Synthesis of CdO Nanoparticles Satring from New Organic-CdI_2 Complex Sources

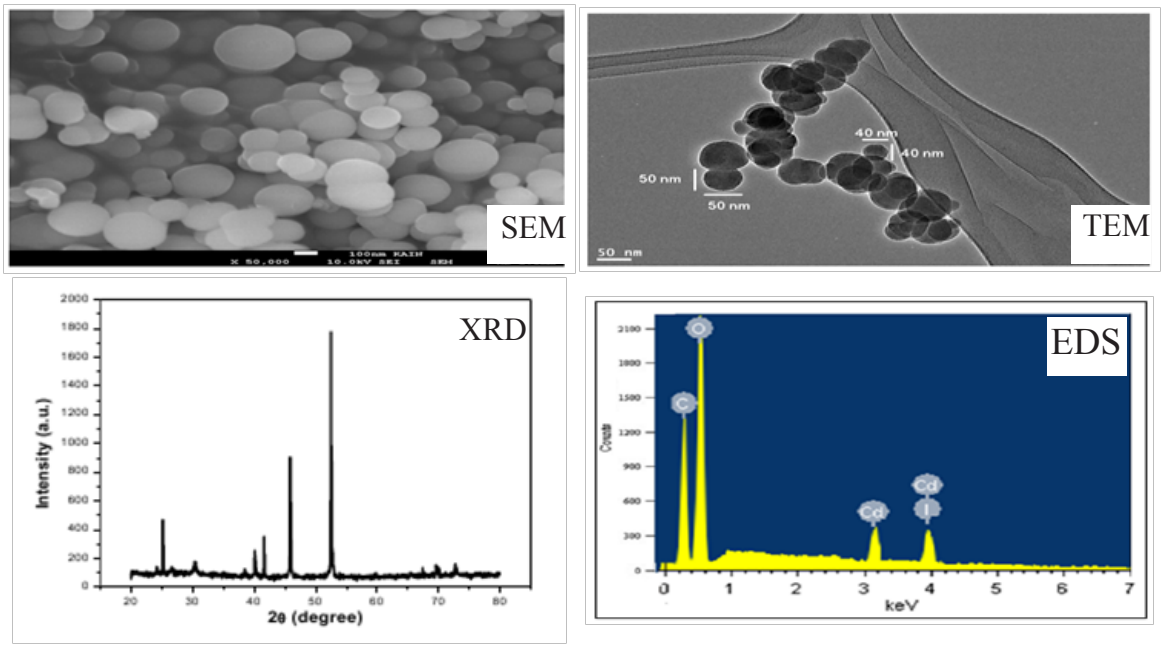
Fahad M. Al-Jekhedab[1], Abdullah S. Aldwayyan[2], Ismail Warad[3]

[1]Electronics, Communications and Photonics Program, King Abdulaziz City for Science and Technology, PO Box 6086, Riyadh 11442. Saudi Arabia.
[2]Department of Physics and Astronomy, College of Science, King Saud University, PO Box 2455, Riyadh 11451. Saudi Arabia.
[3]Department of Chemistry, College of Science, An-Najah National University, PO Box 7, Nablus, Palestine.
warad@ksu.edu.sa,

Abstract

The science of nanomaterials has created great excitement and expectation in the last decade at the nanoscale fundamental properties changes for example a nanoscale wire or circuit component does not necessarily obey ohm's law when we reach nanoscale everything will be change, including gold's color, melting point and chemical properties [1]. Oxide nanomaterials used as catalysts and starting materials for preparing advanced structural ceramics [2]. CdO an important n-type semiconductor with a direct band gap of 2.5 eV and an indirect band gap of 1.98 eV, has promising applications in catalyst sensors, nonlinear materials, solar cells, and other optoelectronic devices etc [2-4].

Cadmium oxide (CdO) nanoparticles were prepared strating from Organic CdI2 complex through simple calcination step at 600 oC, the obtained product are analyzed by SEM, TEM, TG/DTA, IR, and X-ray diffractometer (XRD), the average size of CdO nanoparticles found to be 50 nm [5].



References:

1. V. S. Muralidharan, A .Subramania, Nanoscience and technology , Crc Press, New Delhi, (2009).
2. K .V. Rao, C .S. Sunandana, Solid State Phys, 50 (2005) 235.
3. J-Y Park, Y-J Lee, K-W Jun, J-O Aeg, D-J Yim, J Ind Eng Chem, 12(6) (2006) 882.
4. T. Kuo, M.H. Huang, J. Phys. Chem B, 110 (2006) 13717.
5. F.M. Al-Jekhedab et al under construction.