



	Experiment title: Pair distribution Function of Semiconductor Nanoclusters in Zeolites	Experiment number: HS-3335	
	Beamline: ID31	Date of experiment: from: 01/09/2007 to: 05/09/2007	Date of report: 8.1.2009
	Shifts:	Local contact(s): Dr. Michela Brunelli	<i>Received at ESRF:</i>
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Abstract:

Structural studies done on HgSe nanoclusters fabricated in the pores of two types of zeolite frameworks, LTL (tubular pore) and Nd-Y (nearly spherical pore), are presented. Nanoclusters were synthesized in these zeolite frameworks via chemical vapor deposition. Anomalous X-ray scattering (AXS) studies were performed on both HgSe/zeolite-Y and HgSe/zeolite-L systems. As a result, we present two distinct structural models for NdY/HgSe and LTL/HgSe systems. A remarkable feature present in our X-ray diffraction (XRD) patterns, diffuse scattering, will also be discussed using our initial results of the atomic pair distribution function (PDF) studies. X-ray structural work is complemented using the results of optical and Raman studies.

Published as:

X-Ray Scattering Studies of HgSe Nanoclusters in Zeolite
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W. DONNER, M. BRUNELLI, A.J. JACOBSON, and S.C. MOSS
METALLURGICAL AND MATERIALS TRANSACTIONS A,
Volume: 39A Issue: 13 Pages: 3179-3183 Published: DEC 2008