

## DUBBLE user meeting March 6, 2020

It is our pleasure to announce the first DUBBLE user meeting after the 2019 ESRF shutdown. The meeting will take place at the Palace of Academies in Brussels (Hertogstraat 1, 1000 Brussels), located within walking distance of Brussels Central Station.

### *Context*

From the interaction of synchrotron X-ray beams with matter it is possible to deduce the structure, chemical state & composition of substances *operando* and *in situ* from atomic to macroscopic length scales and timescales ranging from sub-milliseconds to hours. Using this knowledge, scientists and engineers are able to design new materials and advanced electronic components such as improved solar cells. Such studies can also reveal what our planet is made of, what processes sustain life and what secrets are hidden beneath the surface of old paintings. Others use the outcome of synchrotron based research to develop more tasty and healthy food or find new ways to help combat life-threatening diseases.

Belgium and the Netherlands contribute to the European Synchrotron Radiation Facility (ESRF) in Grenoble (France) via the Belgian-Dutch consortium Benesync. As a result, Dutch and Belgian researchers are entitled to a share of the measuring time on the ESRF public beamlines. Such membership also allows constructing and exploiting so-called CRG (Collaborating Research Group) beamlines at the ESRF storage ring.

The Netherlands (via NWO) and Flanders (via FWO-Vlaanderen) fund and exploit DUBBLE, the Dutch Belgian CRG Beamlines at BM26 for SAXS/WAXS and GISAXS and at BM14 for XANES/EXAFS and  $\mu$  XRF. Under the beam time exchange agreement between DUBBLE and the Swiss-Norwegian CRG it is also possible to perform high resolution powder diffraction experiments. As such, DUBBLE provides priority access to a state-of-the-art synchrotron facility for Dutch and Flemish users.

Since the beginning of 2019, the ESRF has completely rebuilt its accelerator in the context of the Extremely Brilliant Source project (EBS-project). Through the EBS upgrade (an ESFRI landmark), the public beamlines will be provided with up to 100 times more coherent and brilliant X-ray beams. The DUBBLE beamlines are also going through an extensive upgrade to take full advantage of the increased source brilliance.

The call for experimental proposals at the ESRF public beamlines is currently open with a submission deadline of March 1. The call for projects at DUBBLE will be launched soon and will have a submission deadline of April 1. Approved experiments will commence from August 2020 onwards.

### *The DUBBLE user meeting on March 6*

The DUBBLE user meeting is divided into an informative morning session, a scientific afternoon session and extensive opportunities for informal discussions during the lunch and reception. Registration starts at 9:30 AM.

1. *The informative morning program (10:20-12:30)*: Dr. Jean Susini will present the current status of the ESRF EBS upgrade, the ESRF research director of Life Science. Dr. Roelof Van Silfhout, designer of the upgraded DUBBLE beam lines, will outline the expected new capabilities and Dr. Dipanjan Banerjee, the DUBBLE project leader, will provide you with a status update on the current upgrade activities and how this should be taken into account when submitting proposals for experiments. Finally, Prof. Bart Goderis, the DUBBLE steering committee chairman, will update you on the potential future of the DUBBLE beam lines in

particular the future beyond 2021 when NWO will no longer be a partner in the DUBBLE project.

2. *The scientific afternoon session (14:00 – 16:00)*: Established scientists will give you a flavour of the great diversity of scientific matters that have been benefitting from experiments at synchrotron sources. The relevance of the approaches provided by the DUBBLE beam lines will be highlighted.
3. *The informal discussion sessions*: During the lunch (12:30 – 14:00) and reception (16:00 – 17:30) sessions, informal discussions can take place. To facilitate the discussion, the opportunity is offered to present your scientific achievements or future aspirations and ideas by means of a poster.

#### *Who should attend?*

1. Experienced ESRF and DUBBLE users who wish to align their future experiments to the new possibilities offered by the EBS upgrade
2. Potential new users who wish to be informed on what the ESRF and DUBBLE can offer for their research
3. Potential new users, seeking discussion or collaboration with experienced users
4. Experienced and new users who wish to discuss the feasibility of new scientific programs with the beam line staff
5. Dutch and Belgian Scientist (including scientist from the French speaking part of Belgium) who wish to explore new kinds of DUBBLE partnerships in a future beyond the end of 2021.

This meeting is organized by the promoters of the FWO-Vlaanderen IRI project, *The DUBBLE Beam Lines at the ESRF: Extremely brilliant X rays for revealing the structure and function of atoms, molecules and materials*:

Prof. B. Goderis, Prof. Dr. K. Temst and Prof. Dr. C.E.A. Kirschhock (KU Leuven); Prof. Dr. L. Vincze, Prof. Dr. D. Poelman, Prof. Dr. C. Detavernier (Universiteit Gent); Prof. Dr. K. Janssens (Universiteit Antwerpen); Prof. Dr. M.K. Van Bael (Hasselt University); Prof. Dr. Ir. H. Terryn (Vrije Universiteit Brussel), Dr. S. McMitchell (IMEC) and Dr. R. Snellings (VITO).



Financial support, facilitating access to the ESRF and DUBBLE, is provided by



## March 6 program DUBBLE user meeting

09:30 – 10:20 registration and coffee

10:20 – 10:30 welcome

10:30 – 11:10 ESRF upgrade – public beam lines (**Jean Susini**, ESRF director life sciences)

11:10 – 11:30 The future of DUBBLE (**Bart Goderis**, chairman DUBBLE steering committee)

11:30 – 12:10 The new DUBBLE Beamlines (**Roelof Van Silfhout**, DUBBLE beam line design)

12:10 – 12:30 Status DUBBLE beamlines & first call (**Dipanjan Banerjee**, Project leader DUBBLE)

12:30 – 14:00 Lunch + coffee + posters + informal discussions

Option 1	Option 2
14:00 – 14:30 Science 1	14:00 – 14:20 Science 1
14:30 – 15:00 Science 2	14:20 – 14:40 Science 2
15:00 – 15:30 Science 3	14:40 – 15:00 Science 3
15:30 – 16:00 Science 4	15:00 – 15:20 Science 4
	15:20 – 15:40 Science 5
	15:40 – 16:00 Science 6

16:00 – 17:30 Reception + posters + informal discussion