

## 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 using the **Electronic Report Submission Application:**

<http://193.49.43.2:8080/smis/servlet/UserUtils?start>

### ***Reports supporting requests for additional beam time***

Reports can now be submitted independently of new proposals – it is necessary simply to indicate the number of the report(s) supporting a new proposal on the proposal form.

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.


### **Deadlines for submission of Experimental Reports**

- 1st March for experiments carried out up until June of the previous year;
- 1st September for experiments carried out up until January of the same year.

### **Instructions for preparing your Report**

- fill in a separate form for each project or series of measurements.
- type your report, in English.
- include the reference number of the proposal 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> Poly(N,N)dimethylacrylamide Hydrogels Polymerized in AOT/water lyotropic systems	<b>Experiment number:</b> 16-02-39
<b>Beamline:</b>	<b>Date of experiment:</b> from: 25/04/2009 to: 28/04/2009	<b>Date of report:</b>  <i>Received at ESRF:</i>
<b>Shifts:</b>	<b>Local contact(s):</b> Dr. Francois FAUTH	
<b>Names and affiliations of applicants</b> (* indicates experimentalists):  <b>Isabel Esteban Pacios</b>  <b>Carmen Sánchez Renamayor</b>		

## Report:

**Abstract.** Hydrogels of polydimethylacrylamide (PDMAA) crosslinked with bisacrylamide (BA) are synthesized in mixtures of bis(2-ethylhexyl) sulfosuccinate sodium salt (AOT) and water with different concentrations. Before polymerization all samples are isotropic. They become anisotropic due to a phase separation process induced by polymerization. The polymer, which stays in an isotropic microphase, induces the formation of a segregated AOT/water microphase containing ordered domains. These ordered domains present lamellar, cubic, and hexagonal lyotropic organizations, depending on the AOT concentration in the initial isotropic mixture. The lattice parameter of these ordered phases has been analysed as a function of the composition of the microphases, which has been determined using a simple model, assuming that there is an interaction between the surfactant and the cross-linker that produces a distribution of the AOT between both the polymer rich phase and the lyotropic domains.