

## **Biophysical Instrumentation Facility Newsletter No 1, January 2010**

This is the first in a series of newsletters to keep users of the Biophysical Instrumentation Facility up to date on developments and techniques available. Although based in the Biochemistry Department the Facility was established as a resource for members of all Departments and also welcomes researchers from outside the University.

The Facility's core equipment enables characterization and interaction studies on macromolecules especially proteins, but we are always interested in new applications for the existing instruments. To provide users with ideas we will be giving brief descriptions of the work some researchers are doing in future newsletters to illustrate some of these new techniques. We will also be advertising demonstrations, workshops or talks that are being organised through the Facility and we hope that these will be regular events.

### ***Equipment update:***

The electrospray mass spectrometer is proving very popular, with many researchers now using it as a self-service facility. In a recent development, we have also carried out negative ion mode electrospray for the accurate mass determination of oligonucleotides in collaboration with Martin Cohn. This is now offered as a routine service. Go to:

<http://users.ox.ac.uk/~bioc0126/Apfel et al 1997.pdf>

for further details.

### ***Upcoming demonstrations***

From 1st to 12th March we will have the new Biacore T100 software on demonstration. This upgrade allows single cycle binding experiments without the need to regenerate the sensor surface and will be of particular interest to those working with proteins that are too unstable to be used in the traditional SPR experiments. Please let me know if you would like to try these single cycle experiments before the 1<sup>st</sup> of March so we can book time on the instrument. Go to:

<http://users.ox.ac.uk/~bioc0126/Biacore T100Software 2.pdf>

for further details.

### ***Future workshops***

We are currently organising a workshop to be held in the Biochemistry Department from 20-24 September 2010 on the analysis software SEDPHAT/SEDPHIT written by Peter Schuck of the NIH. Although originally designed for analysing analytical ultracentrifugation data, it is now being used for a wide range of biophysical techniques including ITC, SPR, and DLS.

This workshop will review strategies for hydrodynamic and thermodynamic analysis of sedimentation equilibrium and sedimentation velocity analytical ultracentrifugation (AUC), dynamic light scattering (DLS), isothermal titration calorimetry (ITC), fluorescence spectroscopy (anisotropy (FAI) and quenching isotherms), and optical biosensing (SPR) for the characterization of biological macromolecules in solution and their interactions.

The 5-day course will include laboratory demonstrations and lectures from the participants and will be of interest to both new and established researchers using biophysical techniques. For detailed information, see <http://users.ox.ac.uk/~bioc0126/>

Spaces on the workshop are limited so please let me know if you interested in attending.

The new dedicated lab space in the basement of the New Biochemistry Building (00.073) is a great success and I think everyone will agree that this change is a big improvement on the old lab in Rex Richards. We are grateful to the Fell Fund for their support in setting up the Facility and to the BBSRC through the Oxford Centre for Integrated Systems Biology and members of the Biochemistry Department for additional funding and the use of their instruments.

[David Staunton](#)