



**BILKENT UNIVERSITY**  
**MOLECULAR BIOLOGY-GENETICS & PHYSICS**  
**DEPARTMENTS JOINT SEMINAR**

**X-ray scattering and its biological applications (\*)**

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& UNAM, Bilkent University, Ankara, Turkey*

Modern X-ray scattering techniques as applied to Biology cover a large frontier from protein crystallography to small angle x-ray scattering, picosecond time-resolved diffraction to inelastic x-ray scattering, and diffraction-enhanced imaging. Progress in x-rays and synchrotron radiation had significant influence on the development of modern biology, starting with the discovery of atomic structure of DNA in 1953, and lately in Kornberg's discovery of the transcription process for making mRNA, in both cases resulting in Nobel Prizes. In this presentation, I would like to emphasize the role of synchrotron radiation and present our own work of using inelastic x-ray scattering with resolution power exceeding  $10^7$ - $10^{12}$  to study atomic and collective behavior of atoms, molecules, model compounds like porphyrins, lipids, proteins and enzymes.

(\*) Work performed in collaboration with W. Sturhahn, H. Sinn, T. Toellner, J. Zhao, A. Alatas, A. Said, and H. Yavas, all of Argonne National Laboratory, S. H. Chen of MIT, T. Sage of Northeastern University, R. Scheidt of University of Notre Dame and S. Durbin of Purdue University. This work is supported by US DOE-BES Materials Science under contract number W-31-109-ENG-38.

**Date:** October 15, 2008 (Wednesday)

**Time:** 15:40

**Place:** Faculty of Science Building **B, Room Z14** – Note the room change!

*Tea and cookies will be served after the seminar. All interested are cordially invited.*

**LÜTFEN DUYURUNUZ**  
**PLEASE ANNOUNCE**