Contribution ID: **552** Type: **Poster Presentation**

One step synthesis and characterization of Indium Monoselenide nanoparticles for photovoltaic application

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Abstract content
   (Max 300 words)

Nano-sized indium monoselenide, InSe nanoparticles have been synthesized by a novel simple route. The route is based on the thermolysis and selenium and indium (iii)chloride in oleylamine. The role of oleylamine in this method is to reduce selenium while acting as both the solvent and capping agent. This method provides feasible and homogeneous environment for the formation of layers of InSe which later break down to quantum dots as the time progresses. This is contrary to the two processes involved in the growth of nanocrystals in solution phase; the nucleation stage which is followed by the growth of the nanocrystals. The InSe samples were synthesized at a temperature of 200˚C, the mole ratio of Se:InCl3 was 1:1. Time was varied and its effect on the process studied. At the same reaction conditions, the effect of changing the solvent (mixture of oleylamine and oleic acid) on the size and morphology on the final nanoparticles was investigated. The optical properties of the resulting nanoparticles have been studied by obtaining their photoluminescence and absorption spectra. In addition, the morphology and phase structure of the Indium monoselenide nanoparticals have been determined by X-ray diffraction and transmission electron microscopy.

Apply to be
 considered for a student
   award (Yes / No)?

YES

Level for award
 (Hons, MSc,
   PhD)?

MSc

Main supervisor (name and email)
and his / her institution

Dr. Nosipho Moloto, Nosipho.Moloto@wits.ac.za. University of Witwatersrand.

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

No

Primary author: Ms AIRO, Mildred (MSc student, School of Chemistry, University of Witwatersrand)

Presenter: Ms AIRO, Mildred (MSc student, School of Chemistry, University of Witwatersrand)

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