

NSLS Course on EXAFS Data Collection and Analysis

September 23 - 25, 2002

The first ever NSLS hands-on EXAFS Data Collection and Analysis Course was a resounding success! Twenty-eight students participated in the course held September 23-25, 2002. The course was co-organized by Simon Bare (UOP LLC), Bruce Ravel (Naval Research Laboratory) and Syed Khalid (NSLS), with administrative support by Lisa Tranquada (SFA, Inc.), and held at the NSLS.

The three-day course was divided into two mornings of lectures, two afternoons of hands-on data collection using six different NSLS spectroscopy beamlines (X9B, X11A, X18B, X19A, X23B, and X26A), and one full day of data analysis. The instructors on the NSLS beamlines were beamline scientists Nebojsa Marinkovic, Kaumudi Pandya, Wolfgang Caliebe, Syed Khalid and Tony Lanzirotti as well as Scott Calvin from NRL.

The morning lectures were given by Matt Newville (University of Chicago), Rob Scarrow (Haverford College), Simon Bare (UOP LLC), Bruce Ravel (NRL), Shelly Kelly (Argonne National Laboratory), Anatoly Frenkel (Yeshiva University), Grant Bunker (Illinois Institute of Technology), and Trevor Tyson (New Jersey Institute of Technology) on topics ranging from sample preparation and data collection to EXAFS data analysis and interpretation of XANES spectra.

The participants attending the course were both diverse in their scientific disciplines and in their geographic location and represented universities, national laboratories and industry. They attended the lectures in the morning, then were divided up into small groups by research discipline to conduct the experimental part of the course. Each student became familiar with beamline operation and collected data on standard materials as well as on samples from their individual research projects. On the final day, the participants learned data analysis techniques in a computer laboratory established specially for the course. The participants also enjoyed ample time for informal discussion over coffee and in the evenings over meals and drinks.

There was a tremendous amount of information disseminated over the three days. All the participants left the course with new friends and armed with the basic tools to apply x-ray absorption spectroscopy to their own research.

The course was sponsored by the NSLS, with partial support by Oxford-Danfysik and Canberra.

It is hoped that the course will be offered again in 2003 - stay tuned for more information!

-Simon Bare



Workshop Participants