

Melting and Recrystallization of Indium Nanoparticles by Transmission Electron Diffraction
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Indium films (nominal 10 nm thick) have been grown on amorphous-carbon coated copper grids by thermal evaporation method in an ultra high vacuum environment at room temperature. The films were then heated till its melting to indium liquid and then naturally cooling down to room temperature. The procedures were *in situ* characterized by transmission electron diffraction and the melting temperature at around 97 °C and recrystallization at 62 °C are obtained. It is noticed that the different orientations of indium film shows different trends during melting-cooling cycles.

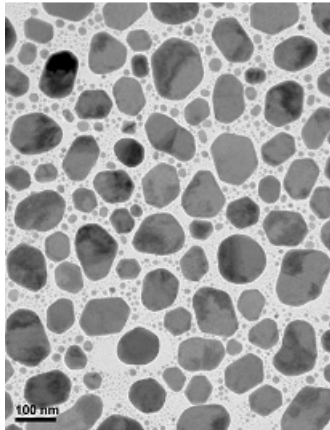
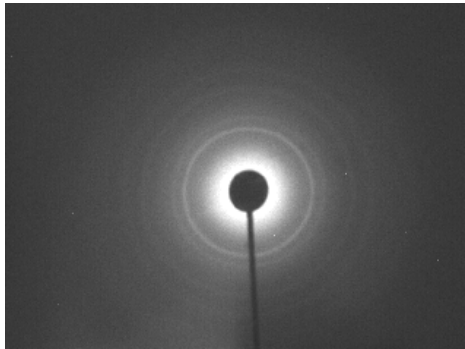
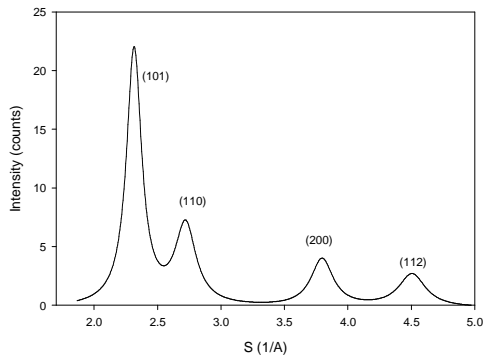


FIG. 1. TEM image of 10nm indium film on a-carbon coated Cu grids.



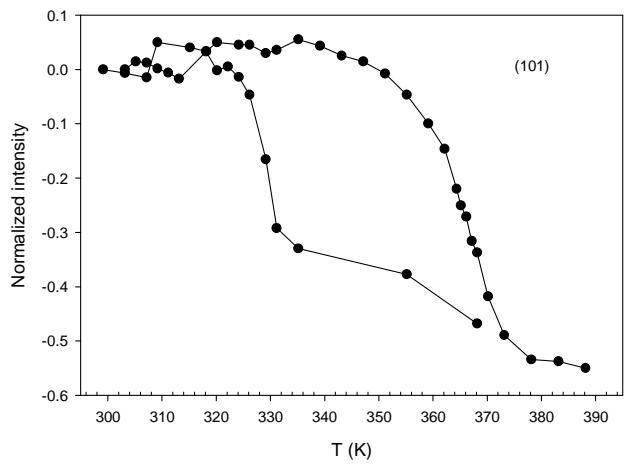
(a)



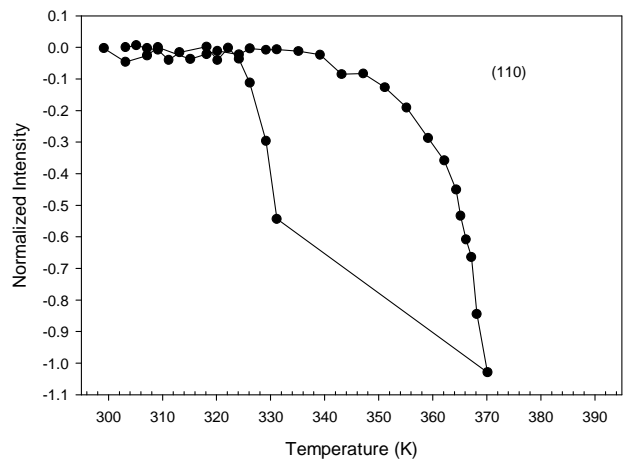
(b)

FIG. 2. Diffraction pattern (a) of 10nm indium film and its radial distribution function (RDF) curve by TED at

room temperature.



(a)



(b)

FIG. 3. Normalized intensity variance curves of (a) (101) and (b) (110) orientations of 10 nm indium film under different temperatures.