



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.



	Experiment title: Structure vs Performance	Experiment number: ME161
Beamline: ID11	Date of experiment: from: 26 th Sept 2001 to: 29 th Sept 2001	Date of report: 31 st August 2002
Shifts:	Local contact(s): DR. A. Terry	<i>Received at ESRF:</i>
Names and affiliations of applicants (* indicates experimentalists): Tosca Corstjens (*) P. Magusin Sanjay Rastogi (*)		

Report:

Gels of syndiotactic polystyrene with different solvents have been compared to clathrates. Wide-angle X-ray diffraction results using toluene (good solvent for sPS) and decalin (relatively poor solvent for sPS) show that the structure of the crystalline junctions of the gels is similar to that of the clathrate δ -phase. A difference can be found in the width of the (010) reflection, which is, relative to the width of the $(\bar{2}10)$ reflection, much broader for the gel than for the clathrate. This is caused by the difference in mechanism involved for crystal formation in gels and clathrates.

Experiments performed on quenched samples of syndiotactic polystyrene with the monomer benzylmethacrylate show that also for this gel the structure of the crystalline part is similar to that of the clathrate phase. This means that solvent is present in both the crystalline and the amorphous part of the gel. By solid-state NMR studies a clear difference in mobility of solvent molecules in the crystalline and amorphous parts of the gel has been observed.

For details please see: *Macromolecules* 2002, 35, 6630-6637.

