

Investigation of binary nanocrystal superlattice

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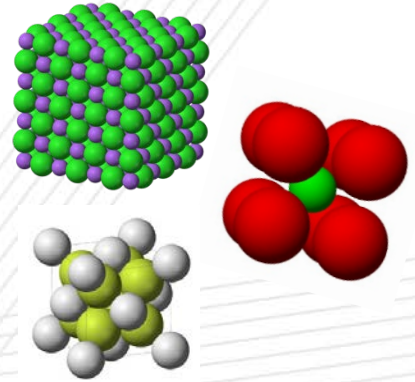
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Investigation of Binary Nanocrystal Superlattice

1. Introduction

Binary Nanocrystal Superlattice (BNSL) is the assembly of nanoparticles of two different materials. Based on the fact that atoms and molecules can result in various crystal structures and properties, nanocrystal will definitely give an even wider choices of properties due to its size quantum effect.



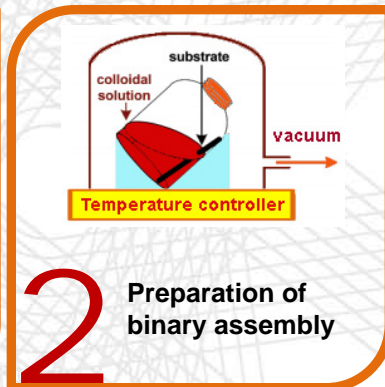
2. Objective

To investigate the properties of γ -Fe₂O₃/CdSe ordered structures

3. Method



1 Synthesis of nanoparticles (γ -Fe₂O₃ and CdSe)

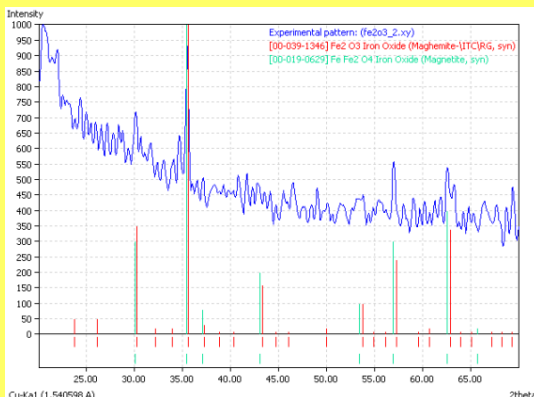


2 Preparation of binary assembly

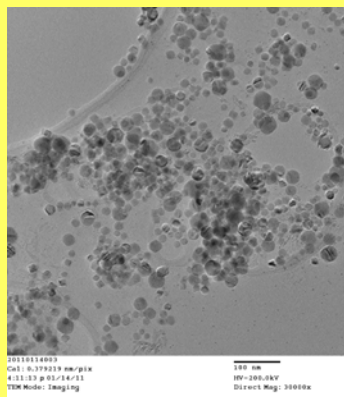
TEM
I-V Measurement

3 Characterization of binary assembly

4. Result



XRD analysis shows that iron oxide has been formed



TEM image shows γ -Fe₂O₃ nanoparticles

5. Conclusion

γ -Fe₂O₃ & CdSe nanoparticles have been produced. In the future, CdSe nanoparticles will be characterized and the two nanoparticles will be mixed to get binary superlattice.