

## MS40-P02 | STRUCTURAL AND OPTICAL PROPERTIES OF CuS NANOPARTICLES

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Materials in the nanometre scale possess important physical and chemical properties which are very different to those of the bulk. Among these nanomaterials, semiconductor nanoparticles have attracted particular attention due to their varied technological applications mainly in nanotechnology, biology and medicine. This work investigate the effect of the polyethylene glycol molecule on the structural, morphology and optical properties of copper sulfide nanoparticles (CuS). CuS nanoparticles are synthesized in solution by chemical precipitation of dissolved precursors, copper sulfate ( $\text{CuSO}_4$ ) and thioacetamide ( $\text{CH}_3\text{CSNH}_2$ ). The determination of size, morphology and lattice parameters was performed by the Rietveld analysis of the X-ray diffraction patterns and the optical properties by UV-visible spectrophotometer. The results show that the presence of polyethylene glycol (PEG) as a stabiliser molecule has a crucial role on structural and optical properties of CuS nanoparticles.