EuroSciCon

October 04-06, 2018
Amsterdam, Netherlands

EuroSciCon Conference on
Nanotechnology & Smart Materials

Nano Res Appl Volume:4
DOI: 10.21767/2471-9838-C6-025

CALORIMETRIC MEASUREMENT OF INTERFACE ENTHALPY OF NANOCRYSTALLINE SILVER (I) OXIDE (AG2O)

Khansaa Al-Essa[1, 2], A V Radha[1] and Alexandra Navrotsky[1]

[1]Peter A Rock Thermochemistry Laboratory and NEAT ORU (Nanomaterials in the Environment, Agriculture, and Technology Organized Research Unit), University of California at Davis, USA
[2]Jerash University, Jordan

The interface enthalpy of nanocrystalline silver (I) oxide ($Ag_2O.nH_2O$) was measured. $Ag_2O.nH_2O$ nanocrystalline samples of varying surface areas and degrees of agglomeration were synthesized by wet chemical technique. Interface areas were estimated by comparing the surface areas measured by N_2 adsorption to the crystallite sizes refined from X-ray diffraction data. The interface enthalpy was verified by utilizing thermodynamic cycle, using enthalpy of solution measurements in 25% HNO3 at room temperature solution calorimetry. The interface enthalpy of the nanocrystalline $Ag_2O.nH_2O$ is (0.842±0.508 J/m2). This work provides the first calorimetric measurement of the interface enthalpy of nanocrystalline silver (I) oxide ($Ag_2O.nH_2O$).

Khansaa.essa@gmail.com
k.essa@jpu.edu.jo