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Title: Structural, optical, magnetic and photocatalytic properties of Co doped CuS diluted magnetic semiconductor nanoparticles

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Research highlights

- $\text{Cu}_{1-x}\text{Co}_x\text{S}$ nanoparticles were synthesized via chemical co-precipitation method.
- Structural, band gap, magnetization and photocatalysis studies were carried out.
- All the doped samples exhibited intrinsic room temperature ferromagnetism.
- Effect of magnetic properties on photocatalytic activity was analyzed.
- $\text{CuS}:\text{Co}$ nanoparticles may find applications in photocatalytic and spintronic devices.

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