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Background

Metal chalcogenide thin films with thickness ranging from nanometer to several micrometers were synthesized using various deposition methods such as chemical bath deposition method, spray pyrolysis and chemical vapor deposition. The term chalcogen includes all the elements of the group sixteen in the periodic table and the compounds that contain minimum one chalcogens are termed as chalcogenides. However, in view of technological importance, the term chalcogenide is frequently associated with the compounds containing considerable quantities of sulfur, selenium, tellurium. Nanostructured thin films are attracting considerable attention due to have wide applications in solar cells, sensor devices, optoelectronic device, photoconductor, optical imaging, optical mass memories, hologram recording and solar selective coatings. These semiconductor materials possess increased structural integrity as well as unique optical, chemical, and electrical properties. The unique function of these nanomaterials directly depends on their size, morphology, composition and structure dependent properties.