



Contribution ID: 104

Type: Poster

Monte Carlo study on magnetic properties in ferrimagnetic Ising thin films

Wednesday 20 June 2018 18:00 (20 minutes)

In the present work, we have studied the magnetic properties of a ferrimagnetic mixed spins $S=2$ and $S'=3/2$ Ising thin film using Monte Carlo simulations. The ground state phase diagrams of mixed spins-Ising thin film are given. The different magnetic phases are found in different planes. The critical temperatures have been found for different values of thin films. The thermal magnetization with reduced exchange interactions and crystal-fields of mixed spins are obtained with different thin films, temperatures and exchanges interactions. The multiples hysteresis and the superparamagnetic behaviour were established around the transition temperature.

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Session Classification: Poster Session Wednesday

Track Classification: Thin Film & Surface Engineering