similar scale and scope, as well as bilateral meetings with related transversal project leaders. Further dissemination through external presentations and discussions is expected. Furthermore, leaders of the transversal projects submitted a review of their activities which will be shared externally, which is being collated by the WP leaders. Goals for the next phase include collaboration on a particular technology transfer and possible development of a generic LEAPS technology transfer model, as outlined in the proposal. This activity will remove roadblocks and bottlenecks and enable more efficient component co-creation.

Due to the low technology readiness level of the main proposal, the exploitation way could be mainly based on secondment or shared resources of companies during the facility development to facilitate the knowledge transfer. There is an effort for both sides to look for the right moment for integration of such a model.

