

UV- STUDY:

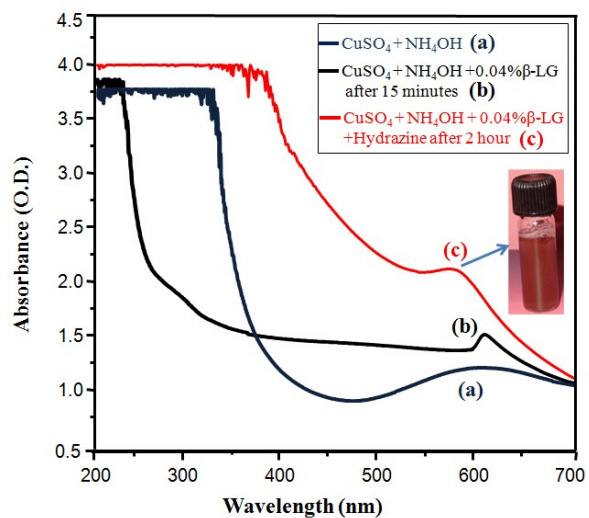


Fig. 1 UV visible spectra of $\text{CuSO}_4 + \text{NH}_4\text{OH}$ (a), $\text{CuSO}_4 + \text{NH}_4\text{OH} + 0.04\% \beta\text{-lg}$ after 15 minutes(b), $\text{CuSO}_4 + \text{NH}_4\text{OH} + 0.04\% \beta\text{-lg} + \text{Hydrazine}$ after 2 hour(c)

X-RAY DIFFRACTION:

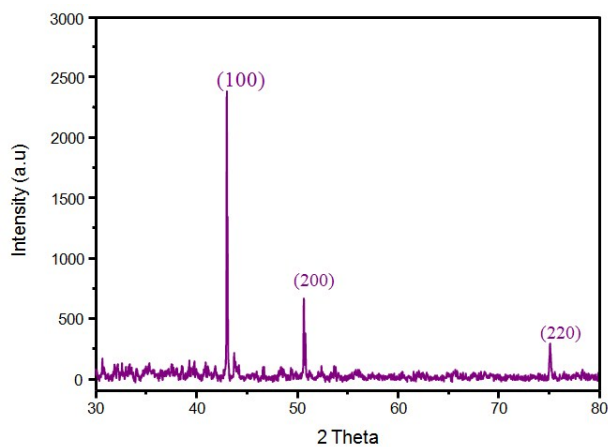


Fig. 2 XRD patterns of synthesized Cu nano particles at 25°C showing three types of planes (100), (200) and (220)

FOURIER TRANSFORM-INFRARED SPECTROSCOPY:

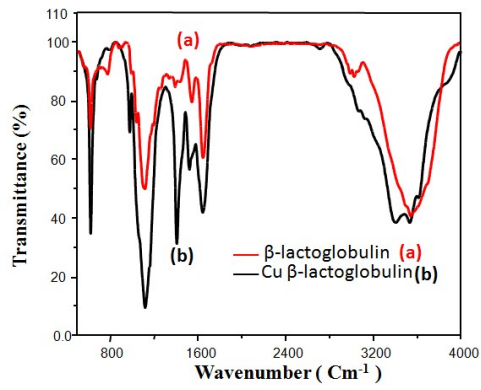


Fig. 3 FTIR spectra of pure β -lg [curve (a)] and Cu β -lg nanocomposite [curve (b)]

FE-SEM:

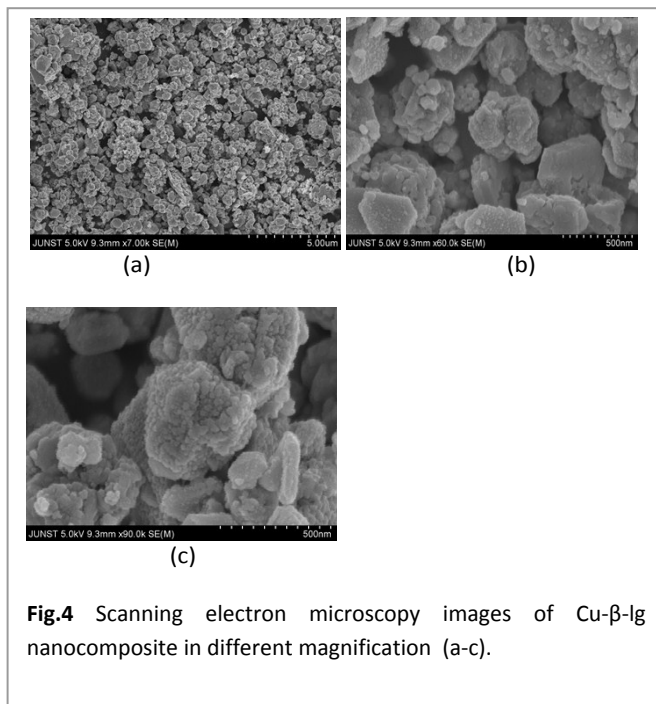


Fig.4 Scanning electron microscopy images of Cu- β -lg nanocomposite in different magnification (a-c).

TEM :

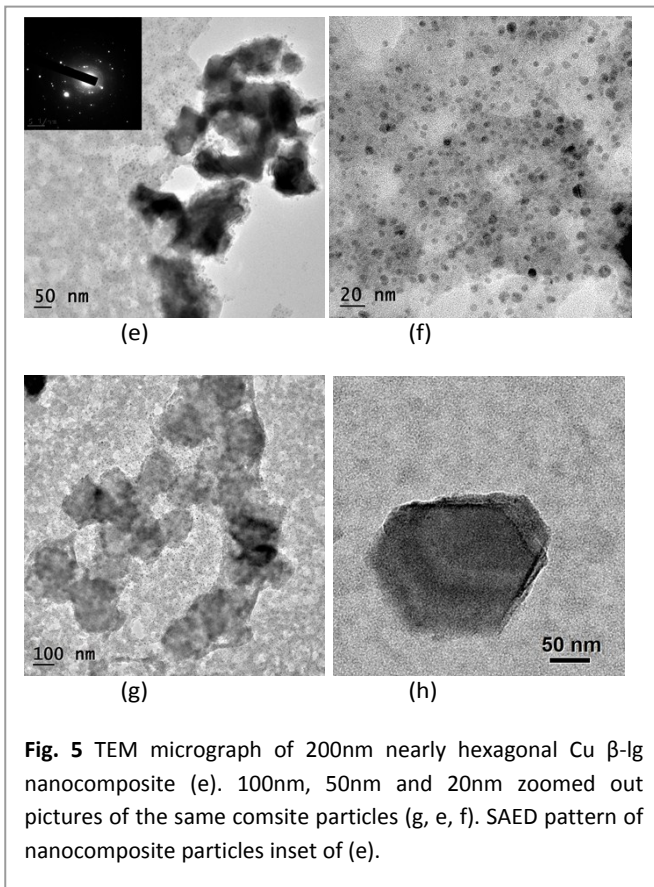
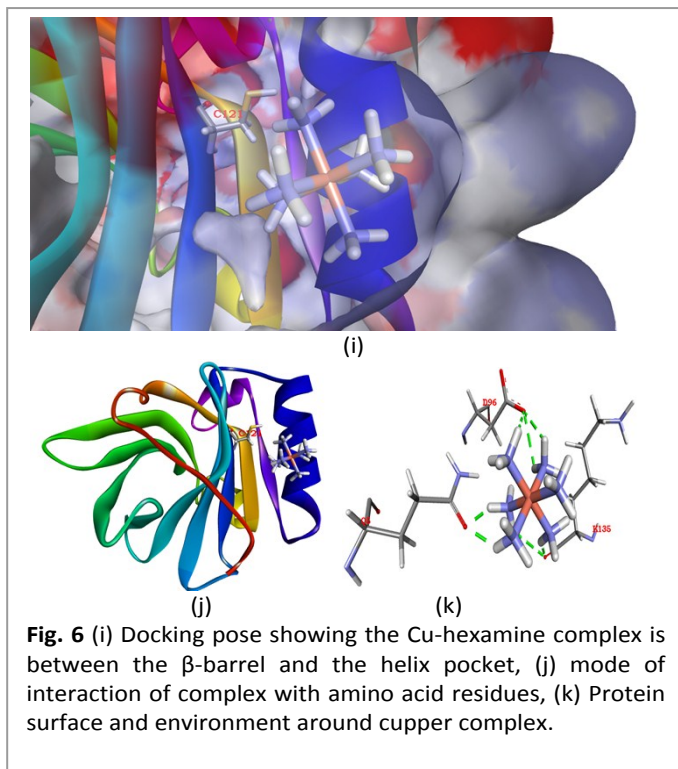


Fig. 5 TEM micrograph of 200nm nearly hexagonal Cu β -Ig nanocomposite (e). 100nm, 50nm and 20nm zoomed out pictures of the same comsite particles (g, e, f). SAED pattern of nanocomposite particles inset of (e).

DOCKING STUDY:



Possible mechanism:

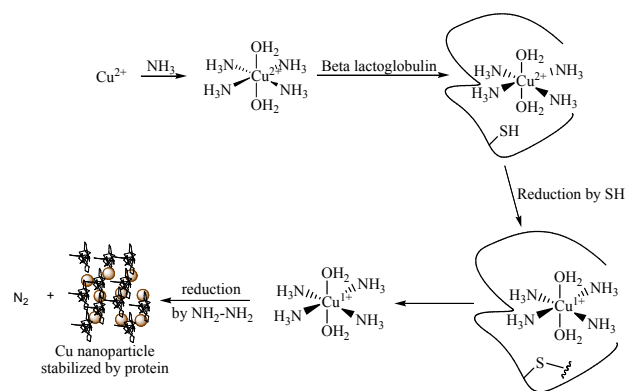


Fig. 7 Possible mechanism of synthesis of Cu β -Ig-nanocomposite