

APS COLLOQUIUM

Distinguished scientists in all disciplines are invited to lecture on topics of general interest. Objectives include the cross-fertilization of research initiatives at various institutions and the identification of possible uses of the Advanced Photon Source.

When: First Wednesday of each month at 3:00 p.m.

Where: Building 402, APS Auditorium

Refreshments served at 2:45 p.m.

Wednesday, November 5, 2003

Dorte Juul Jensen

*Center for Fundamental Research
Riso National Laboratory, Denmark*

“Metal Structures in Four Dimensions”

Biography:

Dorte Juul Jensen is currently head of the Center for Fundamental Research: Metal Structures in Four Dimensions, at Risø National Laboratory in Denmark. Her prime interest has been advancing the understanding of metal structures. Her ideas have led to the development of several new experimental techniques based on neutron diffraction, electron microscopy, and synchrotron x-ray diffraction. These techniques have all been designed to enable experimental quantification of parameters, which otherwise could not be determined. In 1997 Dorte Juul Jensen became the first female Dr. Techn. in Denmark. She is editor of Scripta Materialia.

Abstract:

High energy x-rays from third-generation synchrotron sources have made it possible to perform time-resolved studies of internal structures in opaque crystalline materials. The new synchrotron-based techniques now make practical in situ determination of three-dimensional structures over time, while exposing a material to external stimuli such as stress or temperature. The new techniques have produced experimental data on materials whose properties previously could only be addressed theoretically. Metals are used to illustrate the potential usefulness of the method. The state of the art time-resolved data obtained by other experimental methods are summarized and new possibilities are described. Dr. Jensen's talk will focus on unprecedented results on length scales from a nanometer to a submillimeter.

<http://www.aps.anl.gov/conferences/APSColloquium>