



PONDICHERRY UNIVERSITY
School of Physical, Chemical & Applied Sciences
Department of Physics

Invited Lecture

On

**Structure, Optical Properties and Phonons in
Cd(1-x)Ca(x)O Alloys**

by

Dr. Sharat Chandra
IGCAR, KALPAKKAM

Date: 22nd February 2012.

Time: 3.30 PM

Venue: Raman seminar Hall, Dept. of Physics.

All are invited

Head of the Department of Physics

Abstract

Structure, Optical Properties and Phonons in $\text{Cd}(1-x)\text{Ca}(x)\text{O}$ Alloys

$\text{Cd}(1-x)\text{Ca}(x)\text{O}$ is a substitutional alloy where the Cd atoms are substituted randomly by Ca atoms in the NaCl type crystal structure. We have studied the structural, optical and vibrational properties of this system and quantified the observed behaviour in terms of the disorder induced in the system by the random substitutions. Experimental results obtained from the XRD, EXAFS, Optical absorption, PL and Raman techniques have been supplemented by the DFT calculations of properties of these random alloys. These calculations help us in achieving an understanding of the underlying disorder and how it affects the observed properties.