



## Experiment Report Form

**The double page inside this form is to be filled in by all users or groups of users who have had access to beam time for measurements at the ESRF.**

Once completed, the report should be submitted electronically to the User Office via the User Portal:  
<https://www.esrf.fr/misapps/SMISWebClient/protected/welcome.do>

### Deadlines for submission of Experimental Reports

Experimental reports must be submitted within the period of 3 months after the end of the experiment.

#### Experiment Report supporting a new proposal (“relevant report”)

If you are submitting a proposal for a new project, or to continue a project for which you have previously been allocated beam time, you must submit a report on each of your previous measurement(s):

- even on those carried out close to the proposal submission deadline (it can be a “*preliminary report*”),
- even for experiments whose scientific area is different from the scientific area of the new proposal,
- carried out on CRG beamlines.

You must then register the report(s) as “relevant report(s)” in the new application form for beam time.

### Deadlines for submitting a report supporting a new proposal

- 1<sup>st</sup> March Proposal Round - **5<sup>th</sup> March**
- 10<sup>th</sup> September Proposal Round - **13<sup>th</sup> September**

The Review Committees reserve the right to reject new proposals from groups who have not reported on the use of beam time allocated previously.

#### Reports on experiments relating to long term projects

Proposers awarded beam time for a long term project are required to submit an interim report at the end of each year, irrespective of the number of shifts of beam time they have used.

#### Published papers

All users must give proper credit to ESRF staff members and proper mention to ESRF facilities which were essential for the results described in any ensuing publication. Further, they are obliged to send to the Joint ESRF/ ILL library the complete reference and the abstract of all papers appearing in print, and resulting from the use of the ESRF.

Should you wish to make more general comments on the experiment, please note them on the User Evaluation Form, and send both the Report and the Evaluation Form to the User Office.

### Instructions for preparing your Report

- fill in a separate form for each project or series of measurements.
- type your report in English.
- include the experiment number to which the report refers.
- make sure that the text, tables and figures fit into the space available.
- if your work is published or is in press, you may prefer to paste in the abstract, and add full reference details. If the abstract is in a language other than English, please include an English translation.



	<b>Experiment title:</b> Microbeams induce rearrangements of the cortical microvessels in Control and Chronic Pain rats	<b>Experiment number:</b> MD-988
<b>Beamline:</b> ID17	<b>Date of experiment:</b> 20 January 2017 / 21 January 2017 ; 05 February 2017 / 07 February 2017	<b>Date of report:</b> 05/03/2020
<b>Shifts:</b> 12	<b>Local contact(s):</b> Hervig Requardt, Elke Braeuer-krisch	<i>Received at ESRF:</i>
<b>Names and affiliations of applicants</b> (* indicates experimentalists): Gabriele E. M. Biella <sup>1*</sup> , Antonio G. Zippo <sup>1*</sup> , Veronica Del Grosso <sup>2*</sup> , Paola Coan <sup>3*</sup> , Alberto Bravin <sup>2*</sup> <ol style="list-style-type: none"><li>1. Institute of Molecular Bioimaging and Physiology, Consiglio Nazionale delle Ricerche, Milan, Italy</li><li>2. European Synchrotron Radiation Facility, Grenoble, France</li><li>3. Ludwig-Maximillian University, Munich, Germany</li></ol>		

**Report:**

The MD-988 experiment has produced a set of consistent evidences showing the efficacy of the *in vivo* X-ray synchrotron microbeam irradiation treatment which generated analgesia in rodent models of chronic pain. The manuscript containing all obtained results (entitled “Removal of behavioural and electrophysiological signs of chronic pain by *in vivo* microsections of rat somatosensory cortex with parallel X-ray microbeams”) is currently under review and can be downloaded at <https://doi.org/10.1101/528539> . In conjunction we performed complementary investigations on the vascular system of the primary somatosensory cortex (S1) which is one the topmost brain region interested by chronic pain disfunctions. We found a copious angiogenesis of small microvessels (with a diameter smaller than 10  $\mu\text{m}$ ) in the S1 region of chronic pain animal models. In order to present such results we wrote a manuscript entitled “Chronic pain alters microvascular architectural organization of somatosensory cortex” that is currently under review and can be downloaded at <https://doi.org/10.1101/755132> .