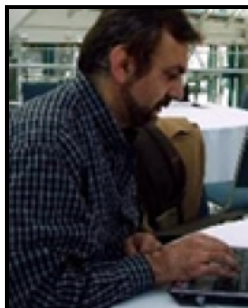




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Special Guest Lectures

Nanostructure by High-Energy XRD and Atomic Pair Distribution Functions**Valeri Petkov, Central Michigan University**

Professor

Johnston Hall 218
June 01, 2011 - 02:30 pm**Abstract:**

Knowledge of the atomic-scale structure is an important prerequisite to understanding, predicting and improving properties of materials. With bulk materials it is easily obtained by traditional (Bragg) x-ray diffraction. However, when the physical size of materials is reduced to nanoscale dimensions Bragg x-ray diffraction is difficult to apply. The reason is that the diffraction patterns of nanosized materials show a limited number of Bragg peaks, if any, and a very pronounced diffuse component. The problem may be solved by employing a non-traditional approach involving high-energy x-ray diffraction and atomic pair distribution function data analysis. In the talk, the essentials of this approach will be introduced and its great potential demonstrated with results from several recent studies on nanostructured metallic (Au and PtPd), oxidic (BaTiO₃, V₂O₅, TiO₂, Fe₂O₃), semiconductor (CdTe, PbSe) and organic (PAMAM dendrimers) materials. Live presentation is at SC 2049, UNO. 218 Johnston Hall will have Access Grid viewing.

Speaker's Bio:

Dr. Petkov received both his Masters and Ph.D. from the University of Sofia in Bulgaria. His research fields include: applied crystallography, X-ray (synchrotron) diffraction, 3-D structure determination & modeling, and magnetism

